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UNITED STATES – MEASURES AFFECTING TRADE IN LARGE CIVIL AIRCRAFT (SECOND COMPLAINT)

RECOURSE TO ARTICLE 21.5 OF THE DSU BY THE EUROPEAN UNION

REPORT OF THE PANEL

*BCI deleted, as indicated **[***]***

*HSBI omitted, as indicated **[[HSBI]]***

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ABBREVIATIONS USED IN THIS REPORT

Abbreviation	Description
ACT Program	NASA Advanced Composites Technology Program
AECA	Arms Export Control Act
AFRL	Air Force Research Laboratory
AJCA	American Jobs Creation Act of 2004
AMC	American Metalcasting Consortium
Anti-Dumping Agreement	Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994
ARMD	NASA Aeronautics Research Mission Directorate
AST Program	NASA Advanced Subsonic Technology Program
ATCAS Program	NASA Advanced Technology Composite Aircraft Structures Program
AWACS program element	DOD Airborne Warning and Control System program element
Bayh-Dole Act	*United States Code*, chapter 35, sections 200-212
B&O	Business and Occupation
BCI	Business Confidential Information
BOA	Basic Ordering Agreement
CASP	NASA Cross Agency Support Program
CATT Program	South Carolina Center for Accelerated Technology Training Program
CFD	Computational Fluid Dynamics
CFRP	Carbon Fibre Reinforced Plastic
FAA CLEEN Program	FAA Continuous Lower Energy Emissions, and Noise Program
CRA	Charles River Associates
DARPA	Defense Advanced Research Project Agency
DAS	Defense Acquisition System
D.O.	Delivery Order
DOD	U.S. Department of Defense
DRAGON Project	Diminishing Manufacturing Sources Replacement of Avionics for Global Operations and Navigation Project under the DOD AWACS program element
DSB	Dispute Settlement Body
DSU	Understanding on Rules and Procedures Governing the Settlement of Disputes
DUS&T program element	DOD Dual Use Science & Technology program element
EADS	European Aeronautics Defence and Space Company N.V.
EAR	Export Administration Regulations
EMD	Engineering, Manufacturing and Development
ERA Project	Environmentally Responsible Aviation Project under the NASA Integrated Systems Research Program
ETI Act	FSC Repeal and Extraterritorial Income Exclusion Act of 2000
FAA	U.S. Federal Aviation Administration
FAR	U.S. Federal Acquisition Regulation
FILOT	Fee-in-lieu-of taxes
FOIA	Freedom of Information Act
FPDS-NG	Federal Procurement Data Base – Next Generation
FSC	Foreign Sales Corporation
FSC/ETI	Foreign Sales Corporation/Extraterritorial Income
FY	Fiscal Year
FYDP	Future Years Defense Program
GAO	U.S. Government Accountability Office
GATT 1994	General Agreement on Tariffs and Trade 1994
HB 2294	House Bill 2294 in the State of Washington
HB 2466	House Bill 2466 in the State of Washington
HLFC	Hybrid Laminar Flow Control
HSBI	Highly Sensitive Business Information
HSR Program	NASA High Speed Research Program
ICAO	International Civil Aviation Organization
IDIQ	Indefinite Delivery/Indefinite Quantity
IP	Intellectual Property
IR&D	Independent Research and Development
IRB	Industrial Revenue Bond
IRS	U.S. Internal Revenue Service
ITAR	U.S. International Traffic in Arms Regulations
ITR	International Trade Resources LLC
JCATI	Joint Center for Aerospace Technology Innovation in the State of Washington
JCIDS	DOD Joint Capabilities Integration and Development System
LCA	Large Civil Aircraft
LCF	Large Cargo Freighter
LERD	Limited Exclusive Rights Data

Abbreviation	Description
IP ManTech program elements	Manufacturing Technology/Industrial Preparedness program elements administered individually by the Defense Logistics Agency, Air Force, Navy and Office of Secretary of Defense
MCIP	Multi-County Industrial Park
MTOW	Maximum take-off weight
NASA	U.S. National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NIAR	National Institute for Aviation Research
NPD	NASA Policy Directive
NPV	Net Present Value
NRA	NASA Research Announcement
PBBES	Planning, Programming, Budgeting, and Execution System for commissioning RDT&E under systems acquisition/military aircraft program elements
PRO-ACT Project	Procurement Readiness Optimization-Advanced Casting Technology Project under the Defense Logistics Agency IP ManTech program element
PRSEUS	Pultruded Rod Stitched Efficient Unitized Structure
R&D	Research and Development
R&T Base Program	NASA Research and Technology Base Program
RDT&E	Research, Development, Test and Evaluation
RDT&E Program	DOD Research, Development, Test and Evaluation Program
readySC	South Carolina Technical College System's job training programme
RFID	Radio Frequency Identification
RFI	Request for Information
RFP	Request for Proposal
ROA	Research Opportunities in Aeronautics
S&T	Science and Technology
SBU	Standard Billing Units
S.C.	State of South Carolina
SCM Agreement	Agreement on Subsidies and Countervailing Measures
SOW	Statement of Work
Space Act	National Aeronautics and Space Act of 1958, as amended
SEC	U.S. Securities and Exchange Commission
TIPRA	Tax Increase Prevention and Reconciliation Act of 2005
TRL	Technology Readiness Level

1 INTRODUCTION

1.1 Complaint by the European Union[1]

1.1. The European Union's complaint in this proceeding under Article 21.5 of the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) concerns the alleged failure of the United States to implement the recommendations and rulings adopted by the Dispute Settlement Body (DSB) in the original proceeding *US – Large Civil Aircraft (2nd complaint)*.

1.2. The panel report and Appellate Body report in the original proceeding were circulated to Members on 31 March 2011 and 12 March 2012, respectively. The DSB adopted the Appellate Body report and the panel report, as modified by the Appellate Body report, on 23 March 2012.[2]

1.3. In its report, as modified by the Appellate Body report, the original panel found that certain measures of the United States, including measures adopted at a sub-federal level, constituted specific subsidies to the U.S. large civil aircraft (LCA) industry[3] and were inconsistent with the Agreement on Subsidies and Countervailing Measures (SCM Agreement).

1.4. First, the panel found that certain tax exemptions and tax exclusions provided to Boeing under the Foreign Sales Corporation (FSC) legislation and the FSC Repeal and Extraterritorial Income Exclusion Act of 2000 (ETI), including the transition and grandfather provisions of the ETI Act and the American Jobs Creation Act of 2004 (AJCA), were prohibited export subsidies under Articles 3.1(a) and 3.2 of the SCM Agreement.[4] This finding was not appealed.

1.5. Second, the panel and the Appellate Body found that the following measures were inconsistent with Articles 5(c) and 6 of the SCM Agreement:

a. payments provided to Boeing by the National Aeronautics and Space Administration (NASA) pursuant to procurement contracts entered into under eight aeronautics research and development (R&D) programmes and access to facilities, equipment, and employees provided to Boeing pursuant to procurement contracts and Space Act Agreements entered into under these programmes;

b. payments and access to facilities provided to Boeing by the Department of Defense (DOD) pursuant to assistance instruments entered into under 23 Research, Development, Test and Evaluation (RDT&E) programmes;

c. tax exemptions and tax exclusions provided to Boeing pursuant to the FSC/ETI measures;

d. Washington State Business and Occupation (B&O) tax rate reduction for commercial aircraft and component manufacturers; and

e. property and sales tax abatements related to Industrial Revenue Bonds (IRBs) issued by the City of Wichita, Kansas.

1.6. These five groups of measures were found to involve specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement, and to cause serious prejudice to the interests of the European Communities, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement, as follows:

a. The NASA and DOD aeronautics R&D measures caused serious prejudice, within the meaning of Articles 5(c), 6.3(b), and (c), with respect to the 200-300 seat LCA product

[1] The European Union replaced and succeeded the European Communities as of 1 December 2009.
[2] Dispute Settlement Body, Minutes of the Meeting held on 23 March 2012, WT/DSB/M/313 (circulated 29 May 2012), para. 79.
[3] The European Communities in the original proceeding used the term "U.S. large civil aircraft industry" to refer to the Boeing Company and the McDonnell Douglas Corporation prior to its merger with Boeing. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 2.1 and 7.1).
[4] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1434-7.1464 and 8.2.

market in the form of a threat of displacement and impedance of European Communities' exports in certain third-country markets and significant lost sales.

b. The tax exemptions and tax exclusions provided to Boeing pursuant to the FSC/ETI measures, together with the Washington State B&O tax rate reduction, caused serious prejudice, within the meaning of Articles 5(c) and 6.3(c), with respect to the 100-200 seat LCA product market in the form of significant lost sales.

c. Property and sales tax abatements related to IRBs issued by the City of Wichita, Kansas complemented and supplemented the price effects of the FSC/ETI subsidies and the Washington State B&O tax rate reduction, thereby causing serious prejudice to the interests of the European Communities, within the meaning of Articles 5(c) and 6.3(c), in the 100-200 seat LCA product market in the form of significant lost sales.

1.7. In relation to the finding that the FSC/ETI measures were prohibited subsidies, within the meaning of Articles 3.1 (a) and 3.2 of the SCM Agreement, the original panel refrained from making a new recommendation under Article 4.7. The panel noted "the conclusion of the Panel in *US – FSC (Article 21.5 – EC II)*, which was upheld by the Appellate Body, that the recommendation made by the panel in the dispute in *US – FSC* continued to be 'operative'".[5]

1.8. In respect of the findings of serious prejudice caused by certain subsidies, the Appellate Body recommended that:

> {T}he DSB request the United States to bring its measures, found in this report, and in the panel report as modified by this Report, to be inconsistent with the *SCM Agreement,* into conformity with its obligations under that Agreement. More specifically, having regard to the recommendation made by the Panel in paragraph 8.9 of its Report and the provisions of Article 7.8 of the SCM Agreement, the Appellate Body recommends that the United States take appropriate steps to remove the adverse effects found to have been caused by its use of subsidies, or to withdraw those subsidies.[6]

1.9. On 23 September 2012, the United States provided a notification to the DSB identifying "a number of actions to withdraw the subsidies found to have caused adverse effects or to remove their adverse effects", in light of which the United States considered that it "ha{d} fully complied with the recommendations and rulings of the Dispute Settlement Body in this dispute".[7]

1.10. On 25 September 2012, the European Union requested consultations with the United States, explaining that it was of the view that "{t}he actions and events listed by the United States in its 23 September 2012 notification do not withdraw the subsidies or remove their adverse effects, as required by Articles 4.7 and 7.8 of the SCM Agreement" and that "the United States has failed to achieve compliance with the recommendations and rulings of the DSB".[8]

1.11. The European Union and the United States held consultations on 10 October 2012, but the consultations failed to resolve the dispute.

1.2 Panel establishment and composition

1.12. On 11 October 2012, the European Union requested the establishment of a panel "in accordance with Articles 4.4 and 7.4 of the SCM Agreement and Article 21.5 of the DSU", with

[5] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 8.7.
[6] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1352. (emphasis original)
[7] *US – Large Civil Aircraft (2nd complaint)*, Communication from the United States, WT/DS353/15 (dated 23 September 2012, circulated 26 September 2012) (United States' Compliance Communication), para. 2.
[8] *US – Large Civil Aircraft (2nd complaint)*, European Union's request for consultations, recourse to Article 21.5 of the DSU, WT/DS353/16 (dated 25 September 2012, circulated 2 October 2012) (European Union's request for consultations), p. 2.

standard terms of reference.[9] At its meeting on 23 October 2012, the DSB referred this dispute to the original panel, if possible, in accordance with Article 21.5 of the DSU.[10]

1.13. The Panel's terms of reference are the following:

> To examine, in the light of the relevant provisions of the covered agreements cited by the parties to the dispute, the matter referred to the DSB by the European Union in document WT/DS353/18 and to make such findings as will assist the DSB in making the recommendations or in giving the rulings provided for in those agreements.

1.14. In accordance with Article 21.5 of the DSU, the Panel was composed on 30 October 2012 as follows[11]:

Chairperson:	Mr Crawford Falconer
Members:	Mr Francisco Orrego Vicuña Mr Virachai Plasai

1.15. Australia, Brazil, Canada, China, Japan, Korea, and Russia notified their interest in participating in the Panel proceedings as third parties.

1.3 Panel proceedings

1.3.1 General

1.16. The Panel held an organizational meeting with the parties on 2 November 2012.

1.17. After consultation with the parties, the Panel adopted its Working Procedures[12] on 18 December 2012 and timetable on 14 January 2013. The Panel revised its timetable on 12 April 2013 and 4 July 2013. The Panel made additional modifications to its timetable over the course of the proceeding.

1.18. At the request of the parties and after consulting them, the Panel adopted Additional Procedures to Protect Business Confidential Information and Highly Sensitive Business Information (BCI/HSBI Procedures) on 18 December 2012.[13]

1.19. The European Union and the United States filed their first written submissions on 28 March 2013 and 27 June 2013, respectively and their second written submissions on 25 July 2013 and 22 August 2013, respectively. Brazil, Canada, Japan, and Korea as third parties filed written submissions on 23 July 2013.[14]

1.20. On 25 September 2013, the Panel sent the parties a list of issues which the parties were requested to address in their oral statements at the meeting with the parties. The Panel held one substantive meeting with the parties on 29-31 October 2013. A session with the third parties took place on 30 October 2013. At the request of the parties, the Panel's meeting with the parties was

[9] *US – Large Civil Aircraft (2nd complaint)*, European Union's request for the establishment of a panel, recourse to Article 21.5 of the DSU, WT/DS353/18 (dated 11 October 2012, circulated 12 October 2012) (European Union's request for the establishment of a panel), para. 34.

[10] Dispute Settlement Body, Minutes of the Meeting held on 23 October 2012, WT/DSB/M/323 (circulated 13 December 2012), para. 81. At this meeting, the United States stated its view that the panel was being established only under Article 21.5 of the DSU. (Dispute Settlement Body, Minutes of Meeting held on 23 October 2012, WT/DSB/M/323 (circulated 13 December 2012), paras. 78 and 79).

[11] *US – Large Civil Aircraft (2nd complaint)*, Recourse to Article 21.5 of the DSU by the European Union, Constitution of the Panel, Note by the Secretariat, WT/DS353/21 (dated 23 October 2012, circulated 5 November 2012), para. 3.

[12] See the Panel's Working Procedures in Annex A-1.

[13] The BCI/HSBI Procedures were subsequently revised several times. The final version is attached in Annex A-2.

[14] Australia, China, and Russia did not make written submissions or oral statements to the Panel.

opened to the public by means of a delayed video showing.[15] A portion of the Panel's meeting with the third parties was also opened to the public by means of a delayed video showing.[16]

1.21. In addition to the questions that the Panel had posed in December 2012 at the request of the parties that the Panel seek information under Article 13 of the DSU[17], the Panel posed questions to the parties and third parties on 7 November 2013 and additional questions to the parties on 4 November 2014 and 17 September 2015.

1.22. On 11 August 2016, the Panel issued the descriptive part of its Report to the parties. The Panel issued its Interim Report to the parties on 16 September 2016. The Panel issued its Final Report to the parties on 20 December 2016.

1.3.2 The Panel's ruling and decisions regarding Annex V of the SCM Agreement and requests of the parties that the Panel seek information under Article 13 of the DSU

1.23. On 31 October 2012, eight days after the DSB established the Panel, the European Union filed a preliminary ruling request[18] asking the Panel to rule that the conditions for the automatic initiation of an information-gathering procedure under Annex V of the SCM Agreement had been met in this case and that, consequently, automatic initiation of an Annex V procedure had occurred, was deemed to have occurred or should have occurred. The European Union also requested the Panel to exercise its right under Article 13 of the DSU to seek certain information by posing to the United States questions that the European Union had prepared for submission under Annex V of the SCM Agreement that it considered necessary for the Panel to carry out its mandate.

1.24. In a submission filed on 8 November 2012[19], the United States disputed the European Union's interpretation of the provisions of the SCM Agreement relating to the initiation of procedures under Annex V and requested the Panel to reject the European Union's request regarding the initiation of procedures under Annex V. While the United States agreed with the European Union that there were unique reasons that would justify the Panel seeking information from the parties at an early point in the proceeding, the United States expressed its disagreement with the European Union regarding the timing, manner and extent to which the Panel should exercise its authority to seek information pursuant to Article 13 of the DSU.

1.25. On 15 November 2012, the Panel advised the parties that it would exercise its authority under Article 13 of the DSU to seek information from the United States, and that it would communicate the rationale for that decision and the modalities that the Panel intended to apply, in the near future.[20] The Panel also invited the United States to submit any specific comments on the questions proposed by the European Union. On 19 November 2012, in partial response to the Panel's invitation, the United States requested the Panel to seek information from the European Union pursuant to Article 13 of the DSU in order to assist the Panel with its examination of the matter before it.[21]

1.26. Regarding the European Union's request of 31 October 2012, and after hearing the views of both parties[22], the Panel issued a communication to the parties and third parties on 26 November 2012, finding that Annex V procedures were available in compliance proceedings, the conditions for initiating an Annex V procedure had been met, and automatic initiation of an

[15] See Additional Working Procedures for the partial opening to the public of the meeting of the Panel in Annex A-3.

[16] Brazil, Canada, and Japan consented to having their statements videotaped for delayed showing. Korea did not consent.

[17] See para. 1.27 below.

[18] European Union's request for a preliminary ruling and request for the Panel to exercise its authority pursuant to Article 13 of the DSU, dated 31 October 2012.

[19] United States' response to European Union's request for a preliminary ruling and request for the Panel to request information pursuant to Article 13 of the DSU, dated 8 November 2012.

[20] The Panel did so in its communications of 5 and 18 December 2012. (See Annexes E-2 and E-3).

[21] United States' request for the Panel to exercise its authority pursuant to Article 13 of the DSU, dated 19 November 2012.

[22] The United States submitted its comments on 8 November 2012, and the European Union submitted further views on 5 and 9 November 2012. The European Union opposed the United States' request that the Panel seek information from the European Union pursuant to Article 13 of the DSU in a letter dated 23 November 2012.

Annex V procedure had occurred.[23] The Panel also noted that, while the European Union considered it was entitled to proceed with an Annex V procedure, the European Union had requested the Panel to seek information through an early exercise of its authority under Article 13 of the DSU. The Panel recalled that it had requested the United States to comment on the questions suggested by the European Union and indicated that it would make an information request to the United States under Article 13 of the DSU "as soon as possible taking into account the requests and comments made and responses received".[24] Regarding the United States' request that the Panel seek information from the European Union pursuant to Article 13 of the DSU, the Panel further indicated that it would make an information request to the European Union under Article 13 of the DSU, "as soon as possible taking into account the request and any comments received".[25]

1.27. After receiving the comments of the parties on the questions that each party proposed the Panel ask the other party in exercise of the Panel's authority to seek information under Article 13 of the DSU, the Panel posed questions to the United States on 5 December and 18 December 2012, and to the European Union on 18 December 2012.[26] Following requests for extensions of time to respond to certain of the Panel's requests for information, the United States provided its responses to the questions posed by the Panel pursuant to Article 13 of the DSU on 25 January 2013, 1, 14, and 28 February, 22 March, and 2 May 2013.[27] The European Union provided its responses to the questions posed by the Panel pursuant to Article 13 of the DSU on 28 February 2013.

1.28. By letters dated 19, 20, and 21 December 2012, Brazil, Australia, and Canada respectively, as third parties to this dispute, noted that they were initially not made aware of a request by the European Union for a preliminary ruling regarding the interpretation of provisions relating to the initiation of procedures under Annex V of the SCM Agreement, and of requests by both the European Union and the United States for the Panel to exercise its right to seek information under Article 13 of the DSU. On 25 January 2013, the Panel issued a communication to the parties and third parties requesting the parties to serve upon the third parties their relevant submissions concerning the European Union's request for a preliminary ruling in regard to Annex V, to the extent that they had not already done so, on the grounds that these submissions could properly be considered to be "submissions", within the meaning of Article 10.3 of the DSU.[28] The Panel further considered that, in the circumstances of the present requests for information pursuant to Article 13 of the DSU, the communications concerning these requests and the parties' responses to the requests, were not "submissions" which the third parties were entitled to receive pursuant to Article 10.3 of the DSU. However, given the close link between the particular Article 13 requests and issues concerning the interpretation and application of Annex V of the SCM Agreement, the Panel considered it appropriate in this situation that the communications concerning the Article 13 requests (but not the parties' responses to those requests) be provided to the third parties. Accordingly, the Panel served upon the third parties the information requests that it had made to the United States and the European Union pursuant to Article 13 of the DSU.

1.3.3 Requests for preliminary rulings on the Panel's terms of reference and other procedural rulings

1.3.3.1 The United States' request for preliminary rulings

1.29. On 13 November 2012, the United States submitted a request for preliminary rulings, objecting to the inclusion of certain claims and challenged measures as outside the Panel's terms

[23] Preliminary ruling and decision regarding information-gathering under Article 13 of the DSU, dated 26 November 2012, para. 33, reproduced in Annex E-1.
[24] Preliminary ruling and decision regarding information-gathering under Article 13 of the DSU, dated 26 November 2012, para. 52, reproduced in Annex E-1.
[25] Preliminary ruling and decision regarding information-gathering under Article 13 of the DSU, dated 26 November 2012, para. 52, reproduced in Annex E-1.
[26] Communications of the Panel dated 5 December 2012 and 18 December 2012, reproduced in Annexes E-2 and E-3, respectively. In addition, the Panel in its communication of 18 December 2012 invited the parties to make further submissions regarding the measures that properly fall within the scope of this proceeding in their first written submissions.
[27] Such requests for extensions of time were made by letters from the United States dated 23 January 2013 and 14 February 2013, and by email dated 12 February 2013.
[28] Communication regarding third-party rights, dated 25 January 2013, reproduced in Annex E-4.

of reference. The parties exchanged views on the merits of this request in a number of submissions, including their first and second written submissions.[29] The Panel addresses the issues raised by this request of the United States in Section 7 of this Report.

1.3.3.2 The European Union's request for leave to file an additional submission pertaining to Washington State Legislature Substitute Bill 5952

1.30. On 4 March 2014, the European Union requested leave from the Panel to file an additional submission detailing "the legal ramifications of the 2013 amendments to the Washington State measure".[30] The European Union asserted that these 2013 amendments (Washington State Senate Bill 5952 (SSB 5952)) constitute "additional measures taken to comply by the United States"[31] that are properly within the scope of this proceeding. In a letter dated 21 March 2014, the United States requested the Panel to deny the European Union's request to file an additional submission, as inconsistent with the requirements of Article 6.2 of the DSU and the Panel's Working Procedures. The European Union responded on 31 March 2014, requesting that the Panel proceed to consider the substance of its arguments. On 9 April 2014, the United States reiterated its request that the Panel disregard the European Union's request.[32]

1.31. In a communication to the parties dated 27 May 2014, the Panel advised that it had decided to decline the European Union's request and indicated that it would issue the reasons underlying its decision in due course. On 18 September 2014, the Panel issued to the parties its *Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952*. These reasons as issued on 18 September 2014 are reproduced in Section 7.7 of this Report.

1.3.3.3 Other procedural rulings

1.32. On 23 October 2013, the Panel issued an additional ruling regarding renewed requests from the European Union for additional information in connection with certain NASA and DOD contracts, NASA, DOD, and FAA technical reports, NASA new technology reports, and documents related to certain sales campaigns.[33]

2 PARTIES' REQUESTS FOR FINDINGS AND RECOMMENDATIONS

2.1. The European Union requests that the Panel find that the United States has failed to implement the DSB recommendations in *US – Large Civil Aircraft (2nd complaint)* to withdraw the subsidies or take appropriate steps to remove the adverse effects, pursuant to Article 7.8 of the SCM Agreement.

2.2. In particular, the European Union requests that the Panel find that:

a. subsequent to the end of the implementation period, the United States grants or maintains the subsidies to the U.S. LCA industry through the following programmes and measures:

i. NASA aeronautics R&D measures;

[29] United States' request for preliminary rulings, dated 13 November 2012; European Union's letter to the Panel, dated 13 November 2012; European Union's response to the United States' request for preliminary rulings, dated 23 November 2012; and United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012. In response to a communication of the Panel dated 6 May 2013 addressing an issue outlined in paragraph 55 of the European Union's first written submission, the European Union filed a "supplemental submission" on the United States' request for preliminary rulings on 13 May 2013 prior to the United States filing its first written submission.

[30] European Union's letter to the Panel, dated 4 March 2014, para. 2.

[31] European Union's letter to the Panel, dated 4 March 2014, para. 1.

[32] United States' letter to the Panel, dated 9 April 2014.

[33] Decision regarding requests for certain information, dated 23 October 2013, reproduced in Annex F-2. As noted in para. 2.5 of that ruling, certain of the categories of information identified by the European Union in its requests for additional information were within the scope of the Panel's Article 13 request to the United States in December 2012.

ii. the Federal Aviation Administration's Continuous Lower Energy Emissions, and Noise Program (FAA CLEEN);

iii. the DOD RDT&E Program;

iv. income tax exemptions/exclusions pursuant to FSC/ETI legislation and successor acts;

v. property and sales tax concessions for LCA component production facilities associated with IRBs issued by the City of Wichita;

vi. certain tax and other measures applied by the State of Washington and municipalities therein; and

vii. measures applied by the State of South Carolina and municipalities therein in the context of "Project Gemini" and "Project Emerald" as well as "Phase II";

b. each of these subsidies is also inconsistent with Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III of the GATT 1994[34]; and

c. the subsidies collectively cause present adverse effects to LCA-related interests of the European Union, in violation of Article 5 of the SCM Agreement. In particular, the subsidies are a genuine and substantial cause of:

i. displacement and impedance, or threat thereof, in the LCA product markets of the United States, within the meaning of Article 6.3(a) and footnote 13 of the SCM Agreement;

ii. displacement and impedance, or threat thereof, in the LCA product markets of several third countries, within the meaning of Article 6.3(b) and footnote 13 of the SCM Agreement;

iii. significant price suppression, or threat thereof, in the LCA product markets, within the meaning of Article 6.3(c) and footnote 13 of the SCM Agreement; and

iv. significant lost sales, or threat thereof, in the LCA product markets, within the meaning of Article 6.3(c) and footnote 13 of the SCM Agreement.

2.3. The European Union requests that the Panel make "appropriate consequential recommendations".[35]

2.4. The United States requests the Panel to reject all claims of the European Union. The United States also requests that the Panel rule that certain claims are outside the Panel's terms of reference or otherwise outside the scope of this proceeding.[36]

3 ARGUMENTS OF THE PARTIES

3.1. The arguments of the parties are reflected in their executive summaries, provided to the Panel in accordance with paragraph 12 of the Working Procedures adopted by the Panel (see Annexes B-1 to B-4 and C-1 to C-3).

[34] The European Union in its subsequent submissions confines its claim under Article III of the GATT 1994 to paragraph 4 of that provision, see fn 606.

[35] European Union's first written submission, paras. 1933 and 1934.

[36] See Section 1.3.3 above. The Panel addresses the issues raised by this request of the United States in Section 7 of this Report.

4 ARGUMENTS OF THE THIRD PARTIES

4.1. The arguments of Brazil, Canada, Japan, and Korea are reflected in their executive summaries, provided in accordance with paragraph 12 of the Working Procedures adopted by the Panel (see Annexes D-1 to D-8).

5 INTERIM REVIEW

5.1 Introduction

5.1. The Panel issued its Interim Report to the parties on 16 September 2016. Both parties submitted written requests for review of precise aspects of the Interim Report on 14 October 2016, and written comments on each other's written requests on 28 October 2016. The parties also provided written comments on the treatment of certain information as BCI or HSBI in their respective requests. Neither party requested the Panel to hold an interim review meeting.

5.2. The Panel explains below its responses to issues of a substantive nature raised by the parties in their requests for review of precise aspects of the Interim Report. The Panel has also corrected a number of typographical and other non-substantive errors throughout the Interim Report, including those identified by the parties, which are not specifically referred to below. More specifically, the Panel has corrected stylistic and grammatical errors and errors in references to submissions and exhibits. The Panel has also corrected inconsistencies in terminology and has made changes to improve the clarity and accuracy of the Report. In addition, the Panel has added references to dispute settlement reports that were circulated subsequent to the date of issuance of the Interim Report to the parties.

5.3. Due to changes as a result of our review, the numbering of the footnotes and certain of the paragraphs in the Final Report has changed from the Interim Report. The text below refers to the footnote and paragraph numbers in the Interim Report, with the corresponding footnote numbers, and where applicable, paragraph numbers, in the Final Report provided in parentheses for ease of reference.

5.2 Specific requests for review submitted by the parties

5.2.1 Explicit attributions of arguments to the parties

5.4. The Panel has, in various places throughout the Interim Report, omitted explicit attribution of an argument to the United States or the European Union, as the case may be, where it considered the context made the attribution clear, albeit implicitly.

5.5. The European Union has requested a number of modifications to descriptions of the parties' arguments to explicitly attribute the argument to a party and thereby remove the possibility that the particular argument could be misunderstood as a finding of the Panel. The United States does not object to the omission of attributions to the parties where the argument in question occurs in a section labelled "main arguments of the parties" or "main arguments of the parties and third parties", as the context makes clear that the text summarizes arguments by one of the parties and the omission of attributions improves the readability of the Interim Report.[37] With respect to the requested specific attribution to the United States of an argument described in the sixth sentence of paragraph 8.1002 of the Interim Report (now paragraph 8.1006), which appears in an "Evaluation" section, the United States considers that the context of the sentence and the existence of a footnote citing a U.S. submission as the source of the statements in the sentence would lead an alert reader to understand that the statement was not a finding of the Panel. However, the United States does not oppose the insertion of a textual attribution of that sentence to the United States, for the avoidance of doubt.

[37] Indeed, the United States sees no grounds for the European Union's concerns, both in light of the drafting of the relevant paragraphs and the headings of the sections. Additionally, it considers that adding the attributions requested by the European Union could suggest an *a contrario* reading that unattributed sentences in the summaries of arguments were in fact findings of the Panel. The United States requests the Panel to take these concerns into account in evaluating the European Union's comments.

5.6. The Panel has decided to grant the European Union's requests to explicitly attribute arguments to the parties, even where those arguments appear in a section labelled as "main arguments of the parties" or "main arguments of the parties and third parties". While specific attributions make the text longer, the Panel has concluded that it is important to ensure that the reader clearly understands when an argument or assertion is that of a party, and when it is a legal or factual finding of the Panel. The Panel adds that in acceding to the European Union's requests for specific attributions of arguments to parties, even within sections clearly labelled as "main arguments of the parties" or "main arguments of the parties and third parties", it does not thereby suggest that arguments within those sections that are not specifically attributed to a party are findings of the Panel.

5.2.2 Introduction to Panel findings

Paragraph 6.21

5.7. The European Union requests that the Panel replace the word "subsidies" with "the subsidy" in the second sentence of paragraph 6.21, and that the words "from any subsidies that are not withdrawn" be added to the end of the same sentence, for the sake of clarity. The United States did not respond specifically to this aspect of the European Union's comment.

5.8. The Panel has modified the second sentence of paragraph 6.21 as requested by the European Union.

5.9. The European Union further requests that its position as to ways in which an implementing Member may achieve withdrawal of a subsidy be more comprehensively reflected in paragraph 6.21, specifically by adding the following sentence between the second and third sentences of that paragraph: "The European Union argues that the withdrawal of a subsidy can be achieved through the repayment of the financial contribution or the removal of the benefit." In support of this request, the European Union asserts that its position in the present dispute, consistent with its position in *EC and certain member States – Large Civil Aircraft*, has been that the withdrawal of a subsidy can be achieved through the removal of one or two constituent elements of the subsidy; i.e. the financial contribution or the benefit. In this regard, the European Union explains that repayment of the financial contribution, unlike refraining from providing an *additional* financial contribution, would achieve withdrawal of the subsidy. The European Union asserts that its position is that there is no "obligation" on an implementing Member to seek or secure repayment of a financial contribution; it is but one option available to a Member choosing to achieve compliance by withdrawing the subsidy, rather than by removing the adverse effects. The European Union asserts that "consistent with this position", it has argued in its submissions that, for each instance of a subsidy that had not been withdrawn, there continued to be both a (non-repaid) financial contribution and a benefit.[38]

5.10. The United States requests the Panel to reject this aspect of the European Union's comment regarding paragraph 6.21 as the Panel's summary as currently drafted reflects the actual arguments and positions taken by the European Union and the interim review stage is not the appropriate stage for the European Union to recast its arguments. The United States argues that the European Union fails to provide a citation to support its assertion that its position in the present dispute has been that the withdrawal of a subsidy can be achieved through the removal of the financial contribution or benefit. The United States notes that the European Union points instead to paragraphs in its first written submission arguing for the existence of a financial contribution and benefit for a variety of measures. The United States considers that the existence of such arguments in no way communicates the overarching position that the European Union now seeks to assert. Moreover, the United States asserts that it is not aware of anywhere else in the European Union's submissions where the European Union summarizes its argument in the way in which it now requests the argument to be reflected.

5.11. While the Panel has carefully reviewed the relevant passages of the European Union's first written submission cited by the European Union in support of its request, it appears that they do not contain the specific statement that the European Union proposes to be added to paragraph 6.21 of the Interim Report. Significantly, the European Union itself does not provide a

[38] The European Union refers to the following examples from its first written submission: paras. 169-198, 363-389, 401-404, 417-422, and 434-441.

specific citation to particular paragraphs of its submissions that explicitly set out the idea that "the withdrawal of a subsidy can be achieved through the repayment of the financial contribution or the removal of the benefit". The Panel is therefore not persuaded that the addition proposed by the European Union is warranted to provide a more "comprehensive" description of the position of the European Union in this proceeding with regard to the interpretation of the term "withdraw the subsidy". The Panel thus declines the European Union's request.

Paragraph 6.37

5.12. The European Union requests the Panel to remove footnote 80, as the associated sentence in paragraph 6.37 (i.e. the fourth sentence of paragraph 6.37), in stating that the European Union does not argue that the United States was obligated under Article 7.8 of the SCM Agreement to seek repayment from Boeing of subsidies granted in the past, already fully and accurately reflects the views of the European Union on whether the payment of royalties should occur on a retroactive basis. The United States responds that it has no objection to the European Union's request.

5.13. The Panel has removed the footnote in question as requested by the European Union.

5.2.3 Whether certain measures and claims are outside the Panel's terms of reference or are otherwise outside the scope of this proceeding

Paragraph 7.44

5.14. The European Union requests the Panel to add a footnote defining the terms "tied subsidy" and "untied subsidy" in paragraph 7.44. The European Union suggests that the Panel either reproduce the explanation of "tied subsidy" in paragraph 9.71 as a footnote to paragraph 7.44 or add a cross-reference, in paragraph 7.44, to paragraph 9.71. The United States has no objection to either of the alternative proposals advanced by the European Union.

5.15. The Panel has added a footnote to paragraph 7.44 (footnote 146) to explain the concepts "untied" subsidy and "tied" subsidy as used in this proceeding.

Paragraph 7.127

5.16. The European Union requests that the Panel replace the words "{a}fter some reflection" at the beginning of the second sentence of paragraph 7.127 with the words "{a}fter considering the circumstances described above" to clarify the basis for the Panel's conclusion.

5.17. The United States objects to the European Union's proposal, because it sees no reason to limit the basis for the Panel's conclusion to "circumstances" described in the preceding paragraphs when, according to the United States, much of that discussion consists of a legal analysis of the Appellate Body's findings and citations to past reports.

5.18. Given the circumstances described in paragraph 7.128 of the Interim Report, the Panel considers it most appropriate to retain the current language of the second sentence of paragraph 7.127. The Panel thus declines the European Union's request.

Paragraph 7.198

5.19. The United States suggests that the Panel could consider referring in paragraph 7.198 to the nature of R&D under systems acquisition/military aircraft program elements in Sections 8.2.3.2.4 and 8.2.3.3.3 of the Interim Report. The European Union has no comment on the United States' request.

5.20. The Panel has added additional references in a footnote to the first sentence of paragraph 7.198 which it considers reflect the United States' suggestion.

Paragraph 7.244

5.21. The European Union requests that the Panel delete the first sentence of paragraph 7.244 on the basis that this sentence does not appear to add anything new to the paragraph and the Panel's analysis would be clearer without it.

5.22. The United States objects to the European Union's suggestion. According to the United States, the first sentence of paragraph 7.244 indicates that the Panel does not consider it necessary to conduct the analysis described in paragraph 7.243 (namely, to identify and properly delineate the DOD aeronautics R&D measures that are within the Panel's terms of reference according to the Panel's evaluation of the potential for the R&D to lead to civil applications). The United States considers that the statement in the first sentence of paragraph 7.244 makes explicit the Panel's conclusion on the terms of reference issue that it raised, and as such, adds clarity to the discussion in paragraph 7.244.

5.23. The Panel has removed the first sentence of paragraph 7.244, as requested by the European Union, in order to improve the clarity of this paragraph.

Paragraphs 7.251, 7.283, 7.284 (and 8.505)

5.24. The United States requests the Panel to delete references in paragraphs 7.251, 7.283, 7.284, 7.289 (and 8.505) suggesting that Boeing has responsibility for managing the entire FAA CLEEN Program, rather than simply its activities under the Boeing CLEEN Agreement. The United States considers that the suggestion that Boeing has responsibility for managing the FAA CLEEN Program is incorrect. The United States asserts that Boeing does not manage the FAA CLEEN Program. Rather, as explained by the United States in its submissions, the FAA CLEEN Program is managed by the FAA on the basis of Other Transaction Agreements entered into with industry partners. The United States explains that the statement in the Boeing CLEEN Agreement referring to integrated programme management pertains to Boeing's management of its own performance under the Boeing CLEEN Agreement.

5.25. The European Union objects to the United States' request and asks that the Panel leave undisturbed the existing language related to Boeing's integrated management of the FAA CLEEN Program in paragraphs 7.251, 7.283, 7.284 (and 8.505). The European Union argues that the text of the Boeing CLEEN Agreement plainly provides that the Boeing team will manage the overall FAA CLEEN Program to ensure completion of all required elements in the program statement of work, and repeatedly references "Boeing's Integrated Program Management" as a work element in addition to, and distinct from, identified R&D activities. The European Union notes that these are the portions of the Boeing CLEEN Agreement upon which the Panel relies when it states, in paragraph 7.251, that Boeing is responsible for integrated management of the FAA CLEEN Program as well as two categories of R&D activities. The European Union considers that the Panel's characterization of Boeing's integrated management of the FAA CLEEN Program, including in the paragraphs identified by the United States in its request, is no different from the characterization in the Boeing CLEEN Agreement, and is simply a restatement of the language used in the Boeing CLEEN Agreement itself. Finally, the European Union argues that the United States' argument that the statement referencing integrated program management in the Boeing CLEEN Agreement pertains to Boeing's management of its own performance under the Boeing CLEEN Agreement finds no support in the text of the Agreement, which unambiguously refers to Boeing's management of the "overall CLEEN program", nor does the United States cite to any portion of the Boeing CLEEN Agreement or to any other evidence before the Panel, to support its conclusion.

5.26. In addressing the United States' request, the Panel has again reviewed the evidence before it regarding the FAA CLEEN Program and the Boeing CLEEN Agreement. Section C.3 of the Boeing CLEEN Agreement sets forth the work to be performed by Boeing. The "Overview" subsection to section C.3 explains that Boeing will increase the technology readiness level of three technologies as part of the FAA CLEEN Program. These are: (a) CMC/Oxide-Oxide Nozzle Technology; (b) Adaptive Trailing Edges (excluding Flaplets); and (c) Alternative Fuels – Aromatics and Seal Swell. The Overview also refers to "overall Integrated Program Management and Flight demonstration(s)".

5.27. The next subsection to section C.3 of the Boeing CLEEN Agreement is entitled "Integrated Program Management and Technology Demonstrations". A further subheading to this subsection, entitled "Integrated Program Management", states that the "Boeing team will manage the overall CLEEN program to ensure completion of all required elements in the program SOW". A second subheading to this subsection is entitled "Technology Demonstration Tests". This subheading describes flight test demonstrations that Boeing will conduct "as part of the technology maturation program" in 2012 and 2013, respectively. In each case, "Boeing will conduct integrated program management, design, and safety reviews to ensure the technologies integrate onto the selected demonstration airplane, and to ensure compliance with required procedures and safety of flight."

5.28. There are three further subsections to section C.3 of the Boeing CLEEN Agreement. These deal with: (a) CMC/Oxide-Oxide Acoustic Nozzle Technology; (b) Adaptable Trailing Edge Technology; and (c) Alternative Fuels – Aromatics, Seals Technology. For each of these technology areas, there are separate subheadings that discuss "project management", "technology maturation", "systems engineering and integration", "technology demonstration tests", and "technology assessments". The Boeing CLEEN Agreement plainly states that "Boeing will manage the *overall CLEEN program* to ensure completion of all required elements in the *program* SOW".[39] This statement is made in a distinct subsection of section C.3 that refers to "integrated program management". Moreover, the concept of *integrated* program management appears to be distinct from the "program management" envisaged for each of the three technology areas and discussed elsewhere in section C.3.

5.29. The United States considers that the references to integrated program management pertain to Boeing's management of its own performance under the Boeing CLEEN Agreement. We do not discount the possibility that the "Integrated Program Management and Technology Demonstrations" work that is described in section C.3 of the Boeing CLEEN Agreement, understood in its proper context, in fact concerns the management of those aspects of the FAA CLEEN Program for which Boeing is the main contractor, and does not extend to management of the activities of the other FAA CLEEN main contractors under the FAA CLEEN Program (i.e. General Electric, Honeywell, Pratt & Whitney, and Rolls-Royce North America). However, the United States did not attempt such an explanation in its submissions and does not fully explain the basis for this position in its comments on precise aspects of the Interim Report. Indeed, the European Union, in its first written submission, asserted that "Boeing (the only aircraft producer in the CLEEN consortium) is responsible for integrated management of the entire CLEEN Program, allowing Boeing to benefit from FAA funding of other participants, all of whom are Boeing suppliers."[40] The European Union cited to section C.3 of the Boeing CLEEN Agreement in support of this assertion. The United States did not refute this assertion in its submissions.[41]

5.30. We consider that the Panel's interpretation of the Boeing CLEEN Agreement is reasonable on its face, and is not contradicted by other evidence before it, or by the United States in its submissions, despite the fact that the European Union, in its first written submission, made the very assertion to which the United States now objects. In light of these factors, we have decided to leave undisturbed the existing language related to Boeing's integrated management of the FAA CLEEN Program in paragraphs 7.251, 7.283, 7.284, 7.289, (and 8.505).

Paragraph 7.409

5.31. The United States requests the Panel to modify the first sentence of paragraph 7.409 referring to the European Union's argument that the Panel describes in paragraph 7.409 as relating to a "change in WTO law resulting from an intervening Appellate Body report" to clarify that the European Union's argument concerns a purported "clarification of relevant WTO law" and thus a "subsequent interpretation" of the WTO agreements, as opposed to a change in WTO law itself. The United States notes that the DSU provides that the findings and recommendations of panels and the Appellate Body cannot add to or diminish the rights and obligations provided in the covered agreements. Moreover, the United States does not understand the European Union to

[39] Emphasis added.
[40] European Union's first written submission, para. 202. (fn omitted)
[41] While the United States provided information concerning the FAA CLEEN Program and the Boeing CLEEN Agreement in response to the Panel's Article 13 request, it did not specifically address the issue of whether Boeing had any responsibility for the management of the FAA CLEEN Program overall.

argue, in paragraph 7.390 (d) of the Interim Report, that WTO law has actually changed, but rather that the interpretation of WTO law has changed.

5.32. The European Union objects to the United States' request and requests that the Panel retain the current wording of paragraph 7.409. While the European Union does not disagree with the assertion that a report of the Appellate Body does not add to or diminish the rights and obligations provided in the covered agreements, it does not share the United States' concern that the current language in paragraph 7.409 would imply otherwise. The European Union considers that the Panel uses the phrase "a change in WTO law as a result of an intervening Appellate Body report" as a convenient way of referring to a scenario in which an Appellate Body report identifies, from the terms of a provision in the covered agreements, a meaning that is different from the one that was previously understood. In fact, the European Union regards the Panel's current formulation as the most appropriate one to describe the situation referenced, so as to achieve precision and clarity, and considers that the United States' proposed alternative formulation falls short in this regard. More specifically, the European Union argues that the United States' suggested formulation of "subsequent interpretation" conveys only a temporal relationship between two interpretations, while in the current circumstances, the relevant issue is that the subsequent interpretation is different from the earlier interpretation, not that it is "subsequent".

5.33. The Panel has modified the first sentence of paragraph 7.409 to more closely reflect the terms used by the European Union in making the argument in question in paragraphs 68-74 of its second written submission, which refers to a "clarification of relevant WTO law to be applied by the compliance panel", rather than a "change in WTO law resulting from an intervening Appellate Body report".

5.2.4 Whether the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement

Subsection 8.1.2

5.34. The European Union requests the Panel, in its summary of the European Union's arguments, to set forth the European Union's position on patent ownership in situations where inventions are jointly made by NASA or DOD employees on the one hand, and Boeing employees on the other, in the same manner as the Panel summarized the United States' position on this issue in paragraph 8.20. The European Union considers that in its submissions it explains why, even in a situation where inventions arrived at by NASA or DOD employees jointly with a private contractor's employees, the private contractor may ultimately be provided with something more than an undivided share in rights under the patent. The European Union refers in this regard to its comments on the United States' response to Panel question No. 85, at paragraphs 217-221 and the European Union's opening statement, at paragraph 31. The European Union additionally requests that the Panel consider whether the European Union's position on patent ownership in the joint inventorship situation requires any modifications to paragraph 8.34(c) of the Interim Report.

5.35. The United States objects to the European Union's requests. The United States considers that granting the European Union's request to modify the summary of the European Union's arguments would deprive the United States of an opportunity to comment on the accuracy of the summary, or suggest relevant additions to the summary of the U.S. argument. Moreover, the United States considers that at this stage, the European Union (rather than the Panel) bears the responsibility for suggesting how the Panel should modify summaries of the European Union's own arguments. The United States also objects to the European Union's request to consider whether the referenced arguments of the European Union require a modification to the Panel's finding in paragraph 8.34(c) of the Interim Report. The United States notes that paragraph 8.34(c) is part of subsection 8.1.3.1 which covers "The allocation of intellectual property rights and data rights under NASA procurement contracts and under DOD assistance instruments and procurement contracts". The United States argues that the arguments referenced by the European Union, however, deal with the possibility that the United States might licence its joint rights to the contractor subsequent to the contract. Thus, according to the United States, such assertions have nothing to do with the allocation of rights under R&D contracts. Moreover, the United States adds that the European Union has not pointed to any procurement contract or assistance instrument that licences the government ownership of joint inventions to the contractor.

5.36. The Panel considers that it has, in the summary of the European Union's arguments, set forth the European Union's position on patent ownership in situations where inventions are jointly made by NASA or DOD employees on the one hand, and Boeing employees on the other, in the same manner as the Panel has set forth in paragraph 8.20 the United States' position on this issue in its summary of the United States' arguments. Specifically, in paragraph 8.12 of the Interim Report, the Panel recounts the European Union's argument, from paragraph 309 of its second written submission, that under the NASA procurement contracts and agreements and the DOD assistance instruments, inventions made jointly between NASA and Boeing or DOD and Boeing are owned solely by Boeing as the commissioned party. The European Union requests that the Panel reflect paragraphs from the European Union's submissions explaining why, even where inventions are jointly made by NASA or DOD employees, and by Boeing employees, during the course of work under an R&D contract, the private contractor may ultimately be provided with something more than an undivided share in the rights under the patent.

5.37. The Panel considers that the arguments made by the European Union in the paragraphs of its submissions to which it refers address, not the issue of how patent ownership is allocated in cases of such joint inventorship by NASA/DOD and Boeing employees under R&D contracts as a matter of U.S. law, but a different issue; namely that, notwithstanding the formal ownership rights that the U.S. Government receives in such situations, the situation is similar to cases of sole inventorship by Boeing employees as a practical matter.[42]

5.38. Paragraph 8.34 of the Interim Report sets forth the Panel's conclusions regarding the allocation of patent rights, by operation of U.S. law, under NASA procurement contracts and cooperative agreements and under DOD assistance instruments and procurement contracts, including in subparagraph (c), in the situation where a NASA or DOD employee and a Boeing employee jointly make an invention in the course of work under a NASA procurement contract or cooperative agreement, or under a DOD assistance instrument or procurement contract, as the case may be. The Panel has reflected the arguments of the parties on this particular issue in paragraphs 8.12 and 8.20 of the Interim Report, and has reached its own conclusion in paragraph 8.34(c), which it sees no need to modify.

5.39. In light of the foregoing, the Panel declines to make the modification requested by the European Union.

Footnote 943 (now footnote 959) to paragraph 8.20

5.40. The European Union requests the Panel to remove the reference to *United States Code of Federal Regulations*, chapter 37, section 501.6, (Exhibit USA-310) in footnote 943 to paragraph 8.20 (now footnote 959). The European Union notes that the cited U.S. federal regulation relates to inventions made solely by government employees, and not to inventions made jointly by government employees and contractors like Boeing. The European Union additionally requests the Panel to clarify that the proposition that, under U.S. law, the U.S. Government takes title and interest in inventions jointly made by DOD employees and by private contractors reflects an argument of the United States, and is not a finding by the Panel.

[42] The European Union argues in this regard that, even though NASA/DOD, by operation of U.S. law acquires joint ownership over an invention jointly invented by a NASA/DOD employee jointly with Boeing employees as a result of work under a NASA or DOD contract or agreement, the European Union considers that contractors like Boeing nevertheless expect that NASA and DOD will not attempt to exploit additional rights they obtain from joint ownership, above and beyond those they would receive through the government use licence that they would obtain in the different situation in which Boeing as contractor owns the patent developed through government-funded R&D. (European Union's comments on the United States' response to Panel question No. 85, para. 217). The European Union similarly argues in its oral statement, that joint inventorship by U.S. Government and Boeing employees "effectively" leads to the same situation as inventorship by a Boeing employee alone, as the U.S. Government agrees to waive any additional rights acquired through joint inventorship to Boeing, if it finds that it would expedite the development of the invention. (European Union's opening statement at the meeting with the Panel, para. 31). The European Union refers in this regard to Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220), section 202(e). The United States responds in its submissions that the European Union profoundly misstates the U.S. law. (United States' response to Panel question No. 85, para. 139 and fn 205).

5.41. The United States disputes the European Union's understanding of *United States Code of Federal Regulations*, chapter 37, section 501.6 as being limited to situations in which the government employee is the sole inventor of an invention. The United States refers to its submissions, wherein it explains that in situations where inventions are jointly made by NASA or DOD employees on the one hand, and by Boeing employees on the other, the respective laws and regulations governing invention by a government employee and by a contractor employee operate in parallel. Thus, according to the United States, the citation to *United States Code of Federal Regulations*, chapter 37, section 501.6 is correct, as that regulation gives the U.S. Government ownership of a patent issued for an invention made by a government employee as part of the employee's work, even where another person is a co-inventor. The United States suggests, for the sake of completeness and to address the European Union's concern, that the Panel could consider citing Inventions Patentable, *United States Code*, chapter 35 section 101, (Exhibit USA-466) and the Bayh-Dole Act and various related measures, as support for its findings regarding the situation where inventions are jointly made by NASA or DOD employees on the one hand, and Boeing employees on the other.

5.42. The Panel has revised footnote 943 (now footnote 959) to paragraph 8.20 to clarify that the assertions that, under U.S. law, NASA and DOD obtain ownership over inventions made solely by their employees during work under a procurement contract or assistance instrument, and joint ownership over inventions made jointly with Boeing employees, is part of a U.S. argument.

Footnote 964 (now footnote 980) to paragraph 8.33

5.43. The United States requests the Panel to add a sentence to footnote 964 (now footnote 980) to clarify, as the original panel had at footnote 2913 of its report, that the Bayh-Dole Act supersedes the National Aeronautics and Space Act of 1958, as amended (Space Act) with respect to title to inventions made pursuant to NASA procurement contracts with non-profit organizations and small businesses, which are governed by separate regulations and contract clauses. The European Union does not make any comment regarding the United States' request.

5.44. The Panel has made the modification to footnote 964 (now footnote 980) requested by the United States.

Paragraph 8.120

5.45. The European Union requests the Panel to add a reference to the block quote at the end of the paragraph, which it suggests is NASA, *Research Opportunities in Aeronautics – 2008 (ROA-2008)*, NASA Research Announcement NNH08ZEA001N, (7 March 2008), as amended (Exhibit USA-61), Appendix A, pp. A1 and A2. The United States has no objection to the proposed citation for this block quotation.

5.46. The Panel has amended paragraph 8.120 to add a reference to the block quotation at the end of the paragraph on the basis requested by the European Union.

Paragraph 8.189

5.47. The United States requests the Panel to modify the second-to-last sentence in paragraph 8.189 to remove the suggestion that Boeing receives intellectual property rights and data rights from NASA under Space Act Agreements, in the sense that Space Act Agreements involve the *transfer* of patent rights from NASA to the other party. The United States notes that the Panel does not undertake an analysis of whether Space Act Agreements involve a transfer of intellectual property rights from NASA to the other party. It therefore suggests that the relevant sentence of paragraph 8.189 be modified to state that Boeing may nevertheless advance its R&D activities and commercial objectives by developing patentable inventions or data subject to copyright, in addition to contributing to NASA's particular mission or programme objectives.

5.48. The European Union objects to the United States' request and requests that the Panel retain the current wording of paragraph 8.189. The European Union argues that the statement in paragraph 8.189 that Boeing receives valuable intellectual property rights or data rights is not a finding that those rights are transferred by NASA, within the meaning of Article 1.1(a)(1) of the SCM Agreement. The European Union notes that in paragraph 8.158 of the Interim Report, the

Panel found it unnecessary to address the European Union's alternative argument that what it refers to as the "transfers" to Boeing of patent and other intellectual property rights could separately be considered a financial contribution. The European Union also notes that in the DOD-related analysis, at paragraphs 8.388 and 8.389, the Panel considered whether DOD "provides" or "transfers" patents to Boeing pursuant to R&D contracts. The European Union argues that, by contrast, the Panel's reference in paragraph 8.189 to Boeing's receipt of valuable intellectual property rights is not a finding that those rights are *transferred* to Boeing by NASA, within the meaning of Article 1.1(a)(1). According to the European Union, it is merely an acknowledgement that Boeing receives ownership rights over intellectual property created in the course of working under the Space Act Agreements. The European Union asserts, referring to Articles 27, 29, 32, and 62 of the TRIPS Agreement, that patent rights, in particular, are rights that are granted and revoked under a legal regime put in place by governments.

5.49. The Panel considers that the European Union's interpretation of the second-to-last sentence of paragraph 8.189 is correct. In other words, in stating that Boeing receives valuable intellectual property rights or data rights, the Panel does not mean to suggest that those rights are "transferred" by NASA in the sense of Article 1.1(a)(1). The Panel considers this is clear from the context of paragraphs 8.158, and 8.388-8.389, as well as paragraph 8.192.

5.50. However, the Panel has modified the second-to-last sentence of paragraph 8.189 to remove the possibility that the discussion therein could be misinterpreted as suggesting that Boeing receives intellectual property rights and data rights from NASA under Space Act Agreements, in the sense that Space Act Agreements involve the *transfer* of patent rights from NASA to the other party.

Footnote 1209 (now footnote 1225) to paragraph 8.189

5.51. The United States requests the Panel to modify the first sentence of footnote 1209 (now footnote 1225) to clarify that NASA has determined that Space Act Agreements are not procurement contracts, agreements, understandings, or other arrangements, within the meaning of section 305(j) of the Space Act. As currently drafted, the United States considers that the first sentence of footnote 1209 (now footnote 1225) could be read to suggest, erroneously, that a Space Act Agreement is not a contract. The European Union does not make any comment on the United States request.

5.52. The Panel has made the modification requested by the United States.

Paragraph 8.228

5.53. The United States requests the Panel to modify the last sentence of paragraph 8.228 to clarify that this statement pertains also to other instruments, such as Executive Order 12591 and the NASA waiver regulations, which are not within the scope of the Bayh-Dole Act, its associated legislative instruments and implementing regulations. The European Union does not make any comment on the United States request.

5.54. The Panel has made the modification requested by the United States.

Paragraph 8.504

5.55. The United States requests the Panel to delete the reference to NASA in the first sentence of paragraph 8.504. The United States disputes that NASA was involved in the inauguration of the FAA CLEEN Program and argues that the statement that the FAA and NASA inaugurated the FAA CLEEN Program, as currently reflected in paragraph 8.504, is unsupported by the evidence. The United States argues that it has explained in its submissions, and the Panel has recognized in paragraph 7.249 of the Interim Report, that the FAA, not NASA, established the FAA CLEEN Program to accelerate aircraft technology development to reduce fuel burn, emissions and noise of civil subsonic jet aircraft, in partnership with industry through Other Transaction Agreements.

5.56. The European Union objects to the United States' request and suggests an alternative formulation of the first sentence of paragraph 8.504, along with a conforming modification to paragraph 7.249. More specifically, the European Union refers to a statement at paragraph 7.280

of the Interim Report, on which the United States has not commented, that the FAA CLEEN Program was created in conjunction with the ERA Project of NASA's Integrated Systems Research Program. The European Union refers to confirmation for this statement in statements made by NASA and its representatives, noting in particular the statement of NASA's Associated Administrator to the U.S. Congress that, "{t}o facilitate the transition of advanced ideas and technologies into the aircraft fleet, NASA is partnering with the Federal Aviation Administration's (FAA) Continuous Low Emissions, Energy and Noise (CLEEN) Program to guide efforts to mature technologies that have already shown promise to the point where they can be adopted by the current and future aircraft fleet".[43] The European Union argues that, based on the foregoing, the Panel should leave unchanged its existing characterization of the inauguration of the FAA CLEEN Program by the FAA and NASA in paragraph 8.504. However, if the Panel disagrees, the European Union suggests that it could alternatively change the statement that the FAA and NASA inaugurated the FAA CLEEN Program to a statement that the FAA, in conjunction with NASA, inaugurated the FAA CLEEN Program, which it considers to be more closely in line with the Panel's discussion at paragraph 7.280. The European Union further suggests, in order to remove the existing inconsistency identified by the United States between paragraph 8.504 and paragraph 7.249, that the Panel modify paragraph 7.249 to refer to NASA's role in launching the FAA CLEEN Program.

5.57. The Panel does not consider that there is sufficient support on the record for the modification suggested by the European Union that the FAA *in conjunction with* NASA, inaugurated the FAA CLEEN Program. The Panel notes that the second sentence of paragraph 7.280 refers to a relationship between the FAA CLEEN Program and NASA's ERA Project, but not necessarily a direct involvement by NASA in inaugurating the FAA CLEEN Program. The Panel has decided to modify paragraph 8.504 by removing the reference to NASA in the first sentence and by adding a cross-reference to paragraph 7.280 in footnote 1664 (which was footnote 1649 in the Interim Report) to paragraph 8.504.

Paragraph 8.511

5.58. The United States requests the Panel to correct the second sentence of paragraph 8.511 to reflect the United States' argument, which is that the FAA (as opposed to NASA as currently appears in the second sentence of paragraph 8.511) does not transfer any patent to Boeing. The European Union does not make any comment on the United States' request.

5.59. The Panel has made the correction requested by the United States.

Paragraph 8.514

5.60. The United States requests the Panel to delete the second sentence of paragraph 8.514, in which the Panel states that the United States does not dispute that Boeing receives rights to patents and other data rights. The United States argues that this sentence is incorrect, because the United States explicitly disputed the European Union's assertion that the FAA transferred patent and intellectual property rights to Boeing under the FAA CLEEN Program. The European Union does not make any comment on the United States' request.

5.61. The Panel has made the correction requested by the United States.

Paragraph 8.552

5.62. The European Union requests the Panel to correct what it considers appear to be typographical errors in the third and fourth sentences of paragraph 8.552; namely, references to the Boeing CLEEN Agreement as opposed to the FAA CLEEN Program.

5.63. The United States objects to the European Union's request. The United States does not consider that the references to the Boeing CLEEN Agreement in paragraph 8.552 are typographical errors. The United States argues that the Panel frames the question in paragraph 8.546 as being

[43] Interim Report, para. 7.280 (quoting the statement of J. Shin, NASA Associate Administrator for Aeronautics Research Mission Directorate, Hearing before the U.S. House of Representatives Committee on Science, Subcommittee on Space and Aeronautics, 1 May 2008, (Exhibit EU-21)).

"whether the subsidies provided to Boeing under the Boeing CLEEN Agreement are specific within the meaning of Article 2.1(a) of the SCM Agreement". The United States considers that, as a substantive matter, the specificity analysis of the FAA CLEEN Program should be based on the programme itself, rather than the contractual instrument through which the FAA made payments to Boeing. However, the United States does not consider the Panel's framing of the question or its references to the Boeing CLEEN Agreement at paragraph 8.552 to be inconsistent with this view.

5.64. The Panel declines the European Union's request because the references in paragraph 8.552 of the Interim Report are not typographical errors. Rather, they reflect that the subsidies at issue which are the subject of the specificity analysis are subsidies resulting from financial contributions provided under the Boeing CLEEN Agreement. Accordingly, the question before us in this Section of the Report is whether "the subsidies provided to Boeing under the Boeing CLEEN Agreement are specific within the meaning of Article 2.1(a) of the SCM Agreement".[44] As explained in Section 8.2.8.6.3.3 of this Report, the Panel agrees that the analysis of whether a subsidy provided to an individual recipient is specific must take into account the broader programme in which context the subsidy is provided. However, that does not mean that we should treat that programme itself as the subsidy that is the object of the specificity analysis. In sum, we consider that the references to the Boeing CLEEN Agreement correctly reflect the measure that we find to be a subsidy and in no way prevent us from adequately taking into account, for purposes of the specificity analysis, the context within this measure is applied pursuant to the FAA CLEEN Program.

Paragraphs 8.614, 8.628 (now 8.627), 8.633 (now 8.632), and 8.634 (now 8.633)

5.65. The European Union requests that the Panel change the references to "IRB" in singular form in a number of places in paragraphs 8.614, 8.628 (now 8.627), 8.633 (now 8.632), and 8.634 (now 8.633) to reflect, consistent with the original panel report and Exhibit EU-419, that multiple IRBs were issued in any given year.

5.66. The United States agrees that Wichita typically issued more than one IRB per year. However, it considers the Panel's use of the singular to be typically consistent with this understanding and thus sees no need to pluralize "IRB" in the instances identified by the European Union in paragraphs 8.614, 8.628 (now 8.627), and the second through fourth sentences of paragraph 8.633 (now 8.632). In the first and last sentences of paragraph 8.633 (now 8.632), the United States suggests alternative formulations to address the concern raised by the European Union. The United States has no objection to the European Union's proposal regarding paragraph 8.634 (now 8.633).

5.67. The Panel has modified paragraphs 8.614, 8.628 (now 8.627), 8.633 (now 8.632), and 8.634 (now 8.633) of the Interim Report as requested by the European Union, consistent with the terminology used in the original panel report.

Paragraph 8.787 (now paragraph 8.786)

5.68. The United States requests the Panel to modify its summary of the United States' argument in the last sentence of paragraph 8.787 (now paragraph 8.786), to reflect the terms on which the argument was made in the United States' submission. The European Union does not make any comment on the United States request.

5.69. The Panel has made the modification requested by the United States.

Paragraph 8.947 (now paragraph 8.950)

5.70. The United States requests the Panel to modify the fifth sentence of paragraph 8.947 (now paragraph 8.950), for the sake of clarity and to mirror the text of Article 2.1(c) and the arguments contained in the United States' submissions. The European Union does not make any comment on the United States' request.

5.71. The Panel has made the modification requested by the United States.

[44] See para. 8.546 below.

Footnote 2603 to paragraph 8.1050 (now footnote 2614 to paragraph 8.1054)

5.72. The European Union requests the Panel to modify the description of its argument in its first written submission, at footnote 2603 to paragraph 8.1050 (now footnote 2614 to paragraph 8.1054), to clarify that its discussion of the three sales and use tax exemptions in its first written submission relates to the post-2011 period.

5.73. The United States considers such modification unnecessary because it is clear that the statement regarding the "three sales and use tax exemptions" refers to the post-2011 period.

5.74. The Panel has made the modification of footnote 2603 to paragraph 8.1050 (now footnote 2614 to paragraph 8.1054) as requested by the European Union, for the sake of greater clarity.

5.2.5 Whether the United States has failed to take appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement

Footnote 2646 (now footnote 2657) to paragraph 9.4(a)(iii)

5.75. The European Union requests the Panel to modify footnote 2646 (now footnote 2657) to clarify that the European Union's arguments and evidence regarding impedance of exports of the A350XWB (and threat thereof) in third-country markets were not limited to Boeing delivery market shares significantly exceeding 50%. The European Union asserts that its arguments and evidence also covered impedance (and threat thereof) based on sales lost in the relevant country markets, and more generally based on the causal mechanisms that the European Union asserted and that it argued indicated higher counterfactual sales volumes and market shares for Airbus, absent the U.S. subsidies. The European Union also requests the Panel to add the word "significantly" before "50%" in footnote 2646 (now footnote 2657) to reflect that the European Union's market share-based argument regarding impedance applied where Boeing's market share *significantly* exceeds 50%.

5.76. The United States does not make any comment with respect to the first aspect of the European Union's request. As to the requested modification concerning the insertion of the word "significantly" before 50%, the United States requests that if the Panel were to make the modification, it do so in a manner that clarifies that the European Union asserts that Boeing is projected to make significantly more than 50% of deliveries of the relevant aircraft, so as to avoid giving the impression that a characterization of the market share evidence by the European Union is a fact.

5.77. The Panel has modified footnote 2646 (now footnote 2657) in the manner requested by the European Union, and consistent with the United States' qualification.

Paragraph 9.11

5.78. The European Union requests the Panel to modify the second sentence of paragraph 9.11 to more accurately reflect the European Union's arguments that the pre-2007 *and certain post-2006* aeronautics R&D subsides affect Boeing's technology development, while the *remaining* post-2006 subsides affect Boeing's LCA pricing behaviour.

5.79. The United States does not consider the European Union's requested revision to be inaccurate. However, it notes that the Panel was laying out the general contours of the European Union's causation allegations, which are based on the alleged effects of subsidies on a horizontal basis rather than on the basis of a particular Boeing aircraft alleged to be subsidized. In this context, 2006/2007 serves as the general line of division between the subsidies alleged to cause technology effects and the subsidies alleged to cause price effects. The United States considers that this latter feature could be lost if the European Union's proposed phrasing of "certain post-2006" subsidies were adopted. The United States therefore proposes a modification to the second sentence of paragraph 9.11 which notes that "generally" the post-2006 subsides affect Boeing's pricing behaviour, with a footnote after the word "generally" to explain that the European Union argues that a relatively small number of post-2006 aeronautics R&D subsidies, like the pre-2007 aeronautics R&D subsidies, operate through a technology causal mechanism

rather than a price causal mechanism, with a citation to paragraphs 9.198 and 9.199 of the Interim Report.

5.80. The Panel has decided that, given that paragraph 9.11 is part of the "Introduction" and provides only a general explanation of the European Union's arguments, it is preferable at this point in the discussion to refer to the basic distinction that the European Union draws between the effects of the pre-2007 aeronautics R&D subsidies, on the one hand, and those of the post-2006 subsidies (including the majority of the post-2006 aeronautics R&D subsidies), on the other.[45] However, it also considers that it is appropriate to add a footnote providing greater detail regarding the European Union's arguments concerning the causal pathway through which certain post-2006 aeronautics R&D subsidies are alleged to operate. The Panel has modified paragraph 9.11 accordingly.

Footnote 2679 (now footnote 2691) in Table 5 of paragraph 9.28

5.81. The United States requests the Panel to modify footnote 2679 (now footnote 2691) to indicate that it is the European Union's view that the 767, A340, and Original A350 are no longer in any LCA product market. The European Union does not make any comment on the United States request.

5.82. The Panel has made the modification requested by the United States.

Footnote 2710 (now footnote 2724) to paragraph 9.50

5.83. The United States requests the Panel to modify footnote 2710 (now footnote 2724) to clarify that the various top tier Boeing customers *reportedly* obtain the benefits of Boeing's "most-favoured customer" clause, to avoid giving the impression that the Panel is publicly revealing HSBI information as to the contractual terms extended to any specific Boeing customers. The European Union does not make any comment on the United States request.

5.84. The Panel has made the modification requested by the United States.

Paragraph 9.51

5.85. The European Union requests the Panel to delete the last two sentences of paragraph 9.51 because it considers that it is not factually correct that the Panel "does not have before it direct evidence of the airframe prices actually agreed between Boeing and the airline and leasing company customers in any sales campaigns". The European Union refers to the fact that the United States had provided pricing for a number of sales that Boeing had secured, which information the European Union had summarized in an exhibit.[46] The European Union also points to the fact that it had provided pricing summaries, in the form of Airbus' business control sheets, associated with final offers Airbus made to potential customers. The European Union notes that the Panel itself discusses pricing information for certain single-aisle sales campaigns, in non-confidential form in paragraphs 9.385-9.388 and 9.398-9.407 of the Interim Report (now paragraphs 9.382-9.385 and 9.395-9.404), and in confidential form in Appendix 2. Finally, the European Union notes that at paragraph 9.392 (now paragraph 9.389), in Table 13, the Panel includes (in the HSBI version of the Interim Report), average actual 2012 prices of certain Boeing aircraft, derived from information provided by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU.

5.86. The United States does not object to clarification or deletion of the penultimate sentence of paragraph 9.51, which it considers could be confusing in light of the Panel's surrounding discussion. It also does not view the deletion of the last sentence identified by the European Union

[45] The Panel notes moreover, that although the European Union argues that certain post-2006 aeronautics R&D subsidies operate through a technology causal mechanism rather than a price causal mechanism, the European Union also makes an alternative argument that, should the Panel disagree that certain post-2006 aeronautics R&D subsidies operate at present through a technology causal mechanism, they would operate on a different basis through a price causal pathway. (European Union's response to Panel question No. 43, para. 279 and fn 352). Therefore, the overall description of the European Union's arguments in para. 9.11 is not inaccurate.

[46] Comparison of Net Aircraft Price and Appraised Value, (Exhibit EU-1183) (HSBI).

as "particularly problematic" as the Report will read coherently without it. However, it considers that the last sentence of paragraph 9.51 is clearly and unambiguously supported by the evidence cited by the Panel.

5.87. The Panel has modified paragraph 9.51 to delete the second-to-last sentence of that paragraph, and replaced it with the text that previously appeared in footnote 2711.

Paragraph 9.64

5.88. The European Union requests the Panel to revise the first sentence of paragraph 9.64 to accurately reflect the European Union's argument, which is that all of the post-2006 subsidies, *except certain aeronautics R&D subsidies*, enable Boeing to lower the prices of its LCA in competitive sales campaigns. The United States has no objection to the European Union's request.

5.89. The Panel has modified the first sentence of paragraph 9.64 as requested by the European Union. The Panel has added additional references to the European Union's arguments that certain post-2006 aeronautics R&D subsidies, identified in Exhibit EU-1265, presently operate through a technology causal mechanism, while the remainder of the post-2006 aeronautics R&D subsidies operate at present through a price causal mechanism.[47] The Panel has also included cross-references to two conditional alternative arguments made by the European Union in footnote 352 to its response to Panel question No. 43, that should the Panel disagree that certain post-2006 aeronautics R&D subsidies operate, at present, through a technology causal mechanism, alternatively, they operate through a price causal mechanism under so-called "Category 2", and should the Panel disagree with that argument, alternatively, they operate "on a different basis", through a "price effects" causal pathway, as described for so-called "Category 3" subsidies.

Footnote 2834 to paragraph 9.128 (now footnote 2849 to paragraph 9.127)

5.90. The European Union requests the Panel to delete footnote 2834 to paragraph 9.128 (now footnote 2849 to paragraph 9.127). In footnote 2834 (now footnote 2849), the Panel contrasts the findings in the original proceeding regarding the nature and effects of the aeronautics R&D subsidies with those of the original panel in *EC and certain member States – Large Civil Aircraft* regarding the nature and effects of certain subsidies at issue in that dispute on Airbus' ability to launch and bring to market various Airbus LCA. The European Union appears to disagree with the Panel's description of the findings of the original panel in *EC and certain member States – Large Civil Aircraft* and, in any case, argues that the Panel's description is incomplete and unnecessary to the resolution of issues in this proceeding, and therefore should be deleted.

5.91. The United States objects to the European Union's request. The United States argues that footnote 2834 (now footnote 2849) contrasts the findings in the original dispute with those in *EC and certain member States – Large Civil Aircraft* in order to illuminate the discussion in paragraph 9.128 (now paragraph 9.127), which includes the statement that the aeronautics R&D subsidies were not found to have brought into existence any technology or product that would not otherwise exist. The United States considers that the comparison with *EC and certain member States – Large Civil Aircraft* is apt, drawing the distinction between subsidies that accelerate a product's entry into a market and subsidies that enable the very existence of a product. The United States considers that the Panel's characterization of *EC and certain member States – Large Civil Aircraft* is correct, referring to the statements of the panel in the paragraphs 7.1949 and 7.1993 of the panel report, and of the Appellate Body at paragraphs 1264, 1299 and 1300 of the Appellate Body Report. According to the United States, these statements leave no doubt that footnote 2834 (now footnote 2849) accurately describes the relevant findings in *EC and certain member States – Large Civil Aircraft* and there is no "nuance" that the Panel fails to capture and no unsettled "matter" from another dispute. Finally, the United States adds that it considers it entirely normal and appropriate for panels to illustrate a point by comparing or contrasting the dispute before it with a prior dispute.

5.92. The Panel does not consider that the discussion of certain of the causation findings made by the panel and accepted by the Appellate Body in *EC and certain member States – Large Civil*

[47] See European Union's response to Panel question No. 43, paras. 279 and 280.

Aircraft, can be misconstrued as attempting to comprehensively capture all aspects of the adverse effects findings in that dispute. However, the Panel has modified footnote 2834 (now footnote 2849) in order to clarify that this was not the Panel's intention. Rather, the Panel's intention is simply to highlight an important distinction between the "technology effects" findings of the panel in the original proceeding in this dispute, and the findings of the panel in *EC and certain member States – Large Civil Aircraft* regarding the nature, operation and effects of certain of the subsidies at issue in that dispute, because the difference, as explained in paragraph 9.129 (now paragraph 9.128), is highly relevant to the nature of the counterfactual question that the Panel should pose in determining whether the effects of the pre-2007 aeronautics R&D subsidies have been demonstrated to continue in the post-implementation period. The Panel therefore declines the European Union's request.

Paragraph 9.157 (now paragraph 9.156)

5.93. The United States requests the Panel to modify the second sentence of paragraph 9.157 (now paragraph 9.156) to better express the point that the Panel appears to be making, which is that, as the European Union itself observes, the European Union does not argue that, absent the subsidies, the technology in question would never have existed.

5.94. The European Union agrees with the United States that the second sentence of paragraph 9.157 (now paragraph 9.156) is somewhat difficult to follow and ambiguous. However, it also considers that the United States' proposed alternative formulation is equally difficult to follow. The European Union suggests alternative wording to avoid combining the phrase "as the European Union itself observes" with the phrase "the European Union does not argue that".

5.95. The Panel has made the requested modification in the terms suggested by the European Union.

Paragraph 9.181 (now paragraphs 9.180 and 9.181)

5.96. The European Union requests the Panel to clarify whether the discussion that follows the summary of the United States' arguments in the first two sentences of paragraph 9.181 (now paragraph 9.180) is also a summary of U.S. argument, or is intended to frame the Panel's own analysis of the issues raised by the arguments. In the case of the former, the European Union requests the Panel to revise the discussion to clearly indicate that the discussion represents the United States' arguments. In case of the latter, the European Union suggests that the Panel begin a new paragraph that commences from the end of the second sentence of paragraph 9.181 (now paragraph 9.181). The United States has no comment on the European Union's request.

5.97. The Panel confirms that the final three sentences of paragraph 9.181 of the Interim Report are intended to frame the Panel's analysis of the issues raised by the parties' arguments. We agree with the European Union's suggestion that, for the sake of clarity, it is preferable for the Panel to present those sentences in a new paragraph (now paragraph 9.181). We have revised the text accordingly.

Paragraph 9.184

5.98. The European Union requests the Panel to modify the final sentence of paragraph 9.184 to refer only to the 787-10, and not also to the 787-9/10. The European Union explains that Boeing launched the 787-9 as part of the original family of 787 LCA in 2004, with entry into service scheduled later than for the 787-8. The United States agrees with the revision requested by the European Union.

5.99. The Panel has made the modification requested by the European Union.

Footnote 3132 to paragraph 9.302 (now footnote 3152 to paragraph 9.300)

5.100. The European Union requests the Panel to add a summary of the European Union's arguments regarding the legal basis for finding significant price suppression across two product markets. More specifically, the European Union recalls that it argued that the omission from the second part of Article 6.3(c), of the requirement that the "subsidized product" and the "like

product" be in the same market, means that significant price suppression, price depression, and lost sales may be established where the effects of a subsidy arise in a product market separate from the product market in which the subsidized product competes. The United States has no comment on the European Union's request.

5.101. The Panel has made the addition requested by the European Union.

Footnote 3164 to paragraph 9.324 (now footnote 3185 to paragraph 9.322)

5.102. The European Union requests the Panel to add the relevant finding by the original panel referenced in paragraph 7.1793 of that report as a quotation to this footnote which it considers comprises the sixth through eighth sentences of that paragraph.

5.103. The United States notes that footnote 3164 (now footnote 3185) cites to paragraph 7.1793 of the Panel Report in *US – Large Civil Aircraft (2nd complaint)*, which it argues includes relevant text that the European Union has not requested be included in the quotation from that paragraph. The United States considers that, rather than adding an incomplete quotation from paragraph 7.1793, as proposed by the European Union, or alternatively quoting virtually the entirety of the cited paragraph, the best course of action is to reject the European Union's request and leave footnote 3164 (now footnote 3185) unchanged.

5.104. The European Union has not adequately explained why it considers it appropriate to quote only the sixth through eighth sentences of paragraph 7.1793 of the panel report in *US – Large Civil Aircraft (2nd complaint)* with the Panel's citation to that paragraph in footnote 3164 (now footnote 3185).

5.105. The Panel therefore declines to make the modification requested by the European Union.

Footnote 3277 to paragraph 9.392 (now footnote 3288 to paragraph 9.389)

5.106. The European Union requests the Panel to clarify, in the second sentence of footnote 3277 (now footnote 3288), that the cited number of aircraft alleged to be lost sales between 2007 and 2012 covers not only alleged lost sales of the A350XWB but also of the A320neo and A320ceo. The United States agrees with the requested correction.

5.107. The Panel has made the correction requested by the European Union.

Paragraph 9.461 (now paragraph 9.458)

5.108. The European Union requests the Panel to correct the second sentence of paragraph 9.461 (now paragraph 9.458) by adding the word "and" before the phrase "there were no other non-price factors that explain Boeing's success in obtaining the sale …".

5.109. The United States responds that the European Union's proposed revision would be confusing because the placement of the commas and the repeated use of the word "and" would leave uncertainty as to which phrase or phrases explain what the Panel means by "price-sensitive" and which phrase or phrases are criteria in addition to price sensitivity that together resulted in two of the examined sales campaigns. The United States proposes an alternative modification to the second sentence of paragraph 9.461 (now paragraph 9.458) in which the word "and" would be inserted as proposed by the European Union, but the comma that precedes that word would be deleted.

5.110. The Panel has modified the second sentence of paragraph 9.461 (now paragraph 9.458) taking into account the comments of both parties.

Paragraph 9.483 (now paragraph 9.480)

5.111. The European Union requests the panel to add the term "significant" in the last clause of paragraph 9.483 (now paragraph 9.480) to accurately reflect the European Union's arguments as presented in paragraphs 9.415 and 9.432 (now paragraphs 9.412 and 9.429). The United States has no comment on the European Union's request.

5.112. The Panel has made the modification requested by the European Union.

5.2.6 Appendix 1

Paragraph 49

5.113. The United States argues that the evidence before the Panel does not support the conclusion, expressed in the final sentence of paragraph 49 of Appendix 1, that collaborative research and development agreements "typically" give **[***]**. The United States accordingly requests that the final sentence of paragraph 49 of Appendix 1 be modified to state only that **[***]**.

5.114. The United States argues that the analysis of the Panel in the preceding section of Appendix 1 does not contain a comprehensive discussion of the amounts paid by the commissioning parties to use the intellectual property. Moreover, according to the United States, taking the 18 R&D agreements identified by Berneman and Razgaitis as the broadest example:

a. 14 required the commissioning party to pay royalties to the commissioned party in the event it made commercial sales of a product using the results of the contracted research, without regard to whether the sale was subject to an exclusive or non-exclusive licence;

b. a 15th contract called for the payment of royalties in some situations and profit-sharing in others;

c. some of the agreements granted the commissioning party only an exclusive licence, either because that licence covered essentially all products or because the exclusive licence applied only to products that the commissioning party chose to commercialize, while the commissioned party retained all of the rights with respect to other products;

d. nine of the 18 agreements required the commissioning party to make milestone payments in addition to royalties, typically linked to the achievement of steps that lead to marketability of products resulting from the research.

5.115. On the basis of the foregoing, the United States argues that the evidence before the Panel does not support a conclusion that collaborative research and development agreements **[***]**.

5.116. The European Union requests the Panel to leave unchanged the language of the text of the Interim Report in paragraph 49 of Appendix 1.

5.117. The European Union considers that the United States' comment appears to be focused on the Panel's reference to the "cost" of non-exclusive licences for the commissioning party (in the sense of the amounts paid by the commissioning parties to use the intellectual property), and the reference in the last sentence of paragraph 49 to **[***]**. It notes, however, that the United States requests the Panel to remove all reference to non-exclusive licences, and argues that such a request is inconsistent with the fact that the Panel correctly explains in paragraph 49 that, under the sample collaborative R&D agreements, the commissioning party obtains **[***]**.

5.118. The European Union further argues that the United States' references to the agreements identified by Berneman and Razgaitis do not substantiate its request, including with respect to the specific question of cost. Rather, the European Union considers that those agreements support the Panel's conclusion that **[***]**. The European Union argues, more specifically that some of the 18 R&D agreements automatically provide the commissioning party with royalty-free licences to commercially use foreground intellectual property, while under other agreements in this group, the commissioning party receives patent ownership rights to some of the newly developed technology, and therefore does not need to acquire or pay for a licence to commercially use their own intellectual property. Both of these situations, according to the European Union, are situations where the commissioning party can **[***]**, in parallel with the commissioned party, fully consistent with the line in the last sentence of paragraph 49 of Appendix 1 that the United States requests be deleted.

5.119. The European Union further observes that the final sentence in paragraph 49 appears in the "Conclusions" section of Appendix 1, which considers evidence beyond the 18 agreements referred to by the United States in its comment above, and includes also the Panel's examination and findings under Contracts A through F, which fully support the conclusion in the final sentence of paragraph 49 that the United States requests be deleted. In this regard, the European Union notes that, under Contracts A through F, **[***]**. The European Union refers to the Panel's summary of Contracts A through F in paragraph 21 of Appendix 1, noting that the United States does not object to the Panel's conclusion that, with respect to Contracts A through F, **[***]**. The European Union accordingly argues that, in requesting deletion of an important aspect of the Panel's conclusion, the United States has chosen to ignore an entire section of the Panel's analysis upon which that conclusion is partially based.

5.120. We consider that it is possible to address the United States' objection to the accuracy of the last sentence of paragraph 49 of Appendix 1 without deleting the whole phrase that follows (b) in that sentence, which as the European Union suggests, is not warranted. The Panel has modified the last sentence of paragraph 49 of Appendix 1 accordingly.

5.3 The BCI or HSBI designation of certain information

5.121. The parties each made a number of requests regarding the bracketing and redaction of information in the Interim Report as BCI or HSBI. The United States agrees with the European Union's requests and the European Union did not comment with respect to the United States' requests.

5.122. The Panel has made the requested changes to the designations of certain information as BCI or HSBI.

6 INTRODUCTION TO PANEL FINDINGS

6.1 Alleged non-compliance of the United States with Article 7.8 of the SCM Agreement as the main subject of this compliance proceeding

6.1. Our task in this proceeding under Article 21.5 of the DSU is to resolve a "disagreement as to the existence or consistency with a covered agreement of measures taken to comply with the recommendations and rulings" of the DSB.[48] The central issue before us, in this regard, is whether the United States has complied with the recommendations and rulings adopted by the DSB in the original proceeding pursuant to Article 7.8 of the SCM Agreement.[49]

6.2. The European Union claims that "the United States has failed to implement the DSB's recommendations in *US – Large Civil Aircraft (2nd complaint)* i.e. that it withdraw the subsidies or take appropriate steps to remove the adverse effects, pursuant to Article 7.8 of the SCM Agreement".[50]

6.3. The United States asserts that "the United States has either withdrawn the relevant subsidies or taken appropriate steps to remove their adverse effects. The United States has accordingly complied fully with the recommendations and rulings of the DSB".[51]

6.4. While the European Union's request for the establishment of a panel also refers to Article 4.7 of the SCM Agreement[52], the European Union has indicated that it does not request the Panel to make a finding that the United States has failed to comply with that provision.[53]

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[48] We discuss relevant panel and Appellate Body decisions relating to the purpose and proper scope of proceedings under Article 21.5 of the DSU in Section 7 of this Report.

[49] See para. 6.7 below.

[50] European Union's first written submission, para. 1933.

[51] United States' first written submission, para. 1.

[52] Paragraph 6 of the European Union's request for the establishment of a panel reads:

> By communication dated 23 September 2012, the United States notified the European Union that the United States has taken a number of actions allegedly withdrawing the subsidies or removing their adverse effects (23 September notification). The actions and events listed by the United States in its

6.5. We note that the European Union also claims that the measures at issue in this proceeding are inconsistent with Articles 3.1(a) and (b) and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994. Insofar as these claims are within the scope of this proceeding, we address them in Section 10 of this Report.

6.2 Article 7.8 of the SCM Agreement and Article 19 of the DSU

6.6. Article 7.8 of the SCM Agreement provides:

> Where a panel report or an Appellate Body report is adopted in which it is determined that any subsidy has resulted in adverse effects to the interests of another Member within the meaning of Article 5, the Member granting or maintaining such subsidy shall take appropriate steps to remove the adverse effects or shall withdraw the subsidy.

6.7. In the original proceeding in this dispute the Appellate Body recommended:

> {T}hat the DSB request the United States to bring its measures, found in this Report, and in the Panel Report as modified by this Report, to be inconsistent with the SCM Agreement, into conformity with its obligations under that Agreement. More specifically, having regard to the recommendation made by the Panel in paragraph 8.9 of its Report and the provisions of Article 7.8 of the SCM Agreement, the Appellate Body recommends that the United States take appropriate steps to remove the adverse effects found to have been caused by its use of subsidies, or to withdraw those subsidies.[54]

6.8. Article 19.1 of the DSU provides that where a panel or the Appellate Body concludes that a measure is inconsistent with a covered agreement, it shall recommend "that the Member concerned bring the measure into conformity with that agreement". It would appear from the Appellate Body's recommendation in the original proceeding that the Appellate Body regards the requirements of Article 7.8 of the SCM Agreement as a specific expression of this general compliance obligation.

6.9. We note, in this regard, that in disputes involving findings of actionable subsidies, the Appellate Body has consistently formulated its recommendations in the terms used in Article 19.1 of the DSU.

6.10. Thus, in *US – Upland Cotton* and *US – Upland Cotton (Article 21.5 – Brazil)*, the Appellate Body upheld panel findings regarding actionable subsidies provided by the United States to U.S. cotton producers and recommended that "the Dispute Settlement Body request the United States to bring its measures, found in this report and in the panel report as modified by this report to be

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> 23 September 2012 notification do not withdraw the subsidies or remove their adverse effects, as required by Articles 4.7 and 7.8 of the SCM Agreement. Instead, after the end of the implementation period on 24 September 2012, the United States maintains specific subsidies that cause present adverse effects to EU interests, that are prohibited subsidies contingent on export performance or on the use of domestic over imported goods, and that are inconsistent with the United States' national treatment obligations, as detailed below in section II. Accordingly, in the view of the European Union, the United States has failed to achieve compliance with the recommendations and rulings of the DSB.

(emphasis added)
See also European Union's first written submission, para. 11.

[53] European Union's second written submission, para. 107. Therefore, we see no need to rule on the request of the United States for a finding that Article 4.7 is not within the Panel's terms of reference. (United States' request for preliminary rulings, dated 13 November 2012, paras. 58 and 59). We agree with the European Union that the fact that it does not request the Panel to make findings under Article 4.7 in this proceeding does not mean that the Panel is precluded from addressing the European Union's claims under Article 3 of the SCM Agreement. (European Union's second written submission, para. 109).

[54] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1352. (emphasis original)

inconsistent with the Agreement on Agriculture and the SCM Agreement, into conformity with its obligations under those Agreements".[55]

6.11. Similarly, in *EC and certain member States – Large Civil Aircraft*, the Appellate Body observed that to the extent that it had upheld the Panel's findings regarding actionable subsidies or those findings had not been appealed, "the Panel's recommendation pursuant to Article 7.8 of the SCM Agreement, in paragraph 8.7 of the Panel Report, that 'the Member granting each subsidy found to have resulted in such adverse effects, 'take appropriate steps to remove the adverse effects or … withdraw the subsidy'', stands". The Appellate Body then recommended "that the DSB request the European Union to bring its measures, found in this Report, and in the Panel Report as modified by this Report, to be inconsistent with the SCM Agreement, into conformity with its obligations under that Agreement".[56]

6.12. We also note the Appellate Body's discussion in *US – Upland Cotton (Article 21.5 – Brazil)* of the relationship of Article 7.8 of the SCM Agreement to the general DSU rules and procedures:

> Article 7.8 is one of the "special or additional rules and procedures on dispute settlement contained in the covered agreements" that are identified in Article 1.2 and Appendix 2 of the DSU, which prevail over the general DSU rules and procedures to the extent that there is a difference between them. As we see it, Article 7.8 specifies the actions that the respondent Member must take when a subsidy granted or maintained by that Member is found to have resulted in adverse effects to the interests of another Member. This means that, in order to determine whether there is compliance with the DSB's recommendations and rulings in a case involving such actionable subsidies, a panel would have to assess whether the Member concerned has taken one of the actions foreseen in Article 7.8 of the SCM Agreement.[57]

6.13. The fact that in the original proceeding in this dispute the Appellate Body formulated its recommendation under Article 7.8 of the SCM Agreement, as a specific instance of the general obligation in Article 19.1 of the DSU that a Member bring its measure into conformity with its obligations under a covered agreement, suggests to us that the Appellate Body does not consider that the compliance obligations under Article 7.8 of the SCM Agreement are of a fundamentally different nature than the compliance obligations under Article 19.1 of the DSU. That the Appellate Body interprets Article 7.8 in harmony with Article 19 of the DSU[58] is also apparent from the fact that when the Appellate Body discussed the scope of Article 7.8 in *US – Upland Cotton (Article 21.5 – Brazil)*, it observed that "remedies in WTO law are generally understood to be prospective".[59]

6.14. The Appellate Body has explained that Article 7.8 of the SCM Agreement will usually require a Member to take "affirmative action":

> Pursuant to Article 7.8, the implementing Member has two options to come into compliance. The implementing Member: (i) shall take appropriate steps to remove the adverse effects; or (ii) shall withdraw the subsidy. The use of the terms "shall take" and "shall withdraw" indicate that compliance with Article 7.8 of the SCM Agreement

[55] Appellate Body Reports, *US – Upland Cotton*, para. 764; and *US – Upland Cotton (Article 21.5 – Brazil)*, para. 449. Although in the latter case the Appellate Body did not refer to Article 7.8 in its own recommendation, elsewhere in its report it upheld the panel's finding that the United States had failed to comply with Article 7.8. (Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 447).

[56] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1416 and 1418.

[57] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 235 (fns omitted). See also para. 240 ("Article 7.8 informs the meaning and scope of the DSB's recommendations and rulings arising from the original proceedings. In our view, Article 7.8 specifies the actions that the United States had to take in order to comply with the DSB's recommendations and rulings").

[58] On the notion of harmonious treaty interpretation in the context of the WTO Agreement, see e.g. Appellate Body Report, *US – Upland Cotton*, para. 549.

[59] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, fn 494. Another illustration of the Appellate Body's perspective on the close relationship between Article 7.8 of the SCM Agreement and Article 19 of the DSU is its observation that "{a}lthough there is no specific provision in the SCM Agreement requiring a panel to make a recommendation of withdrawal with respect to actionable subsidies, a panel may do so pursuant to the general rule in Article 19.1 of the DSU". (Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, fn 1740).

> will usually involve some action by the respondent Member. This affirmative action would be directed at effecting the withdrawal of the subsidy or the removal of its adverse effects. A Member would normally not be able to abstain from taking any action on the assumption that the subsidy will expire or that the adverse effects of the subsidy will dissipate on their own.[60]

6.15. The issues in dispute in this proceeding pertain to a large extent to the question of whether the United States has taken such "affirmative action" and, if so, whether that action has been adequate.[61] The diverging positions of the parties with regard to whether the United States has taken such "affirmative action" reflect the very different narratives underlying the parties' respective cases.

6.16. The United States' basic narrative is that it has withdrawn most of the specific subsidies found to have caused adverse effects in the original proceeding and that the subsidies that have not been withdrawn are too small to cause adverse effects. The United States argues that NASA and DOD have greatly reduced the amount of research they pay Boeing to conduct under the relevant contracts and agreements and that NASA has also modified the way it conducts research so as to remove the aspects of its practices that led to the findings against the pre-2007 NASA procurement contracts. The U.S. Congress terminated the FSC/ETI measures in 2006 and Boeing has not received FSC/ETI deductions since then. The value of the tax abatements associated with the pre-2007 City of Wichita IRBs is tiny, the City of Wichita has not issued any new IRBs to Boeing, and the IRB programme is no longer specific. The United States considers that, by withdrawing the FSC/ETI measures, it has removed the adverse effects of the Washington State B&O tax rate reduction (the only remaining subsidy subject to the DSB recommendations and rulings which has not been withdrawn) because the amount of that tax rate reduction is too small by itself to cause adverse effects.[62] The United States alleges that the European Union engages in a number of unsustainable efforts to inflate the value of, and expand the scope of, the measures it is challenging in order to mask the reality that the measures within the scope of this proceeding, which the United States has for the most part withdrawn and reduced in value, cannot be causing any adverse effects, let alone the magnified effects alleged by the European Union.[63]

6.17. The European Union's basic narrative is that, far from withdrawing the subsidies found to have caused adverse effects to the European Union's LCA-related interests in the original proceeding, the U.S. federal, state, and local authorities have significantly increased those subsidies and worsened their adverse effects. The very same subsidies that were found in the original proceeding to have enabled the availability and advanced technology of the 787 and the lower prices of the 737NG, plus additional, closely related subsidies, exist at present and cause present significant competitive harm to the European Union's LCA-related interests. The European Union argues that none of the U.S. subsidies at issue in the original proceeding has been withdrawn. The European Union rejects the United States' arguments that adding allegedly lower annual amounts of post-2006 aeronautics R&D subsidies results in a reduction in subsidies. Rather, adding new subsidies to the earlier set of massive, non-withdrawn subsidies, even at a lower rate, increases the pool of subsidies and the adverse effects.[64] The European Union regards the United States' objections to the inclusion of certain measures within the scope of this proceeding as being without merit, and its arguments concerning the magnitudes of the subsidies as

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[60] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 236. (fn omitted)

[61] Brazil, a third party to this proceeding, argues that the obligation in Article 7.8 to take appropriate steps to remove the adverse effects means that a Member is generally expected to take affirmative action and to actively intervene to remove the adverse effects. In circumstances where adverse effects have been found to be caused by a subsidy that no longer exists at the time of implementation, the relevant question is whether the Member in question has taken steps that are appropriate to break the causal relationship between the subsidy and the adverse effects. Such steps will only be appropriate "if they impact on the specific adverse effects found to exist and are likely to lead to the removal of the specific adverse competitive advantage that resulted from the use of the subsidy". Brazil also recalls its position in the dispute in *US – Upland Cotton (Art. 21.5 – Brazil)* that a finding of adverse effects "applies beyond the historical period considered by the panel" and that Article 7.8 requires the Member whose subsidies have caused adverse effects "to take appropriate steps to fully withdraw the present, ongoing, and future effects of the subsidies". (Brazil's third-party submission, paras. 53-57).

[62] United States' opening statement at the meeting with the Panel, para. 2. The United States submitted an opening statement at the meeting with the Panel but did not submit a closing statement.

[63] United States' opening statement at the meeting with the Panel, para. 3.

[64] European Union's opening statement at the meeting with the Panel, para. 60.

depending on "atomising" the subsidy – an analysis the Appellate Body rejected.[65] The European Union alleges that the United States has provided Boeing with USD 8.85 billion in subsidies over the 2007-2014 period, with the annual amounts significantly increasing each year. Accordingly, the amount of subsidies available to Boeing for pricing down its LCA in strategic, price sensitive sales campaigns is substantial and not insignificantly small, as the United States suggests.[66]

6.3 Structure of the European Union's case that the United States has failed to withdraw the subsidy and take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement

6.18. It is well established that the general rules on the allocation of the burden of proof in WTO dispute settlement also apply to Article 21.5 of the DSU[67], including in cases involving an alleged failure of a Member to take the steps required by Article 7.8 of the SCM Agreement. As a consequence, the European Union as complaining party in this proceeding bears the burden of demonstrating both that the United States has failed to withdraw the subsidy and that the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8. This aspect of the allocation of the burden of proof is not in dispute between the parties.[68]

6.19. In this regard, we also note, and agree with, the observation of the panel in *US – Upland Cotton (Article 21.5 – Brazil)* that there is "no support in the text of Article 7.8 of the SCM Agreement and Article 21.5 of the DSU for the proposition that in a proceeding under Article 21.5 involving an alleged failure to comply with Article 7.8 of the SCM Agreement, a Member which has not withdrawn the subsidy has the burden of showing that it has removed the adverse effects".[69]

6.20. Given that the burden of proof is on the European Union to demonstrate that the United States has failed to comply with Article 7.8, our analysis in this Report proceeds on the basis of an examination of the arguments and evidence advanced by the European Union. We find it useful, in this respect, to set out in this Section of our Report how the European Union has structured its case in accordance with its interpretation of Article 7.8.

6.21. The European Union argues that a finding of non-compliance with Article 7.8 requires a determination that a Member grants or maintains subsidies after the end of the implementation period[70] and that these subsidies cause present adverse effects.[71] Thus, the European Union interprets the obligation to "withdraw the subsidy" as an obligation not to grant or maintain the subsidy after the end of the implementation period[72] and it interprets the obligation to "take appropriate steps to remove the adverse effects" as an obligation to ensure that no present adverse effects arise after the end of that period from any subsidies that are not withdrawn. In light of this interpretation, the European Union claims that the United States has failed to comply with its obligations under Article 7.8 on the basis that: (a) the United States has failed to withdraw

[65] European Union's opening statement at the meeting with the Panel, para. 61.
[66] European Union's opening statement at the meeting with the Panel, para. 86.
[67] Appellate Body Report, *Chile – Price Band Systems (Article 21.5 – Argentina)*, paras. 134-136; and Panel Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 9.4.
[68] European Union's first written submission, paras. 32, 45, and 48; United States' first written submission, paras. 40 and 41.
[69] Panel Report, *US – Upland Cotton (Article 21.5 – Brazil)*, fn 89. The panel made this statement in response to an argument of New Zealand as third party that "Article 7.8 of the SCM Agreement affects the distribution of burden of proof in this proceeding under Article 21.5 of the DSU", such that "a Member that fails to withdraw the measure in question then should have the burden of showing that it has removed the adverse effects". (Panel Report, *US Upland Cotton (Article 21.5 – Brazil)*, fn 89).
[70] "Implementation period" as used by the European Union in this case means the period of six months referred to in Article 7.9 of the SCM Agreement, which in this dispute ended on 23 September 2012.
[71] See e.g. European Union's first written submission, para. 816:

> In short, under Article 7.8 of the SCM Agreement, a compliance panel must find that the responding Member has failed to comply with the recommendations and rulings of the DSB if two conditions are met: (i) it is demonstrated that the responding Member grants or maintains subsidies after the end of the implementation period, which it has failed to withdraw; and (ii) these non-withdrawn subsidies presently cause adverse effects presently arising.

[72] We consider that this interpretation of the phrase "withdraw the subsidy" is implicit in the European Union's arguments. The European Union does not explicitly discuss the meaning of this phrase.

the subsidy, within the meaning of Article 7.8, because it grants or maintains subsidies to Boeing after the end of the implementation period; and (b) the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8, because these subsidies cause present adverse effects to the interests of the European Union, within the meaning of Article 5 of the SCM Agreement.[73] These present adverse effects to the interests of the European Union occur "in the form of tens of billions of U.S. dollars of lost revenue to Airbus through significant lost sales, significantly suppressed prices, and displaced or impeded market shares in various LCA product markets".[74]

6.22. With respect to the European Union's interpretation of Article 7.8, the United States considers that "{i}n effect, the EU is asserting that a Member challenging compliance under Article 7.8 must make its entire case again". The United States notes that "the DSU and the SCM Agreement do not constrain a Member to adopt this approach" but that "as the EU does not advance any other arguments, the question of whether it is the only way to demonstrate noncompliance under Article 7.8 is not before the panel".[75]

6.23. Thus, in light of how the European Union has framed its case, our task in this proceeding is to determine whether the United States has failed to withdraw the subsidy within the meaning of Article 7.8 because it grants or maintains subsidies to Boeing after the end of the implementation period and, if so, whether the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8, because these subsidies cause present adverse effects. In proceeding on the basis, we do not mean to imply that we endorse the European Union's apparent view that a finding of non-compliance with Article 7.8 always requires this type of analysis.

6.24. While the central proposition advanced by the European Union in support of its claim that the United States has failed to comply with Article 7.8 is that the United States grants or maintains subsidies to Boeing after the end of the implementation period that cause present adverse effects, we see an important conceptual distinction in the manner in which the European Union purports to substantiate this assertion between two groups of measures: seven types of "post-2006" subsidies allegedly provided by the United States to Boeing since the reference period considered in the original proceeding, on the one hand, and certain "pre-2007" NASA and DOD aeronautics R&D subsidies at issue in the original proceeding, on the other.

6.25. The main argument of the European Union in support of its position that the United States grants or maintains subsidies to Boeing after the end of the implementation period that cause present adverse effects is that, subsequent to the 2004-2006 reference period considered in the original proceeding, the United States has granted or maintained subsidies to Boeing that are of "the same nature" as the subsidies that were found to be actionable in the original proceeding. In this respect, the European Union asserts that the United States grants or maintains seven categories of "post-2006 subsidies to Boeing's LCA Division".[76] These post-2006 subsidies include alleged subsidies provided pursuant to programmes that continue the programmes at issue in the original proceeding and additional subsidies allegedly introduced by the United States that the European Union considers to be within the scope of this proceeding because of their relationship with the measures at issue in the original proceeding.[77]

6.26. The European Union submits that the post-2006 subsidies at issue are either "similar to, and essentially a continuation of" or "similar to" the subsidies the subject of the DSB recommendations and rulings in the original proceeding:

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[73] See e.g. European Union's first written submission, paras. 5, 817, 818, and 1934.

[74] European Union's first written submission, para. 818.

[75] United States' first written submission, para. 41.

[76] European Union's first written submission, para. 56, figure 1. See para. 8.55 below.

[77] See e.g. European Union's request for the establishment of a panel, para. 7; and first written submission, section V. It would appear that by "additional subsidies" within the scope of this proceeding the European Union means: (a) NASA aeronautics R&D subsidies provided pursuant to "successor and other closely related programmes"; (b) the FAA CLEEN Program; (c) DOD aeronautics R&D subsidies provided under DOD RDT&E program elements that either did not exist at the time of the original panel or that previously existed but did not fund Boeing's dual-use LCA relevant research and development until 2007; (d) the Washington State Joint Center for Aerospace Technology Innovation; and (e) all of the South Carolina measures. (European Union's first written submission, paras. 60 and 197; 229 and 232; 388 and 389; 541; and 734 and 736).

> In the present dispute, the European Union challenges a number of post-2006 subsidies maintained by the United States. With respect to these subsidies, the European Union demonstrated that NASA's post-2006 aeronautics R&D subsidies are similar to, and essentially a continuation of, NASA's pre-2007 aeronautics R&D subsidies. The European Union has also demonstrated that the FAA CLEEN Program is similar to, and essentially a continuation of, NASA's aeronautics R&D subsidies. Similarly, the European Union established that the "new" DOD subsidies are similar to, and essentially a continuation of, the NASA and DOD programmes at issue before the original panel. The European Union also demonstrated that the South Carolina subsidies are similar to the Washington, Kansas, and FSC/ETI subsidies at issue before the original panel. In respect of all these measures, the European Union has demonstrated that they are specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement, that under current factual circumstances cause adverse effects, rendering them inconsistent with Articles 5 and 6.3 of the SCM Agreement.[78]

6.27. The European Union submits that the post-2006 subsidies cause adverse effects in the post-implementation period mainly through a "price causal mechanism".

6.28. On the other hand, with respect to certain pre-2007 NASA and DOD aeronautics R&D subsidies that were found to be a cause of adverse effects by virtue of their technology effects in relation to the Boeing 787[79], the European Union submits that the United States grants or maintains subsidies to Boeing after the end of the implementation period and has thereby failed to withdraw the subsidy, within the meaning of Article 7.8, because the United States has failed to modify the terms of the measures found to be actionable subsidies in the original proceeding so as to remove the benefit conferred by these measures. With respect to these pre-2007 NASA and DOD aeronautics R&D subsidies, as well as the pre-2007 DOD procurement contracts which it considers are within the scope of this proceeding, the European Union argues that the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8, because these subsidies continue to cause additional adverse effects in the post-implementation period through a "technology causal mechanism". Additionally, the European Union argues that the particular adverse effects found in the original proceeding to have been caused by the pre-2007 NASA and DOD aeronautics R&D subsidies to the 787 have not ceased to exist and that these adverse effects themselves continue into the post-implementation period.

6.29. Thus, it is possible to represent the main aspects of the European Union's case as follows:

a. The United States grants or maintains subsidies to Boeing after the end of the implementation period and has thus failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement:

   - Post-2006 subsidies: The United States grants or maintains seven categories of subsidies to Boeing that are similar to (and a continuation of) the measures found to be actionable subsidies in the original proceeding.

   - Pre-2007 NASA and DOD aeronautics R&D subsidies: The United States has failed to modify the terms of the particular NASA and DOD transactions at issue in the original proceeding in a manner that removes the benefit.[80]

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[78] European Union's response to Panel question No. 151, para. 8 (fns omitted). See also European Union's comments on United States' response to Panel question No. 151, para. 9 ("{i}n sum, the European Union has demonstrated that several of the post-2006 subsidies are of the same nature as, in the sense that they are similar to and essentially a continuation of, the original subsidies, and that such subsidies cause 'present' adverse effects (including a 'present' threat of various forms of serious prejudice). The compliance Panel should, therefore, find that the United States has failed to comply with Article 7.8 of the SCM Agreement." (fns omitted))

[79] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1773 and 7.1797.

[80] Thus, the European Union uses the term "subsidies granted or maintained after the end of the implementation period" not only where an alleged financial contribution continues after the end of the implementation period but also where the financial contribution may have ended before the end of the implementation period but the benefit has not been removed. With regard to certain pre-2007 aeronautics R&D subsidies, the European Union argues that the United States maintains, and has thus failed to withdraw, its

b. The subsidies granted or maintained by the United States cause present adverse effects and the United States has thus failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement [81]:

- Post-2006 subsidies: the subsidies cause new adverse effects in the post-implementation period mainly through a price causal mechanism.

- Pre-2007 NASA and DOD aeronautics R&D subsidies: (i) the subsidies continue to cause additional adverse effects in the post-implementation period through a technology causal mechanism; and (ii) adverse effects found in the original proceeding to have been caused by these subsidies have not ceased to exist and continue into the post-implementation period.

6.30. The European Union's approach to attempt to demonstrate non-compliance with Article 7.8 on the basis of certain pre-2007 subsidies the subject of the DSB recommendations and rulings, and alleged post-2006 subsidies and their effects, rests on the premise that Article 7.8 applies not only to the particular subsidy measures granted in the past that were the subject of the relevant DSB recommendations and rulings in the original proceeding, but also to measures taken subsequent to the conclusion of the original proceeding. We consider that this premise is consistent with the Appellate Body's interpretation of the concept of "withdrawal" of the subsidy and its analysis in *US – Upland Cotton (Article 21.5 – Brazil)* of the scope of Article 7.8.

6.31. The meaning of the term "withdraw" the subsidy has been discussed mainly in disputes involving Article 4.7 of the SCM Agreement, which provides that in case of a finding of a prohibited subsidy "the panel shall recommend that the subsidizing Member withdraw the subsidy without delay".

6.32. In *Brazil – Aircraft (Article 21.5 – Canada)*, the Appellate Body observed that the word "withdraw" in Article 4.7 of the SCM Agreement "has been defined as 'remove' or 'take away' and as 'to take away what has been enjoyed; to take from'" and that "{t}his definition suggests that 'withdrawal' of a subsidy, under Article 4.7 of the SCM Agreement, refers to the 'removal' or 'taking away' of that subsidy".[82] The Appellate Body considered that "to continue to make payments under an export subsidy measure found to be prohibited is not consistent with the obligation to 'withdraw' prohibited export subsidies, in the sense of 'removing or 'taking away'" and thus found that "the recommendation of the DSB requires Brazil to stop issuing NTN-I bonds as from 18 November 1999 pursuant to letters of commitment issued before 18 November 1999".[83]

6.33. In *US – FSC (Article 21.5 – EC II)*, the Appellate Body considered that:

> Where a Member withdraws a prohibited subsidy only in part, it has failed to comply *fully* with its WTO obligation and the Article 4.7 recommendation continues to be in effect with respect to the part of the subsidy that has not been withdrawn. Similarly, full *withdrawal* of a prohibited subsidy within the meaning of Article 4.7 of the SCM Agreement cannot be achieved by a "measure taken to comply" that replaces the original subsidy with yet another subsidy found to be prohibited. In both instances, the Member cannot be said to have complied with the obligation to withdraw fully the prohibited subsidy.[84]

6.34. In *US – Upland Cotton (Article 21.5 – Brazil)*, the Appellate Body clarified that the obligation in Article 7.8 is not limited to the particular "subsidies granted in the past and which may have

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subsidies, even where payments have ceased to be made pursuant to those measures, because the United States has failed to take action to remove the benefit within the meaning of Article 1.1(b) in respect of these measures. (European Union's second written submission, paras. 429 and 431; response to Panel question No. 58, para. 15).

[81] For a more detailed discussion of the different aspects of the European Union's adverse effects case see, Section 9 of this Report.

[82] Appellate Body Report, *Brazil – Aircraft (Article 21.5 – Canada)*, para. 45. (fn omitted)

[83] Appellate Body Report, *Brazil – Aircraft (Article 21.5 – Canada)*, para. 45. See also Appellate Body Report *US – FSC (Article 21.5 – EC)*, paras. 229-231; and Panel Report, *US – FSC (Article 21.5 – EC II)*, para. 7.62.

[84] Appellate Body Report, *US – FSC (Article 21.5 – EC II)*, para. 83. (emphasis original)

formed the basis of a panel's determination of present serious prejudice and adverse effects" but "is of a continuing nature, extending beyond subsidies granted in the past":

> The question then becomes: With respect to which subsidies must the implementing Member take such action? Such action would certainly be expected with respect to subsidies granted in the past and which may have formed the basis of a panel's determination of present serious prejudice and adverse effects. However, we do not see the obligation in Article 7.8 as being limited to subsidies granted in the past. Article 7.8 expressly refers to a Member "granting or maintaining such subsidy". The verb "maintain" suggests, to us, that the obligation set forth in Article 7.8 is of a continuous nature, extending beyond subsidies granted in the past. This means that, in the case of recurring annual payments, the obligation in Article 7.8 would extend to payments "maintained" by the respondent Member beyond the time period examined by the panel for purposes of determining the existence of serious prejudice, as long as those payments continue to have adverse effects. Otherwise, the adverse effects of subsequent payments would simply replace the adverse effects that the implementing Member was under an obligation to remove. Such a reading of Article 7.8 would not give meaning and effect to the term "maintain", which is distinct from the term "grant", and has also been included in that Article. Indeed, it would render the term "maintain" redundant. In addition, it would fail to give meaning and effect to the obligation to "take appropriate steps to remove the adverse effects" in Article 7.8, and to the requirement under Article 21.5 to "comply" with the DSB's recommendations and rulings, including the requirement to take the remedial action foreseen in Article 7.8 as a consequence of a finding of adverse effects.[85]

6.35. The Appellate Body found support for this view in the context provided by Article 4.7 of the SCM Agreement. Referring to the above-quoted passage from *US – FSC (Article 21.5 – EC II)*[86], the Appellate Body stated that "{s}imilarly, a Member would not comply with the obligation in Article 7.8 to withdraw the subsidy if it leaves an actionable subsidy in place, either entirely or partially, or replaces that subsidy with another actionable subsidy".[87]

6.36. In light of the Appellate Body's interpretation of the term "withdraw" the subsidy and its analysis of the scope of Article 7.8, it is clear that the scope of our analysis under Article 7.8 is not inherently limited to the particular pre-2007 measures that were found to be inconsistent with the SCM Agreement in the original proceeding and that subsidies allegedly granted to Boeing subsequent to the reference period considered by the original panel can also be the basis for a finding of non-compliance under Article 7.8. Although the subsidies at issue considered in *US – Upland Cotton (Article 21.5 – Brazil)* were so-called recurrent subsidies, the reasoning of the Appellate Body in our view is not limited to such subsidies and applies more generally to situations in which a Member "leaves an actionable subsidy in place, either entirely or partially, or replaces that subsidy with another actionable subsidy".[88] We note that the United States does not argue in this proceeding that Article 7.8 does not apply to any measure taken subsequent to the conclusion of the original proceeding and that the Panel should therefore limit its analysis to the particular pre-2007 measures the subject of the DSB recommendations and rulings. The United States argues that many post-2006 measures raised by the European Union are not properly within the scope of this proceeding on the basis that those measures do not have a sufficiently close nexus with the measures the subject of the DSB recommendations and rulings to be considered "measures taken to comply".[89] However, the United States does not object to the inclusion of any measure simply because it is a post-2006 measure. Our view that Article 7.8 can in principle apply to measures introduced subsequent to the reference period considered in the original proceeding is without prejudice to whether the particular post-2006 measures challenged by the European Union are properly within the scope of this proceeding. We consider that matter below in Section 7 of this Report.

6.37. In addition to the notion that Article 7.8 applies to both the subsidies found to be actionable in the original proceeding and subsidies allegedly provided subsequent to the original proceeding,

[85] *Appellate Body Report*, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 237. (fns omitted)
[86] See para. 6.33 above.
[87] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 238.
[88] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 238.
[89] See Section 7 below.

another important aspect of the European Union's analytical approach in this proceeding is that it would appear to rest on a "prospective" interpretation of Article 7.8, both in respect of the obligation to "withdraw the subsidy" and the obligation to "take appropriate steps to remove adverse effects". The European Union expresses the failure of the United States to "withdraw the subsidy" as resulting from the fact that after the end of the implementation period the United States grants or maintains subsidies to Boeing that cause present adverse effects. The European Union does not argue that the United States has failed to comply with Article 7.8 by not taking retroactive action with respect to the particular subsidies found to be actionable subsidies in the original proceeding or to their effects. It has not argued that the United States was obligated under Article 7.8 to seek repayment from Boeing of subsidies granted in the past. With regard to the failure of the United States to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8, the European Union states explicitly that the obligation in Article 7.8 to take appropriate steps to remove the adverse effects "does not refer to the removal of adverse effects in the past" but "to the withdrawal of adverse effects in the sense of ensuring that there are no adverse effects arising in the new reference period".[90]

6.38. As noted above, the Appellate Body observed in *US – Upland Cotton (Article 21.5 – Brazil)* that "remedies in WTO law are generally understood to be prospective in nature".[91] Thus, the Appellate Body does not consider that the fact that Article 7.8 uses a formulation that is different from the language of Article 19 of the DSU supports a retrospective reading of that provision. The Appellate Body's approach in this respect appears to be different from the reasoning of the compliance panel in *Australia – Automotive Leather II (Article 21.5 – US)*. The panel in that proceeding concluded from an analysis of the ordinary meaning of the term "withdraw the subsidy" in Article 4.7 of the SCM Agreement, "read in context, and in light of its object and purpose, and in order to give it effective meaning, that this term is not limited to prospective action only but may encompass repayment of the prohibited subsidy". The panel also found that "repayment in full of the prohibited subsidy is necessary in order to 'withdraw the subsidy' in this case".[92] The European Union does not rely on the reasoning contained in this panel report in this proceeding.[93]

6.39. Aside from the Appellate Body Report in *US – Upland Cotton (Article 21.5 – Brazil)*, we consider that the context provided by Articles 7.9 and 7.10 of the SCM Agreement provides further support for a prospective interpretation of Article 7.8.

6.40. Article 7.9 provides that:

> In the event the Member has not taken appropriate steps to remove the adverse effects of the subsidy or withdraw the subsidy within six months from the date when the DSB adopts the panel report or the Appellate Body report, and in the absence of agreement on compensation, the DSB shall grant authorization to the complaining Member to take countermeasures, commensurate with the degree and nature of the adverse effects determined to exist, unless the DSB decides by consensus to reject the request.

6.41. Article 7.10 provides that:

> In the event that a party to the dispute requests arbitration under paragraph 6 of Article 22 of the DSU, the arbitrator shall determine whether the countermeasures are commensurate with the degree and nature of the adverse effects determined to exist.

[90] European Union's first written submission, para. 49.
[91] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, fn 494.
[92] Panel Report, *Australia – Automotive Leather II (Article 21.5 – US)*, paras. 6.39 and 6.48.
[93] Korea, a third party to this proceeding, argues that "the 'withdrawal' of subsidies described in Article 7.8 of the SCM Agreement occurs when the government in question ceases to give any additional subsidies" and that, notwithstanding the panel report in *Australia – Automotive Leather II (Article 21.5 – US)*, the concept of "withdrawal" does not impose "an obligation to have the recipient repay the amount of subsidies received in the past". (Korea's third-party submission, fn 18). Brazil, a third party to this proceeding, argues that "where the finding of adverse effects was based on the use of a subsidy from the past which no longer existed at the time of the reference period for adverse effects, the 'withdrawal' of the subsidy will require more than the simple reiteration of the fact that the subsidy no longer exists" and that the additional action required must entail the "taking away" of the subsidy. (Brazil's third-party submission, para. 58).

6.42. The decision of the arbitrator in *US – Upland Cotton (Article 22.6 – US II)* suggests that a determination under Article 7.10 of the SCM Agreement whether proposed countermeasures are "commensurate with the degree and nature of the adverse effects determined to exist" should be made on the basis of the effects found to exist as at the end of the implementation period without consideration of past adverse effects that have occurred prior to that date.[94] We consider that this is relevant to the interpretation of the temporal scope of the obligation in Article 7.8 to take appropriate steps to remove the adverse effects because in our view, "the adverse effects determined to exist" in Articles 7.9 and 7.10 are "the adverse effects" in Article 7.8.

6.43. Finally, with regard to the requirement of Article 7.8 to "take appropriate steps to remove the adverse effects", it is important to note that the European Union does not argue that present adverse effects may be presumed to exist on account of the similarity of the post-2006 subsidies with the measures found to confer subsidies in the original proceeding. The European Union specifically states in this respect that it "disagrees that a finding of inconsistency with Article 7.8 of the SCM Agreement can be based on *presumed*, rather than *established*, similar effects from the new subsidies".[95]

6.4 Organization of Panel's analysis

6.44. In Section 7 of the Report, we examine whether certain measures and claims of the European Union are outside the Panel's terms of reference or are otherwise outside the scope of this proceeding.

6.45. Having identified the measures and claims within our terms of reference and within the scope of this proceeding, we examine in Section 8 of the Report whether the United States has failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement. Our analysis in that Section is structured around the distinction discussed above between the arguments of the European Union regarding the pre-2007 NASA and DOD aeronautics R&D subsidies and its arguments with respect to the broader group of the post-2006 subsidies:

a. Regarding the particular pre-2007 NASA and DOD aeronautics R&D subsidies the subject of the DSB recommendations and rulings, we examine, in Section 8.1 of the Report, whether the United States has failed to withdraw the subsidy on the basis that the modifications made by the NASA-Boeing Patent Licence Agreement and DOD-Boeing Patent Licence Agreement to the terms of the NASA procurement contracts and DOD assistance instruments identified in annexes A and B of the United States' Compliance Communication have not removed the benefit, within the meaning of Article 1.1(b) of the SCM Agreement.

b. In Section 8.2 of this Report, we examine whether the United States has failed to withdraw the subsidy by granting or maintaining certain post-2006 subsidies to Boeing: NASA aeronautics R&D measures; DOD aeronautics R&D measures[96]; FAA aeronautics R&D measure; tax exemptions and exclusions under FSC/ETI legislation and successor legislation; tax abatements provided through IRBs issued by the City of Wichita; Washington state and local measures; and South Carolina measures.

6.46. In Section 9 of the Report, we examine whether subsidies that the United States grants or maintains after the end of the implementation period and which we will have found to be specific, within the meaning of Article 2, cause present adverse effects in the form of certain kinds of serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement, and whether the United States has thus failed to take appropriate steps to remove the adverse effects. The Panel addresses the European Union's arguments concerning the effects of the various subsidies on Boeing's product development and pricing behaviour in the context of the particular LCA product markets and the particular Boeing LCA that are said to benefit from the subsidies. The Panel therefore examines: (a) whether subsidies

[94] Decision by the Arbitrator, *US – Upland Cotton (Article 22.6 – US II)*, para. 4.118.

[95] European Union's comments on United States' response to Panel question No. 151, fn 4. (emphasis original)

[96] As explained below in para. 8.289, this Section of the Report also includes an analysis of whether pre-2007 DOD procurement contracts are specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.

benefiting the 787 and 777X cause serious prejudice in respect of the A350XWB and A330; and (b) whether subsidies benefiting the 737 MAX and 737NG cause serious prejudice in respect of the A320neo and A320ceo, respectively, in each case, through the various causal mechanisms alleged by the European Union.

6.47. In Section 10 of the Report, we examine the European Unions' claims that the subsidies granted or maintained by the United States are inconsistent with Articles 3.1(a) and (b) and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994, insofar as we will have found those claims to be within our terms of reference and within the scope of this proceeding.

7 WHETHER CERTAIN MEASURES AND CLAIMS ARE OUTSIDE THE PANEL'S TERMS OF REFERENCE OR ARE OTHERWISE OUTSIDE THE SCOPE OF THIS PROCEEDING

7.1 Introduction

7.1. In this Section of the Report, we address whether certain measures, and claims with respect to certain measures, are outside the Panel's terms of reference or are otherwise outside the scope of this proceeding. In Section 1.3.3, we indicate that on 13 November 2012, the United States submitted a request for preliminary rulings, objecting to the inclusion of certain claims and challenged measures as outside the Panel's terms of reference. Although the United States raises many specific objections, which we address in this Section, they are generally of one of the following three types:

a. objections based on a failure to comply with the requirements of Article 6.2 of the DSU to identify the specific measures at issue and to provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly;

b. objections to the inclusion of certain measures within the scope of the compliance proceeding on the basis that the challenged measures are neither measures subject to the DSB recommendations and rulings, nor measures taken to comply, within the meaning of Article 21.5 of the DSU; and

c. objections that the European Union is precluded from bringing certain claims in respect of certain measures on the basis that these claims: (i) were unsuccessfully brought against certain measures in the original proceeding and therefore cannot be "re-litigated" in relation to those same measures in the compliance proceeding; or (ii) were not brought against certain measures in the original proceeding when they could have been and therefore cannot be brought against those same measures for the first time in the compliance proceeding.

7.2. For purposes of our discussion below, we refer to the objections involving conformity with the requirements of Article 6.2 of the DSU as "terms of reference" objections, while the other types of objections we refer to more generally as "scope" objections. Although these latter types of objections also pertain to the Panel's terms of reference, the issues raised by these objections relate to the permissible scope of compliance proceedings under Article 21.5 of the DSU.

7.3. In Section 7.2 below, we address the various objections made by the United States to the inclusion of certain Washington state and local measures within the scope of this proceeding. The scope objections regarding the DOD aeronautics R&D measures, the FAA aeronautics R&D measure and the South Carolina measures are addressed in Sections 7.3, 7.4 and 7.5, respectively. In Section 7.6 we address a number of objections pertaining to the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III of the GATT 1994.

7.4. As explained in Section 1.3.3.2 of this Report, on 4 March 2014, the Panel received a request from the European Union for leave to file an additional submission dealing with the "legal ramifications" of SSB 5952, enacted in 2013 to amend the Washington State tax measures in certain respects, which it argued constituted "additional measures taken to comply by the United States" that are within the scope of this proceeding.[97] The Panel declined the European Union's request on 27 May 2014. The Panel issued its reasons for that decision to the

[97] European Union's letter to the Panel, dated 4 March 2014, para. 1.

parties on 18 September 2014, explaining that the Washington State tax measures, as amended by SSB 5952, are outside the Panel's terms of reference. The text of this ruling appears in Section 7.7 of this Report.

7.2 Washington state and local measures

7.5. The European Union's claims in this proceeding cover, among other measures, five tax measures enacted by the State of Washington or its municipalities, each of which was challenged and found to be a specific subsidy in the original proceeding:

a. Washington State B&O tax rate reduction for the aerospace industry;

b. Washington State B&O tax credits for preproduction/aerospace product development;

c. Washington State B&O tax credit for property taxes;

d. Washington State sales and use tax exemptions for computer software, hardware, and peripherals; and

e. City of Everett B&O tax rate reduction.

7.6. The European Union also identifies two additional measures enacted by the State of Washington that have come into existence since the end of the reference period in the original proceeding (i.e. the end of 2006). These two measures are:

a. Washington State B&O tax credit for leasehold excise taxes granted pursuant to House Bill 2466 (HB 2466)[98]; and

b. the establishment and operation of the Washington State Joint Center for Aerospace Technology Innovation (JCATI).[99]

7.7. The United States requests rulings that the Washington measures that were challenged by the European Communities in the original proceeding, other than the Washington State B&O tax rate reduction in subparagraph (a) of paragraph 7.5 above, are outside the scope of this compliance proceeding on the basis that those measures, while found to constitute specific subsidies, were not found to have caused adverse effects and therefore were not subject to the DSB recommendations and rulings.

7.8. The United States also objects to the inclusion of the Washington State B&O tax credit for leasehold excise taxes and the JCATI measure within the scope of this proceeding on the basis that those measures are neither declared measures taken to comply, nor have they been demonstrated to constitute "undeclared" measures taken to comply on the basis of their close nexus in terms of nature, effects, and timing, with any declared measures taken to comply, or with the DSB recommendations and rulings.

7.9. Although the European Union's submissions present the Washington State B&O tax credit for leasehold excise taxes as a separate measure from the Washington State B&O tax credit for property taxes, HB 2466 in fact modifies the scope of application of the B&O tax credit previously available with respect to property taxes, to additionally be available with respect to leasehold excise taxes.[100] Another Washington measure that was challenged in the original proceeding;

[98] European Union's first written submission, para. 491. This measure, while presented in the European Union's first written submission as a measure distinct from the B&O tax credit for property taxes, was enacted under House Bill 2466 (HB 2466) as an expansion of the B&O tax credit on property taxes. The European Union alleges that the United States maintains the Washington State B&O tax credit for leasehold excise taxes and that this subsidy contributes to present adverse effects when it is "aggregated" with other subsidies that operate through a price causal mechanism, and when the effects of those subsidies are "cumulated".

[99] European Union's first written submission, para. 541.

[100] HB 2466 section 10 provides as follows:

> Sec. 10. RCW 82.04.4463 and 2005 c 514 s 501 are each amended to read as follows:

namely, the Washington State B&O tax credits for preproduction/aerospace product development, was similarly modified by section 7 of Washington State Substitute Senate Bill 6828 (SSB 6828) to expand: (a) the application of the tax credits to all aerospace product development, rather than just preproduction development; and (b) the eligible entities/persons that may claim the credit (so as to permit non-manufacturing entities to claim the credit for expenditures after 30 June 2008).[101] The modifications to the Washington State B&O tax credit measures expand the availability of those tax credits and thus the existing original measures. In the circumstances, it seems somewhat artificial to analyse these modifications on the basis that they are "new" measures, separate from the original measures that they modify.[102]

7.10. Therefore, in our analysis of the United States' objections to the inclusion of the Washington state and local measures within the scope of this proceeding, we treat the original B&O tax credit measure and the modification thereto as the same measure; i.e. the Washington State B&O tax credit for property taxes is as modified by HB 2466 to apply to leasehold excise taxes, and the Washington State B&O tax credits for preproduction/aerospace product development are as modified by section 7 of SSB 6828.[103]

7.2.1 Whether the four original Washington tax measures are outside the scope of this proceeding

7.11. The United States' makes preliminary rulings requests concerning three tax measures maintained by the State of Washington and one tax measure maintained by the City of Everett (the four original Washington tax measures):

a. Washington State B&O tax credits for preproduction/aerospace product development;

b. Washington State B&O tax credit for property taxes;

c. Washington State sales and use tax exemptions for computer software, hardware, and peripherals; and

d. City of Everett B&O tax rate reduction.

> (1) In computing the tax imposed under this chapter, a credit is allowed for property taxes and leasehold excise taxes paid during the calendar year.
> (2) The credit is equal to:
> (a)(i) (A) Property taxes paid on new buildings, and land upon which this property is located, built after December 1, 2003, and used exclusively in manufacturing commercial airplanes or components of such airplanes; and
> (B) Leasehold excise taxes paid with respect to a building built after January 1, 2006, the land upon which the building is located, or both, if the building is used exclusively in manufacturing commercial airplanes or components of such airplanes … .

(House Bill 2466, sections 10(1) and (2)(a)(i)(B) (2006), (Exhibit EU-439), section 10 (underlining original))

The Final Bill Report for HB 2466 also characterized the B&O tax credit for leasehold excise taxes as being an expansion of the original tax credit for property taxes:

> The B&O tax credit for property taxes paid on property used in the manufacture of commercial airplanes and airplane components is expanded to include leasehold excise taxes. The credit starts January 1, 2007.

(Summary of the Final Bill Report for House Bill 2466 (C 177 L 06), 1 January 2007, (Exhibit EU-436))

[101] Substitute Senate Bill 6828, "Aerospace Tax Incentives", Washington Session Laws 365 (2008), (Exhibit EU-434). See European Union's first written submission, para. 450.

[102] For example, the European Union has argued that the Washington State B&O tax credit for leasehold excise taxes is within the scope of this proceeding as a measure taken to comply on the basis of its close nexus to the measure prior to its amendment, or to the DSB recommendations and rulings.

[103] We therefore do not regard as being on point the United States' objection that the Washington State B&O tax credit for leasehold excise taxes is not within the scope of this proceeding because the European Union has failed to demonstrate that this "measure" meets the requirements of the close nexus test. (See United States' second written submission, paras. 80-84). Given the Panel's view that this so-called measure is in fact a modification to extend the scope of the original Washington State B&O tax credit for property taxes, we do not consider that the European Union was required to demonstrate that the modification as a standalone new measure satisfies the requirements of the close nexus test.

7.12. All four original Washington tax measures were previously challenged as actionable subsidies in the original proceeding, however, none was found to cause serious prejudice, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement. Consequently, none of these measures was subject to the DSB recommendations and rulings.

7.13. In this proceeding, the European Union alleges that each of these measures is a specific subsidy, that the United States continues to maintain these subsidy programmes, and that they cause adverse effects to the European Union's interests.[104] The United States requests preliminary rulings that the four original Washington tax measures are outside the scope of the compliance proceeding because the original panel had found that these measures did not cause serious prejudice, and that finding was not disturbed by the Appellate Body.[105]

7.2.1.1 Main arguments of the parties and third parties

7.14. The United States argues that the four original Washington tax measures are outside the scope of this compliance proceeding because they existed and were challenged on the merits in the original proceeding. They are accordingly not measures taken to comply with the DSB recommendations and rulings. The United States notes that Article 21.5 of the DSU provides for panel proceedings "{w}here there is disagreement as to the … consistency with a covered agreement of measures taken to comply with the recommendations and rulings" of the DSB. The United States submits that the "negative implication of this charging" is that Article 21.5 does not provide relief for disagreements about other types of measures, referring to the Appellate Body in *Canada – Aircraft (Article 21.5 – Brazil*):

> Proceedings under Article 21.5 do not concern just *any* measure of a Member of the WTO; rather, Article 21.5 proceedings are limited to those "measures *taken to comply* with the recommendations and rulings" of the DSB. In our view, the phrase "measures taken to comply" refers to measures which have been, or which should be, adopted by a Member to bring about compliance with the recommendations and rulings of the DSB.[106]

7.15. The United States argues that the Appellate Body has "defined" the term "measure taken to comply" to refer, *inter alia*, to "measures which have been, or which should be, adopted by a Member to bring about compliance with the recommendations and rulings of the DSB".[107] According to the United States, a measure that existed and was in fact unsuccessfully challenged on the merits in the original proceedings cannot be a measure adopted by a Member to bring about compliance with the DSB recommendations and rulings.[108] Accordingly, claims that those measures are inconsistent with the covered agreements are not properly within the terms of reference of a compliance panel.

7.16. Moreover, the United States submits that expanding the terms of reference of a compliance proceeding to include claims against measures on which the complaining party did not prevail on the merits in the original proceeding would seriously prejudice the responding party's interests. After the DSB adopts its recommendations and rulings in the original proceeding, the responding party has no reason to consider that it should modify or withdraw measures considered on the

[104] European Union's first written submission, para. 429. The European Union also claims that each of these measures is a prohibited subsidy within the meaning of Article 3 of the SCM Agreement and is inconsistent with Article III:4 of the GATT 1994. The United States has also raised preliminary objections pertaining to the European Union's claims under Article 3 of the SCM Agreement and Article III:4 of the GATT 1994, including with respect to the Washington state and local measures. We discuss the United States' objections to the inclusion of those claims within the scope of this proceeding in Section 7.6 of this Report.

[105] United States' first written submission, paras. 77, 494, and 499.

[106] United States' second written submission, para. 14 (referring to Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36; quoted also in Appellate Body Report *US – Zeroing (EC) (Article 21.5 – EC*), para. 199). (emphasis original)

[107] United States' first written submission, fn 796; response to Panel question No. 3, para. 12 (referring to Appellate Body Reports, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36; and *US – Softwood Lumber IV (Article 21.5 – Canada*), para. 77).

[108] See United States' response to Panel question No. 3, para. 13: "by definition a measure that existed *at the time when* the original panel was established and was not subject to any DSB recommendation is not a measure 'taken to comply' with any DSB recommendations" (emphasis original). See also United States' second written submission, para. 15; response to Panel question No. 3, para. 12; and comments on the European Union's response to Panel question No. 3, para. 23.

merits and not found to be WTO-inconsistent. An overly expansive reading of Article 21.5 would require responding parties to either assume that a compliance panel would reverse the DSB findings with respect to a measure, or risk potential countermeasures with no opportunity for a reasonable period of time in which to come into compliance.[109]

7.17. The United States rejects the European Union's attempt to distinguish between the "instances of application" of the relevant subsidy programmes that were challenged in the original proceeding and the "instances of application" of those programmes presently being challenged in order to argue that the measures are within the scope of this proceeding.[110] The United States regards the four original Washington tax "measures" that were before the original panel and the "measures" that the European Union is seeking to challenge now as being one and the same – there is no basis for treating "subsequent instances of application" of a measure as a separate measure.[111]

7.18. The United States further rejects the European Union's assertion that the four original Washington tax measures are within the Panel's terms of reference on the basis of their close nexus to the Washington State B&O tax rate reduction.[112] According to the United States, the basis of the European Union's assertion is flawed because the four original Washington tax measures cannot be measures taken to comply: These measures existed at the time when the original panel was established and were not subject to any DSB recommendation or ruling. A panel cannot find that a measure unsuccessfully challenged on the merits in the original proceeding constitutes a measure taken to comply on the basis of the close nexus test.[113]

7.19. The European Union rejects the United States' objection that the four original Washington tax measures are outside the Panel's terms of reference. The fact that the original panel did not ultimately find that these measures caused adverse effects during the particular reference period at issue does not now create an issue of jurisdiction or terms of reference.

7.20. The European Union submits that a panel's terms of reference are fixed by the complaining Member in the panel request. It is when a matter is *not* set out in the panel request in accordance with the requirements of Article 6.2 of the DSU that it is outside the panel's terms of reference and the panel does not have the authority to rule on it.[114] When a matter is properly within the jurisdiction and terms of reference of a WTO adjudicator, that adjudicator is *required* to assess and rule upon it (subject to the proper exercise of judicial economy which is not relevant for present purposes).[115]

7.21. The European Union argues that Article 21.5 of the DSU captures two types of disputes over the existence of measures taken to comply: disputes about whether a particular measure (whether an act or omission) exists, and disputes about whether a particular measure *should* exist.[116] According to the European Union, the United States has failed to ensure that the measures in question, as they are maintained and currently applied, are in conformity with WTO law. There is

[109] United States' response to Panel question No. 3, para. 14.

[110] United States' comments on the European Union's response to Panel question No. 4, para. 25 (referring to the European Union's response to Panel question No. 4, para. 35).

[111] United States' comments on the European Union's response to Panel question No. 4, para. 25; second written submission, para. 38.

[112] Although the parties in their submissions address certain of their arguments concerning the measures and claims that are within the scope of this compliance proceeding as "terms of reference" issues, as we explain in paragraph 7.2 we refer to the objections involving conformity with the requirements of Article 6.2 of the DSU as "terms of reference" objections, while the other types of objections we refer to more generally as "scope" objections.

[113] United States' response to Panel question No. 3, para. 13. According to the United States, to do so would conflict with the basic definition of a "measure taken to comply" which is "in principle … a new and different measure" (quoting from Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 41). Second written submission, paras. 74-76.

[114] European Union's second written submission, para. 17.

[115] European Union's second written submission, para. 26.

[116] European Union's opening statement at the meeting of the Panel, para. 11; second written submission, paras. 31 and 32; and European Union's comments on the United States' response to Panel question No. 1, para. 8.

thus a "disagreement" between the parties as to whether the United States is under an obligation to do so: This matter clearly falls within the scope of Article 21.5 of the DSU.[117]

7.22. The European Union argues that in the original proceeding, each of the four original Washington measures "and their relevant instances of application" was found to be a specific subsidy, and these findings were not appealed by the United States. The European Union considers that the question of whether these specific subsidy programmes "and their present instances of application cause adverse effects in a new reference period" requires consideration of changing facts in the evolving market, as well as consideration of the Appellate Body's clarification of the law on aggregation and cumulation of subsidies. Thus, the measures and the facts and evidence with regard to the "instances of application of these programmes that post-date the original proceedings" have changed. Given that these instances of application are not separable from the programmes themselves, all of the relevant measures are therefore within the scope of the compliance proceeding.[118]

7.23. In addition, the European Union argues that the four original Washington tax measures are within the scope of this proceeding based on their particularly close relationship to declared measures taken to comply and to the DSB recommendations and rulings (i.e. on the basis that they can be considered "undeclared" measures taken to comply due to their close nexus with declared measures taken to comply and the DSB recommendations and rulings in the original proceeding). The first three of the original Washington tax measures were all part of the same "overarching measure" as the Washington State B&O tax rate reduction (which was subject to the DSB recommendations and rulings); namely, House Bill 2294 (HB 2294) and the Project Olympus Master Site Agreement. The European Union argues that there is a sufficiently close nexus, in terms of nature, effects, and timing, between the first three original Washington tax measures and the Washington State B&O tax rate reduction to satisfy the close nexus test and bring the first three original Washington tax measures within the scope of the compliance proceeding as "undeclared" measures taken to comply.[119]

7.24. As to the fourth original Washington tax measure, the City of Everett B&O tax rate reduction, the European Union argues that the nature of this measure is identical to the Washington State B&O tax rate reduction, being the same type of tax reduction enacted at the municipal rather than state level. Like the other original Washington tax measures, this measure is a tax reduction to lower Boeing's overall tax liability, it worsens the United States' existing situation of non-compliance by increasing the amount of revenue due that is foregone, and the value of the tax measure has increased subsequent to the adoption of the DSB recommendations and rulings (a factor that the European Union argues is relevant to the "timing" element of the close nexus test).[120]

7.25. Brazil argues that, while it supports a "broad approach" to determining the scope of Article 21.5 proceedings, any such approach must ensure that compliance panels not be used as a forum for a complaining Member to re-litigate issues relating to measures that were not found to be inconsistent with a covered agreement in the original proceedings or as a forum for the remand of matters that could have been (but were not) taken up by the Appellate Body in response to a request to complete the analysis.[121] Compliance proceedings should not unfairly give complainants a "second bite of the apple".[122] However, Brazil considers that, with respect to claims that were not definitively resolved in the original proceeding, a distinction may need to be made between matters for which the Appellate Body was asked to fully consider the issues but was unable to complete its analysis, and matters for which the complaining party did not seek full consideration.[123]

7.26. Canada considers that, as a general proposition, a complainant is prohibited from re-litigating matters that were decided and lost on the merits in the original proceedings.[124]

[117] European Union's second written submission, paras. 32 and 48.
[118] European Union's response to Panel question No. 4, paras. 34 and 35; second written submission, paras. 55 and 78.
[119] European Union's second written submission, paras. 126,127, 130, and 133.
[120] European Union's second written submission, paras. 126, 129, 132, and 133.
[121] Brazil's third-party submission, para. 35; third-party response to Panel question No. 1, para. 5.
[122] Brazil's third-party response to Panel question No. 1, para. 5.
[123] Brazil's third-party response to Panel question No. 1, para. 6.
[124] Canada's third-party response to Panel question No. 1, paras. 4 and 6.

Specifically, claims in which the complainant did not establish a *prima facie* case, or where there was a finding of WTO-consistency are outside the scope of compliance proceedings.[125] However, Canada also considers that claims should not be excluded where the original panel or Appellate Body exercised judicial economy, or was unable to complete the analysis.[126] In either situation, the merits of the claim have not been decided and the respondent should thus not have an expectation of finality of the decision.[127]

7.27. Japan, while noting that the scope of Article 21.5 proceedings is not limited to a measure declared by the implementing Member to be a measure taken to comply, submits that the scope of claims that may be raised is not "unbounded". Japan takes the general position that allowing re-litigation of issues that were the subject of the original proceedings, or otherwise providing the complainant with an "unfair second chance", should be avoided.[128] Like Canada, Japan points to the specific situation of a complainant failing to establish a *prima facie* case, or a finding of WTO consistency, as examples of situations in which claims are outside the scope of compliance proceedings.[129]

7.28. Korea points out that Article 21.5 of the DSU operates to provide a prompt and efficient forum for addressing *any* claims that were not, for whatever reason, finally resolved in the original proceedings.[130] Korea emphasizes in particular that the requirement of "unconditional acceptance" of a panel or Appellate Body report only precludes a party from re-litigating those issues that were "actually addressed" and "finally decided by the panel or Appellate Body".[131]

7.2.1.2 Evaluation by the Panel

7.29. The United States' requests raise the question of whether each of the four original Washington tax measures is within the scope of this compliance proceeding, notwithstanding that there were no DSB-adopted recommendations and rulings in relation to these measures in the original proceeding.

7.30. It is well settled that Appellate Body findings and unappealed panel findings that are adopted by the DSB must be regarded as a final resolution to a dispute between the parties in respect of the particular claim and the specific component of the measure that is the subject of that claim.[132] The Appellate Body based this conclusion on its analysis of the relevant provisions of the DSU:

> Thus, a reading of Articles 16.4 and 19.1, paragraphs 1 and 3 of Article 21, and Article 22.1, taken together, makes it abundantly clear that a panel finding which is not appealed, and which is included in a panel report *adopted* by the DSB, must be accepted by the parties as a *final* resolution to the dispute between them, in the same way and with the same finality as a finding included in an Appellate Body Report adopted by the DSB – with respect to the particular claim and the specific component of the measure that is the subject of the claim. [133]

With respect to Article 21.5 of the DSU, the Appellate Body stated:

> Article 21.5 advances the purpose of achieving a prompt settlement of disputes by providing an expeditious procedure to establish whether a Member has fully complied with the recommendations and rulings of the DSB. … It would be incompatible with the function and purpose of the WTO dispute settlement system if a claim could be reasserted in Article 21.5 proceedings after the original panel or the Appellate Body has made a finding that the challenged aspect of the original measure is *not* inconsistent with WTO obligations, and that report has been adopted by the DSB. At

[125] Canada's third-party statement, para. 4; third-party response to Panel question No. 1, para. 5.
[126] Canada's third-party response to Panel question No. 1, para. 8.
[127] Canada's third-party response to Panel question No. 1, para. 8.
[128] Japan's third-party response to Panel question No. 1, para. 4.
[129] Japan's third-party response to Panel question No. 1, para. 1.
[130] Korea's third-party submission, para. 13.
[131] Korea's third-party submission, para. 12; third-party statement, paras. 6-8.
[132] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India)*, para. 93.
[133] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India)*, para. 93. (emphasis original)

> some point, disputes must be viewed as definitely *settled* by the WTO dispute settlement system.[134]

7.31. In *EC – Bed Linen (Article 21.5 – India*), the original panel found that the complaining party had failed to make a *prima facie* case with respect to its challenge to an element of a measure that remained unchanged in the compliance proceeding. The complaining party had not appealed the panel's finding that it had failed to make a *prima facie* case, and that finding formed part of the panel report adopted by the DSB. In those circumstances, the complaining party could not raise the same claim against the same aspect of the implementation measure in the compliance proceeding.[135]

7.32. The Appellate Body has also referred to the "due process concerns" if a complaining party were provided, through an Article 21.5 proceeding, an unfair "second chance" to make a case it had failed to make in the original proceedings, in a manner that would compromise the finality of the DSB recommendations and rulings.[136]

7.33. However, the Appellate Body has permitted complaining parties in compliance proceedings to reassert claims against aspects of measures where such claims were unsuccessfully asserted in the original proceeding. It appears to us that the Appellate Body has done so in situations where the finality of the DSB recommendations and rulings would not thereby be compromised. Thus, a complaining party in a compliance proceeding was able to reassert claims against aspects of measures that were unchanged from those unsuccessfully challenged in the original proceedings, where the original panel had exercised judicial economy with respect to one challenged aspect of an original measure, that aspect had become an integral part of the measure taken to comply, and the challenge was to that same aspect of the measure taken to comply.[137] The Appellate Body distinguished this situation from one in which the complaining party had been unsuccessful in the original proceedings, either because that aspect of the measure had been found WTO-*consistent*, or the complaining party had failed to make out a *prima facie* case.

7.34. Similarly, a complaining party in a compliance proceeding was permitted to challenge the same aspect of a measure taken to comply that it had unsuccessfully challenged on appeal in the original proceeding owing to a reversal of the panel's finding by the Appellate Body in favour of the complaining party, but an inability of the Appellate Body to complete the analysis due to insufficient factual findings or undisputed facts on record.[138]

7.35. Our review of the case law suggests that, while panels and the Appellate Body have been careful not to permit complaining parties to use Article 21.5 proceedings as an opportunity to re-litigate issues that were resolved adversely to them in the original proceeding, this does not apply where the failure to achieve a definitive resolution of a claim cannot reasonably, in the circumstances, be laid at the feet of the complaining party. The Appellate Body has no power to remand a decision back to a panel to apply a corrected interpretation of the law to the facts. Moreover, in certain situations, the Appellate Body may simply be unable to complete the analysis by applying that corrected interpretation to the panel's factual findings or undisputed factual material on the record. In these circumstances, while a complaining party may in some senses have been "unsuccessful" in establishing its claims at the end of the compliance proceeding, it is more accurate to consider the claims unresolved. To permit a complaining party to seek resolution of those unresolved claims as part of a compliance proceeding does not necessarily afford it an unfair second chance.

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[134] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 98. (italics original, underlining added, fn omitted)

[135] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 96.

[136] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 210:

> Because adopted panel and Appellate Body reports must be accepted by the parties to a dispute, allowing a party in an Article 21.5 proceeding to re-argue a claim that has been decided in adopted reports would indeed provide an unfair "second chance" to that party.

(fn omitted)

See also Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 428.

[137] Appellate Body Report, *US – Oil Country Tubular Goods Sunset Reviews (Article 21.5 – Argentina*), para. 150.

[138] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil*), para. 210.

7.36. We also recall that Article 3.3 of the DSU sets forth the principle that the prompt settlement of disputes is essential to the effective functioning of the WTO. The Appellate Body has stated that: "the aim of Article 21.5 of the DSU is to promote the prompt compliance with DSB recommendations and rulings and the consistency of 'measures taken to comply' with the covered agreements by making it unnecessary for a complainant to begin new proceedings and by making efficient use of the original panellists and their relevant experience."[139]

7.37. The United States argues that the only measures susceptible to review in compliance proceedings are original measures in respect of which there are DSB-adopted recommendations and rulings, and measures properly characterized as being measures taken to comply with the DSB recommendations and rulings (whether declared by the responding party or "undeclared"). The United States says that in *Canada – Aircraft (Article 21.5 – Brazil*), the Appellate Body defined the phrase "measures taken to comply" in Article 21.5 of the DSU in a manner which logically prevents original measures from falling within the scope of a compliance proceeding under Article 21.5 of the DSU.

7.38. In *Canada – Aircraft (Article 21.5 – Brazil)*, the Appellate Body said:

> Proceedings under Article 21.5 do not concern just *any* measure of a Member of the WTO; rather, Article 21.5 proceedings are limited to those "measures *taken to comply* with the recommendations and rulings" of the DSB. In our view, the phrase "measures taken to comply" refers to measures which have been, or which should be, adopted by a Member to bring about compliance with the recommendations and rulings of the DSB. In principle, a measure which has been "taken to comply with the recommendations and rulings" of the DSB will *not* be the same measure as the measure which was the subject of the original dispute, so that, in principle, there would be two distinct and separate measures: the original measure which *gave rise* to the recommendations and rulings of the DSB, and the "measures taken to comply" which are – or should be – adopted to *implement* those recommendations and rulings.[140]

7.39. In explaining the meaning of the phrase "measures taken to comply", in the above-referenced passage from its report in *Canada – Aircraft (Article 21.5 – Brazil*), the Appellate Body did not set forth a definitive list of measures that may properly be considered to be within the scope of proceedings brought under Article 21.5 of the DSU. Rather, the Appellate Body's statement that in principle, a measure taken to comply will not be the same as the measure challenged in the original proceeding, explained why the panel, in reviewing the consistency of the implementation measure in that compliance proceeding, was not confined to examining its consistency with the relevant provisions of the WTO agreements from the perspective of the reasoning adopted by the original panel when it had reviewed the original measure and found it to be WTO-inconsistent. The Appellate Body found that the proceedings in question in that case involved the consistency of the revised programme (i.e. a new measure) with Article 3.1(a) of the SCM Agreement.[141] The Appellate Body sought to explain why, in compliance proceedings where the measure at issue is a *new* measure, the compliance panel should not confine its analysis of the consistency with the covered agreements of the measures taken to comply to the perspective of the claims, arguments and facts that related to the original measure.[142]

7.40. As the European Union observes, the Appellate Body has also indicated that the scope of Article 21.5 proceedings includes disagreements as to the existence of measures taken to comply,

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[139] See Appellate Body Report, *US – Oil Country Tubular Goods Sunset Reviews (Article 21.5 – Argentina*), para. 151. We further note that in two cases in which a complaining party in a compliance proceeding was permitted to reassert claims against unchanged aspects of original measures incorporated into a measure taken to comply, and which had not been definitively resolved on the merits in the original proceeding, one of the justifications advanced by the Appellate Body was that it would not be efficient for a new panel to examine those claims, while other aspects of the same measure were being considered by the compliance panel. (See Appellate Body Reports, *US – Oil Country Tubular Goods Sunset Reviews (Article 21.5 – Argentina*), para. 151; and *US – Upland Cotton (Article 21.5 – Brazil*), para. 212).

[140] Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36. (emphasis original, fns omitted)

[141] Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 37.

[142] Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 41.

including situations where the responding party has failed to adopt implementing measures.[143] In other words, Article 21.5 proceedings clearly encompass situations in which the responding party arguably *should have* revised an original measure, even if it did not. That being so, it is difficult to sustain the United States' argument that an original measure is, logically and by definition, outside the scope of a compliance proceeding.

7.41. In our view, the relevant issue is not whether original measures are *per se* outside the scope of a compliance proceeding because original measures not the subject of DSB recommendations and rulings can never logically be measures taken to comply. Rather, the issue is in which circumstances a complaining party may, in a compliance proceeding, pursue claims against original measures that it had pursued in the original proceedings. The answer depends on the way in which the claim against the particular original measure was resolved in the original proceeding. More specifically, as we have explained in paragraph 7.35 above, a panel should consider whether the original measure was "unsuccessfully" challenged on the merits in the original proceeding, such that it cannot be raised again without compromising the finality of the DSB recommendations and rulings.[144]

7.42. Accordingly, in determining whether the European Union may reassert claims against any of the four original Washington tax measures in this proceeding, we will examine the status of the claims in respect of those measures at the conclusion of the original proceedings. If there was a positive finding that the particular measure was "not inconsistent" with the challenged provision of the covered agreements, then on the basis of *EC – Bed Linen (Article 21.5 – India*), the European Union would be precluded from reasserting the same claims against the such measures in this proceeding. This is because to allow it to do so would compromise the finality of the DSB recommendations and rulings.

7.43. We begin by recalling that all four original Washington tax measures were found by the panel in the original proceeding to be specific subsidies.[145] None of these findings was disturbed on appeal. Although the original panel found that none of the four original Washington tax measures caused serious prejudice, these findings were reversed on appeal owing to faults that the Appellate Body found with aspects of the panel's assessment of serious prejudice. We set forth in some detail below how the Appellate Body's modification of the panel's reasoning, in the context of the three LCA product markets at issue, ultimately affected whether any of the four original Washington tax measures could be definitively considered *not* to have caused serious prejudice in any of the LCA product markets. Based on those conclusions, we then determine whether a consideration of the same measures in this proceeding would compromise the finality of the DSB recommendations and rulings.

7.44. The European Communities argued in the original proceeding that the Washington State B&O tax credits for preproduction/aerospace product development, the Washington State B&O tax credit for property taxes and the Washington State sales and use tax exemptions for computer software, hardware, and peripherals, as "untied" subsidies, operated to increase Boeing's non-operating cash flow.[146] The panel found that these subsidies, when aggregated with the other subsidies that operated to increase Boeing's non-operating cash flow, were of an insufficient magnitude to have had any appreciable impact on Boeing's LCA prices, and thus on sales or prices

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[143] Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36:

> In our view, the phrase "measures taken to comply" refers to measures which have been, or which should be, adopted by a Member to bring about compliance with the recommendations and rulings of the DSB.

(emphasis added)

[144] We note that the United States' argument is that "a measure that was in existence at the time of the establishment of the original panel, and that was unsuccessfully challenged on the merits in the original proceeding, cannot constitute a measure taken to comply." (See United States' response to Panel question No. 3, para. 12 (emphasis added)). See also United States' second written submission, para. 15; and comments on the European Union's response to Panel question No. 4, para. 23.

[145] The panel findings in relation to the existence of a subsidy and specificity are in Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.179, 7.212, 7.302, 7.333, and 7.346.

[146] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1609. By "untied" subsidies, the Panel refers to subsidies the receipt of which is not contingent on the production or sale of a particular product on a per-unit basis. Such subsidies may be contrasted with "tied" subsidies, which in the context of this dispute, refer to subsidies the receipt of which is contingent on the production or sale of a particular product on a per-unit basis. (See paras. 9.68-9.71 below). See also Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1339.

of Airbus LCA.[147] Therefore, at the panel stage, none of those three Washington tax measures was found to cause serious prejudice in any LCA product market.

7.45. The European Communities further argued that the City of Everett B&O tax rate reduction, as a subsidy that was tied on a per-unit basis to the production or sale of LCA manufactured in Everett (and therefore applied to the 777 and 787 families of LCA), operated to reduce Boeing's marginal unit costs of production and sale of LCA.[148] The panel found that the effect of the City of Everett B&O tax rate reduction (when aggregated with the other tied tax subsidies that operated to reduce Boeing's marginal unit costs, i.e. the FSC/ETI subsidies and the Washington State B&O tax rate reduction) was significant price suppression, significant lost sales, and displacement and impedance of exports in the 300-400 seat LCA product market. The panel declined to aggregate the effects of the tied tax subsidies (i.e. the Washington State and City of Everett B&O tax rate reductions, since FSC/ETI did not apply to 787 sales) with those of the aeronautics R&D subsidies in the 200-300 seat LCA product market on the basis that the tied tax subsidies and the aeronautics R&D subsidies operated through distinct causal mechanisms.[149] Considered separately from the effects of the aeronautics R&D subsidies in the 200-300 seat LCA product market, the effects of the City of Everett B&O tax rate reduction (and the Washington State B&O tax rate reduction) would not have had such an effect on Boeing's 787 pricing as to cause serious prejudice to Airbus in the 200-300 seat LCA product market. Thus at the panel stage, the City of Everett B&O tax rate reduction was found to have caused serious prejudice in the 300-400 seat LCA product market, but not in the 200-300 seat LCA product market.

7.46. On appeal, the Appellate Body first dealt with the United States' appeals of the panel's findings that: (a) the FSC/ETI subsidies and Washington State B&O tax rate reduction caused serious prejudice in the 100-200 seat LCA product market; and (b) the FSC/ETI, Washington State B&O tax rate reduction and City of Everett B&O tax rate reduction caused serious prejudice in the 300-400 seat LCA product market. The Appellate Body reversed the panel's findings on the ground that the panel had not provided a proper legal basis for them.[150] It then attempted to complete the analysis with the following results:

a. the FSC/ETI subsidies and Washington State B&O tax rate reduction, in two LCA sales campaigns, caused serious prejudice in the 100-200 seat LCA product market[151];

b. it was not possible to complete the analysis of the effects of the FSC/ETI subsidies, Washington State B&O tax rate reduction and City of Everett B&O tax rate reduction in the 300-400 seat LCA product market because the panel had not engaged with the evidence concerning the "other factors" that the United States alleged had attenuated the causal link between the subsidies and the adverse effects.[152]

7.47. The Appellate Body then dealt with the European Union's appeals.[153] In short, it reached the following outcomes:

a. As to the European Union's appeal that the panel failed to assess collectively the effects of the Washington State and City of Everett B&O tax rate reductions with the effects of the aeronautics R&D subsidies:

   i. The panel erred in failing to consider whether the price effects of the Washington State and City of Everett B&O tax rate reductions could be cumulated with (i.e. complemented and supplemented) the technology effects of the aeronautics R&D subsidies in causing serious prejudice in the 200-300 seat LCA product market. The European Union did not request completion of the analysis on this issue.[154]

[147] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1834.
[148] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1608.
[149] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1824.
[150] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1249.
[151] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1274.
[152] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1268.
[153] The two specific alleged errors of law are described in Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1275.
[154] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1321.

b. As to the European Union's appeal that the Panel failed to assess collectively the effects of the tied tax subsidies and the effects of the untied subsidies (including the first three original Washington tax measures listed in paragraph 7.11 above):

i. The panel erred in failing to consider whether the effects of the "untied" subsidies (including the first three original Washington tax measures listed in paragraph 7.11 above) could be cumulated with (i.e. complemented and supplemented) the price effects of the tied tax subsidies in the 100-200 seat LCA product market.[155] On completing the analysis for the 100-200 seat LCA product market (which was the only LCA product market in which the Appellate Body had found the tied tax subsidies caused adverse effects, because it had been unable to complete the analysis in the 300-400 seat LCA product market), the Appellate Body found:

ii. neither the Washington State B&O tax credits for preproduction/aerospace product development, nor the Washington State sales and use tax exemptions for computer software, hardware, and peripherals appeared to be received in connection with expenditures related to the 737NG and thus did not have effects in the 100-200 seat LCA product market[156];

iii. as the European Union's submissions revealed that the Washington State B&O tax credit for property taxes benefits only the 787, the Appellate Body did not attempt to cumulate the effects of this subsidy with the effects of the tied tax subsidies in the 100-200 seat LCA product market.[157]

7.48. In sum, at the conclusion of the original proceeding, as a result of the Appellate Body's reversal of various panel findings, its completion of the analysis in some instances and its inability to complete the analysis in others (or the failure of the European Union to request completion of the analysis), none of the four original Washington tax measures was found to cause serious prejudice to the European Union's interests, within the meaning of Articles 5(c), 6.3(b), and 6.3(c) of the SCM Agreement.

7.49. Although none of the four original Washington tax measures was found to cause serious prejudice at the conclusion of the original proceedings, in many cases, this was because the Appellate Body did not complete the analysis fully for all relevant LCA product markets, either because it was unable to, or because it was not requested to do so. It was not because the four original Washington tax measures were adjudged on the merits, for all of the relevant LCA product markets, *not* to have caused serious prejudice.

7.50. In fact, had the Appellate Body been able to complete the analyses, it was potentially open for it to have found that the City of Everett B&O tax rate reduction, the Washington State B&O tax credits for preproduction/aerospace product development and the Washington State sales and use tax exemptions for computer software, hardware, and peripherals, caused serious prejudice.[158] The only original Washington tax measure that arguably may not have been found to have caused

[155] The 100-200 seat LCA product market was the only product market in which the Appellate Body had found the tied tax subsidies caused adverse effects, because it had been unable to complete the analysis in the 300-400 seat LCA product market.

[156] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1344-1346.

[157] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1341.

[158] The City of Everett B&O tax rate reduction could have been found to have caused serious prejudice in the 300-400 seat LCA product market except that the Appellate Body had been unable to complete the analysis of whether the effects of the tied tax subsidies (including the City of Everett B&O tax rate reduction) had caused serious prejudice, owing to the existence of disputed facts in the LCA sales campaigns in the 300-400 seat LCA market. The Washington State B&O tax credits for preproduction/aerospace product development, as well as the Washington State sales and use tax exemptions for computer software, hardware, and peripherals could have been found to have caused serious prejudice in the 300-400 seat LCA product market if the Appellate Body had been able to complete the analysis with respect to the effects of the tied tax subsidies in the 300-400 seat market (and had found that the tied tax subsidies did cause serious prejudice) and then that the effects of these two original Washington measures "complemented and supplemented" the effects of the tied tax subsidies in that product market. In addition, the price effects of the City of Everett B&O tax rate reduction could have been found to have "complemented and supplemented" the technology effects of the aeronautics R&D subsidies in the 200-300 seat LCA product market, and thus caused serious prejudice in that product market, except that the European Union did not request the Appellate Body to complete the analysis on this issue.

serious prejudice on the basis of the Appellate Body's ruling is the Washington State B&O tax credit for property taxes. This B&O tax credit (which was part of the group of "untied" or "remaining" subsidies) benefited only the 787 and thus, applying the Appellate Body's reasoning, would only potentially have had effects in the 200-300 seat LCA product market.[159] The European Union did not allege that the panel erred in not collectively assessing (whether by "aggregation" or "cumulation") the effects of the "untied" subsidies with the aeronautics R&D subsidies.[160]

7.51. As explained above, the Appellate Body overruled the panel's approach to assessing whether the four original Washington tax measures listed in paragraph 7.11 above caused serious prejudice, but could not complete the analyses. Therefore, the Appellate Body did not find that, for every possible LCA product market, the European Union had failed to demonstrate that the measures caused serious prejudice. Thus, at the conclusion of the appeal process, there cannot be said to be findings that any of the four original Washington tax measures was "not inconsistent" with Articles 5(c) and 6.3 of the SCM Agreement for all LCA product markets.

7.52. In the particular circumstances of the outcome of the European Communities' original serious prejudice claims against these measures, and particularly the fact that the European Union successfully appealed the panel's failure to collectively assess the effects of the tied tax subsidies with the aeronautics R&D subsidies, and the effects of the untied subsidies with the tied tax subsidies, we consider that the reassertion of claims in respect of the original Washington tax measures would not compromise the finality of the DSB recommendations and rulings, or amount to an unfair second chance.[161]

7.53. On the basis of the foregoing, we consider that the European Union is not precluded from reasserting claims in respect of the four original Washington tax measures in this compliance proceeding. **The Panel therefore rejects the United States' requests for rulings that the four original Washington tax measures are outside the scope of this compliance proceeding.**

7.2.2 Whether the Washington State Joint Center for Aerospace Technology Innovation measure is outside the scope of this proceeding

7.54. In its panel request, the European Union makes claims in respect of the establishment by the State of Washington and its political subdivisions of a Joint Center for Aerospace Technology Innovation (JCATI) which it alleges is a specific subsidy to Boeing. The United States argues that the JCATI is not a declared measure taken to comply, nor does it share a close nexus to a declared measure taken to comply or to the DSB recommendations and rulings.[162] Accordingly, the United States considers that this measure is outside the scope of this proceeding and requests a preliminary ruling to that effect.[163]

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[159] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1341.

[160] However, the European Union did successfully appeal: (a) the panel's failure to assess collectively the effects of the tied tax subsidies (i.e. the Washington State and City of Everett B&O tax rate reductions) with the technology effects of the aeronautics R&D subsidies; and (b) the panel's failure to assess collectively the effects of the "untied" subsidies with the effects of the tied tax subsidies (including the Washington State and City of Everett B&O tax rate reductions). If the European Union had requested completion of the analysis on (a), then the Appellate Body potentially could have found that the effects of the City of Everett B&O tax rate reduction complemented and supplemented the effects of the aeronautics R&D subsidies in the 200-300 seat LCA product market. Since the Appellate Body also thought that the panel should have collectively assessed the effects of the tied tax and "untied" subsidies, it was theoretically possible that the effects of the Washington State B&O tax credit for property taxes (as well as the two other "untied" original Washington tax subsidies) could have been found to have complemented and supplemented the effects of the tied tax subsidies in the 200-300 seat LCA product market.

[161] In the circumstances of the multiple appeals concerning the panel's collective assessment of the subsidies in its serious prejudice analysis, we also do not consider it would be reasonable to conclude that the Washington State B&O tax credit for property taxes are outside the scope of the proceeding owing to the European Union's failure to request completion of the analysis of the collective assessment of the tied tax and aeronautics R&D subsidies.

[162] United States' first written submission, para. 513; second written submission, para. 77.

[163] United States' first written submission, para. 76.

7.2.2.1 Main arguments of the parties and third parties

7.55. The United States disputes the contention that the JCATI shares a close nexus with the Washington State B&O tax rate reduction: First, the European Union's unsupported assertion that the purpose of both measures is to convince Boeing to expand production in Washington says nothing about the nature of these two very different types of measures.[164] It is difficult to conceive how a programme developed to foster the education of engineering students is akin to the reduction of a B&O tax rate.[165] Second, in relation to the European Union's argument that both the JCATI and Washington State B&O tax rate reduction have the *effect* of reducing Boeing's costs of doing business in Washington State, the European Union fails to articulate a coherent theory as to how such effects would occur.[166] Moreover, the JCATI activities do not operate to negate the removal of any adverse effects relating to the Washington State B&O tax rate reduction.[167]

7.56. As to the European Union's arguments concerning the alleged nexus with the NASA and DOD aeronautics R&D measures subject to the DSB recommendations and rulings, the United States argues that the JCATI does not function like, and its activities are not similar in any meaningful way to, the measures administered by NASA and DOD.[168] Unlike the NASA and DOD aeronautics R&D measures, the JCATI coordinates the development of higher education aerospace programmes at the University of Washington and Washington State University. Its activities with industry are structured differently from those under the NASA and DOD aeronautics R&D measures; for example, JCATI funding is allocated to projects by educational institutions, not participating parties.[169] As to the alleged links in terms of *effects*, NASA awards contracts to outside entities in order to obtain research into new scientific principles while the European Union asserts that Boeing will be able to use technology developed through the JCATI to further its own LCA-related research.[170]

7.57. The European Union argues that the JCATI measure constitutes a measure taken to comply, within the scope of this proceeding, based on its close nexus with "the other Washington State subsidies subject to the DSB's recommendations and rulings", as well as with the "NASA and DOD aeronautics R&D subsidies subject to those recommendations and rulings".[171] As to the links in terms of *nature*, the European Union makes the following arguments:

a. the JCATI shares the same purpose as the Washington State B&O tax rate reduction; namely, to convince Boeing to retain and expand its production in Washington State by lowering Boeing's cost of doing business in the State. Just like the Washington State B&O tax rate reduction, the JCATI's subsidies are limited to enterprises in the aerospace industry[172]; and

b. the JCATI has the same nature as the NASA and DOD aeronautics R&D subsidies subject to the DSB recommendations and rulings because it supports Boeing's LCA-related R&D efforts and contributes to Boeing's development of, and access to, LCA-related technology.[173] Even where funding goes directly to the educational institutions involved, participating enterprises such as Boeing nevertheless receive direct support from the funded projects, and technologies owned by the universities are advanced in part through R&D funding provided through NASA's aeronautics R&D programmes and DOD's RDT&E Program.[174]

[164] United States' second written submission, para. 78.
[165] United States' first written submission, para. 515; second written submission, para. 78.
[166] United States' second written submission, para. 78.
[167] United States' first written submission, para. 515.
[168] United States' first written submission, paras. 514 and 515.
[169] United States' first written submission, para. 515; second written submission, para. 79.
[170] United States' second written submission, para. 79.
[171] European Union's first written submission, para. 541.
[172] European Union's second written submission, para. 137. The European Union refers to a press article in which the Director of the Governor's Office of Aerospace says in relation to the JCATI that the focus is now on the next aircraft Boeing will design and build after the 737 MAX. (See S. Wilhelm, "State Fires Up New Efforts to Boost Aerospace Education", *Puget Sound Business Journal*, 29 June 2012, (Exhibit EU-456)).
[173] European Union's second written submission, para. 138.
[174] European Union's first written submission, para. 527; second written submission, para. 139.

7.58. The European Union argues that the *effects* of the JCATI measure are to worsen the existing situation of non-compliance regarding the Washington State B&O tax rate reduction and the NASA and DOD aeronautics R&D subsidies by expanding the adverse effects caused by such subsidies during the new reference period.[175] The JCATI measure undermines compliance with the DSB recommendations and rulings by enabling Boeing to use the technologies and research developed through JCATI to further its own LCA-related research without paying anything in return for such goods, services and grants and by lowering Boeing's costs of doing business in Washington State.

7.59. As to *timing*, the European Union notes that the JCATI issued its first round of grant awards in February 2013, which is after the date of the DSB recommendations and rulings (23 March 2012).

7.60. Brazil considers that an Article 21.5 panel is not confined solely to examining declared measures taken to comply.[176] Where an "undeclared" measure has a sufficiently close relationship to a declared measure taken to comply, and to the DSB recommendations and rulings, it may be within the scope of Article 21.5 compliance proceedings.[177] This requires a panel to "scrutinize the links, in terms of *nature*, *effects*, and *timing*" between the respective measures.[178] Brazil considers that while an "undeclared" measure must share more than "some features" with the original measure to be considered within the scope of Article 21.5, an overly narrow approach to an Article 21.5 panel's terms of reference could undermine the effectiveness of the dispute settlement process.[179]

7.61. Canada considers that it is essential to the prompt settlement of disputes to include in the scope of Article 21.5 compliance proceedings those measures that have a "sufficiently close relationship" in "timing, nature and effects" with the declared measures taken to comply, and the DSB recommendations and rulings.[180] To do otherwise would allow a respondent to evade compliance with rulings and recommendations of the DSB.[181]

7.62. Japan considers that in order to ensure full compliance and prevent circumvention, certain "undeclared" measures taken to comply may also be included in the scope of compliance proceedings. These are those "undeclared" measures that virtually replace the declared measure taken to comply or that have "close links particularly in terms of their '*timing, nature and effects*'" with the declared measures.[182]

7.2.2.2 Evaluation by the Panel

7.63. The Joint Center for Aerospace Technology is an aerospace office created and funded by the State of Washington since July 2012. Its statutory purposes are to:

a. pursue joint industry-university research in computing, manufacturing, efficiency, materials/structures innovation, and other new technologies that can be used in aerospace firms;

b. enhance the education of students in the engineering departments of the University of Washington, Washington State University, and other participating institutions through industry-focused research; and

c. work directly with existing small, medium-sized and large aerospace firms and aerospace industry associations to identify research needs and opportunities to transfer off-the-shelf technologies that would benefit such firms.[183]

[175] European Union's second written submission, para. 140.
[176] Brazil's third-party response to Panel question No. 2, para. 3.
[177] Brazil's third-party response to Panel question No. 2, para. 3.
[178] Brazil's third-party response to Panel question No. 2, para. 3. (emphasis original)
[179] Brazil's third-party response to Panel question No. 2, para. 4.
[180] Canada's third-party response to Panel question No. 2, para. 10.
[181] Canada's third-party response to Panel question No. 2, para. 11.
[182] Japan's third-party response to Panel question No. 2, para. 12. (emphasis original)
[183] Substitute Senate Bill 5982, Washington Session Laws 1920 (2012), (Exhibit EU-459).

7.64. The JCATI is operated and administered as a multi-institutional education and research center, conducting research and development programmes in various locations within Washington under the joint authority of the University of Washington and Washington State University. The JCATI is administered by a Board of Directors appointed by the Governor with voting members as follows: one voting member each representing small aerospace firms, medium-sized firms, large aerospace firms, and labor; and two voting members each, representing aerospace industry associations and higher education. The Board is directed to work with aerospace industry associations and aerospace firms of all sizes to identify the research areas that will benefit the intermediate and long-term economic viability of the Washington aerospace industry.[184] In February 2013, the JCATI announced that it had awarded 16 projects a total of USD 1.24 million to solve technological questions important to the aerospace industry in its first round of grant awards.[185] Six of those projects involved Boeing (partnering with Washington University with respect to three and Washington State University with respect to three).[186]

7.65. The parties appear to agree that whether the JCATI measure is within the scope of this compliance proceeding depends upon whether it meets the requirements of the close nexus test and thus constitutes an "undeclared" measure taken to comply.

7.66. We recall that the close nexus test represents an attempt by panels and the Appellate Body to balance the competing interests of (a) providing a responding party with a reasonable period of time to bring its measures into conformity prior to authorization for retaliation, with (b) the efficient working of the dispute settlement system, and the importance of meaningful compliance. In striking this balance, the close nexus test looks to see whether "undeclared" measures have a "particularly close relationship" to the declared measure taken to comply, and to the DSB recommendations and rulings, such that they are susceptible to review by a compliance panel.[187] Compliance panels "scrutinize these relationships", which may, depending on the particular facts, call for an examination of the timing, nature, and effects of the various measures, as well as an examination of the "factual and legal background" against which a declared measure taken to comply is adopted. The task of a compliance panel is to determine whether there are "sufficiently close links" to be able to characterize the "undeclared" measure as being one "taken to comply" and consequently, for the panel to assess its consistency with the covered agreements in an Article 21.5 proceeding.[188] The focus or purpose of the exercise is to ascertain whether measures other than original measures, or the responding party's declared compliance actions, would in practical terms undermine or nullify the purported compliance actions with the result that a panel could not meaningfully undertake an assessment of whether there has been compliance without also considering those "undeclared" measures.

7.67. This being so, the close nexus test is not satisfied by merely identifying any links at all between the "undeclared" measure and the declared measures taken to comply or the DSB recommendations and rulings. For example, in the subsidies context, the close nexus test should not be applied in a manner that means that, once a Member is found to have granted a subsidy to a recipient that causes adverse effects, a complaining party can challenge in a compliance proceeding any subsequent financial contribution to that same recipient on the theory that it is a subsidy and will cause adverse effects.

7.68. Application of the close nexus test by previous panels and the Appellate Body provides some guidance as to the sufficiency of the links necessary in order to satisfy the close nexus test and conclude that the measure is within the scope of a compliance proceeding. We briefly discuss below the previous cases in which an "undeclared" measure was considered sufficiently closely linked to either the DSB recommendations and rulings, or to declared implementation actions taken by the responding party, that it was considered within the scope of the compliance proceeding.

[184] Substitute Senate Bill 5982, Washington Session Laws 1920 (2012), (Exhibit EU-459).

[185] JCATI Press Release, "Research Center Promotes Washington Aerospace Industry Innovation", 5 February 2012 (formerly Exhibit US-13-150), (Exhibit EU-457).

[186] JCATI Recommendations (formerly Exhibit US-13-147), (Exhibit EU-462).

[187] Appellate Body Reports, *US – Softwood Lumber IV (Article 21.5 – Canada*), para. 77; and *US – Zeroing (EC) (Article 21.5 – EC*), para. 204.

[188] Appellate Body Report, *US – Softwood Lumber IV (Article 21.5 – Canada*), para. 77.

7.69. The close nexus test was first articulated by the Appellate Body in *US – Softwood Lumber IV (Article 21.5 – Canada*) in referring with approval to the approach taken by compliance panels in two earlier cases.[189] In the first of those, *Australia – Salmon (Article 21.5 – Canada*), the compliance panel was required to determine whether Australia had complied with the DSB recommendations and rulings adopted in November 1999 regarding import restrictions on salmonid products that had been maintained through a federal quarantine proclamation. Australia announced changes to its quarantine policy in July 1999, these being measures that Australia considered brought it into full compliance with the DSB recommendations and rulings. However, in October 1999, the State of Tasmania adopted an import ban applying to the product at issue.[190] The compliance panel considered that, in the context of this dispute, at least any quarantine measure introduced by Australia subsequent to the adoption of the DSB recommendations and rulings, and within a more or less limited time thereafter, that applied to imports of fresh chilled or frozen salmon from Canada, was a measure taken to comply within the mandate of the compliance panel.[191]

7.70. The second, *Australia – Automotive Leather II (Article 21.5 – US*), concerned compliance with a DSB recommendation pursuant to Article 4.7 of the SCM Agreement, adopted in June 1999, that Australia withdraw subsidies found to be contingent on export performance, within the meaning of Article 3.1(a) of the SCM Agreement. The subsidies in question were payments under a grant contract between the Government of Australia, a recipient company and its parent company. Australia notified the DSB that it had complied with the DSB recommendations and rulings in September 1999, by requiring the recipient company to repay to the Australian Government an amount that covered any remaining WTO-inconsistent portion of the grants made under the grant contract and terminating all subsisting obligations under the grant contract. On the day after the company had repaid the prospective portion of the grant, Australia announced that it was providing a loan to the recipient's parent company, which was conditioned on the repayment of the original subsidy. The United States challenged the new loan in the compliance proceeding on the basis that it was simply a reimbursement of the non-commercial terms of the purported withdrawal of the prospective portion of the grant that was repaid by the company. The panel considered that the loan was "inextricably linked" to the steps taken by Australia to comply with the DSB recommendation, in view of both its timing and nature. The panel further reasoned that it could not exclude the loan from its consideration without severely limiting its ability to judge, on the basis of the U.S. panel request, whether Australia had taken measures to comply with the DSB recommendations and rulings.[192]

7.71. The compliance proceeding in *US – Softwood Lumber IV (Article 21.5 – Canada*), involved a pass-through analysis used by USDOC in a First Assessment Review of a Final Countervailing Duty Determination calculating the rate of subsidization of softwood lumber from Canada (the "undeclared" measure). The declared measure taken to comply was a Section 129 Determination which replaced the Final Countervailing Duty Determination, and thereby became the basis for the continued imposition of countervailing duties. The USDOC adopted the same pass-through analysis in the First Assessment Review and in the Section 129 Determination. The panel found that the pass-through analysis in the First Assessment Review was so "inextricably linked" and "clearly connected" to both the Section 129 Determination and the Final Countervailing Duty Determination as to fall within the scope of the compliance proceeding. The United States objected, noting that the Section 129 Determination (and the Final Countervailing Duty Determination that it revised) considered the existence and amount of subsidization in the original period of investigation, while the First Assessment Review was concerned with the amount of subsidization in a different period of review. Moreover, Section 129 proceedings and assessment reviews had different legal consequences, and the First Assessment Review was requested eight months before the adoption of the panel and Appellate Body reports in the original proceeding. The Appellate Body rejected the U.S. arguments. Rather, the Appellate Body considered the links between the "undeclared" measure, the declared measure taken to comply, and the DSB recommendations and rulings in terms of "subject matter", "timing", and "effects" and upheld the panel's finding that the First

[189] Appellate Body Report, *US – Softwood Lumber IV (Article 21.5 – Canada*), para. 74.

[190] Panel Report, *Australia – Salmon (Article 21.5 – Canada*), fn 141 of the preliminary ruling set forth at paras. 7.10 and 7.15.

[191] Panel Report, *Australia – Salmon (Article 21.5 – Canada*), para. 22 of the preliminary ruling set forth at para. 7.10.

[192] Panel Report, *Australia – Automotive Leather II (Article 21.5 – US*), para. 6.5.

Assessment Review, insofar as the pass-through analysis was concerned, fell within the scope of the compliance proceeding.[193]

7.72. The Appellate Body next applied the close nexus test in the context of determining whether the United States had complied with the DSB recommendations and rulings regarding the methodology of zeroing. In *US – Zeroing (EC) (Article 21.5 – EC*), the Appellate Body considered the extent to which subsequent reviews that followed 15 original anti-dumping investigations and 16 administrative reviews in the original proceeding fell within the scope of the compliance proceeding. The panel had ruled that only the subsequent reviews that came into effect after the adoption of the DSB recommendations and rulings had a sufficiently close nexus with the original measures at issue and the DSB recommendations and rulings so as to come within the scope of the compliance proceeding.[194] The European Communities appealed the panel's conclusion regarding the timing factor and exclusion of the other subsequent reviews. The Appellate Body stated that the timing of a measure is not determinative of whether it bears a sufficiently close nexus with a Member's implementation of DSB recommendations and rulings so as to fall within the scope of a compliance proceeding. As compliance can be achieved before the adoption of DSB recommendations and rulings, a compliance panel may have to review events pre-dating the adoption of those recommendations and rulings.[195] While the timing of a measure was a relevant factor to consider in determining whether it is sufficiently closely connected to a Member's implementation of the DSB recommendations and rulings, the panel's formalistic reliance on the date of issuance of subsequent reviews in determining whether they had the requisite close nexus with the DSB recommendations was found to be in error.[196]

7.73. The Appellate Body then examined whether any of the excluded subsequent reviews fell within the scope of the compliance proceeding based on a consideration of the links, in terms of nature and effects, between those measures, the declared measures taken to comply and the DSB recommendations and rulings.[197] It concluded that, with respect to the administrative reviews that had replaced assessment rates and cash deposit rates found to be WTO-inconsistent in the original proceeding with assessment rates and cash deposit rates that *continued to reflect the zeroing methodology*, there was a sufficient link, in terms of effects, with the DSB recommendations and rulings.[198] Similarly, the sunset review determinations that led to the continuation of the relevant anti-dumping duty orders (which in turn provided the legal basis for the continued imposition of assessment rates and cash deposit rates calculated with zeroing in subsequent administrative reviews) and which had continued effects after the end of the reasonable period of time, had a sufficiently close link in terms of effects with the DSB recommendations and rulings.[199]

7.74. Stepping back from the specific facts of these cases, the close nexus test appears to be fundamentally directed to the question of whether, in the specific factual and legal context of the case, it would be feasible for a panel to undertake to determine whether the responding party has complied with the DSB recommendations and rulings *without* taking into account these "undeclared" measures. Thus, in *Australia – Salmon*, it made no sense to examine whether Australia had complied with the DSB recommendations and rulings by amending its federal quarantine regulations if the compliance panel had not taken into account the fact that the state of Tasmania had imposed its own import ban very shortly thereafter. Similarly, the compliance panel in *Australia – Automotive Leather II (Article 21.5 – US*) could not sensibly have determined whether Australia had complied with the DSB recommendations and rulings by requiring the recipient to repay the grant if it had ignored the fact that the next day, a loan in a similar amount that expressly made reference to repayment of the grant had been granted to the recipient's parent company.

7.75. Although the cases involving compliance in the context of the United States' retrospective system for assessing anti-dumping and countervailing duties are complex technically, the key issue in those cases seems to be that, whatever the technical legal distinctions between original

[193] Appellate Body Report, *US – Softwood Lumber IV (Article 21.5 – Canada*), paras. 83-85 and 92.
[194] Panel Report, *US – Zeroing (EC) (Article 21.5 – EC*), paras. 8.115 and 8.121.
[195] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 224.
[196] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 226.
[197] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 229.
[198] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 231. By contrast, there was not a sufficient link, in terms of effects, with respect to excluded subsequent reviews the effects of which had been replaced by Section 129 Determinations in which zeroing was not applied. (Ibid. para. 232).
[199] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 233.

determinations and assessment reviews, if at the end of the day there would be duties imposed that reflected the WTO-inconsistency (e.g. zeroing or an impermissible pass-through methodology), the measures in question should be considered by the compliance panels, because to ignore this factor would mean that the complaining party may not truly receive the relief that it could be expected to receive in bringing its complaint and succeeding on that complaint in the original proceeding. Indeed, in these cases, a failure to take into account subsequent reviews would mean that, by the time the compliance proceeding was completed, the WTO-inconsistent reviews of a given anti-dumping or countervailing duty order would have been superseded by new reviews using the same WTO-inconsistent methodologies with respect to the same order.

7.76. We are not persuaded that the European Union has demonstrated that the JCATI measure shares sufficiently close links in terms of nature or effects, with the Washington State B&O tax rate reduction, or with the NASA and DOD aeronautics R&D subsidies subject to the DSB recommendations and rulings, to warrant its inclusion within the scope of this proceeding as an "undeclared" measure taken to comply.

7.77. The Washington State B&O tax rate reduction, enacted under HB 2294, is a reduction in the B&O tax rate for manufacturers of commercial airplanes or components of such airplanes, which was to occur in two stages from October 2005 to July 2007, or at the commencement of final assembly of a super-efficient airplane, whichever was later.[200] The B&O tax rate reduction was considered in the original proceeding to be a "tied" subsidy as it applies to the production and sale of each LCA manufactured in Washington State on a per-unit basis, increasing Boeing's after-tax revenue and profitability.[201] The JCATI measure, by contrast, is a joint industry-university research programme that seeks to pursue focused research of relevance to the aerospace industry and enhance the education of students in engineering departments of educational institutions in the State of Washington. The fact that both measures concern enterprises in the aerospace industry in the State of Washington is insufficient, in our view, to demonstrate a close nexus in terms of nature.

7.78. We also regard the JCATI measure as being insufficiently closely linked to the NASA procurement contracts and Space Act Agreements and DOD assistance instruments the subject of the DSB recommendations and rulings. These measures are multi-year R&D instruments that operated as collaborative research projects between NASA and DOD, respectively, funded through specific NASA and DOD aeronautics R&D programmes.[202] The JCATI measure will coordinate the development of higher-education aerospace programmes at certain universities in the State of Washington. As such, it appears to be significantly qualitatively different from the NASA and DOD aeronautics R&D measures the subject of the DSB recommendations and rulings. There is nothing before us to suggest that the JCATI will continue or develop R&D conducted under the NASA and DOD aeronautics R&D programmes, or that the JCATI replaces or replicates the NASA and DOD aeronautics R&D measures the subject of the DSB recommendations and rulings in a way that requires that the measure be included within the scope of this proceeding in order to enable the Panel to make a meaningful determination as to whether the United States has complied with the DSB recommendations and rulings.

7.79. The JCATI measure is not a declared measure taken to comply, nor has it been demonstrated to have a sufficiently close connection to a declared measure taken to comply, or to the DSB recommendations and rulings, to fall within the scope of this proceeding as an "undeclared" measure taken to comply. The Panel therefore grants the United States' request and rules that the JCATI measure is outside the scope of this proceeding.

7.80. **In this Section of the Report, the Panel therefore finds that the following Washington tax measures, which were the subject of a request for preliminary rulings by the United States, are <u>within</u> the scope of this proceeding:**

a. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828;

[200] Assembly of the 787 commenced in Washington in the first half of 2007 and the reduced taxation rate was set to continue until 2024.

[201] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1170 and 1252.

[202] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1709 and 7.1746.

b. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes;

c. Washington State sales and use tax exemptions for computer software, hardware, and peripherals; and

d. City of Everett B&O tax rate reduction.

7.81. **The Panel grants the United States' request for a preliminary ruling that the JCATI measure is outside the scope of this proceeding.**[203]

7.3 DOD aeronautics R&D measures

7.3.1 Background

7.82. In this Section, we address the United States' scope objections relating to the European Union's challenge to the U.S. DOD's Research, Development, Test & Evaluation (RDT&E) Program as involving specific subsidies to Boeing. By way of background, we recall that DOD's budget has historically been divided into five broad budget categories: Military Personnel; Operations & Maintenance; Procurement; Research, Development, Test & Evaluation, and Military Construction.[204] The RDT&E budget category funds research, development, test, and evaluation spending by DOD, including the three military departments of DOD (United States Army, Navy, and Air Force) and other DOD agencies, towards designing and developing military systems or technology.[205] The RDT&E budget category is a distinct category from "Procurement" which funds the actual acquisition costs of military systems that are in production.[206]

7.83. RDT&E budget activities are subdivided into a number of program elements. DOD Financial Management Regulation explains that the "program element" is the major aggregation at which RDT&E efforts are organized, budgeted, and reviewed.[207] Each program element is divided into one or more named and numbered projects, which may be further subdivided into activities.[208] Each RDT&E program element has specific program objectives expressed in the "Mission Description" statement contained in the program budgets.[209] Program elements are also identified by a particular "PE number" in the Future Years Defense Program (FYDP) budget estimates.[210]

7.84. In its panel request in this proceeding, the European Union alleges that U.S. DOD maintains subsidies benefiting U.S. LCA producers through: (a) the RDT&E Program; as well as (b) through contracts, assistance instruments, and other agreements (as modified) entered into under the

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[203] We recall that, in addition to the Washington tax measures listed in subparagraphs a through d above, which we have ruled to be within the scope of this proceeding, the European Union also brings claims in respect of the Washington State B&O tax rate reduction for the aerospace industry, which was a measure that was successfully challenged by the European Communities in the original proceeding, and is the subject of DSB recommendations and rulings.

[204] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2786; and CRA International, *U.S Department of Defense (DOD) Research, Development, Test and Evaluation (RDT&E) Funding Support to the Boeing company for Dual-Use Aircraft R&D*, (November 2006) (CRA Report), (Exhibit EU-29), p. 4.

[205] All non-classified DOD funding activities can be identified and tracked to some degree through the Future Years Defense Program (FYDP), which is the official DOD expression of historical and projected funding, by program, and by fiscal year. The FYDP contains data on all spending by DOD including personnel, acquisitions, operations and maintenance, and R&D activities. The FYDP information is contained in Budget Estimates that are published annually and contain actual prior year expenditures, estimated current year expenditures, and several projected budgeted years of program funding. (CRA Report, (Exhibit EU-29), pp. 4 and 5).

[206] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2786; and CRA Report, (Exhibit EU-29), p. 4.

[207] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1195 (referring at fn 2785 to DOD Financial Management Regulation, Vol. 2B, Chapter 5, June 2006, submitted in the original dispute as Exhibit EC-1324, p. 5). The original panel referred to the 23 RDT&E program elements as "programmes", although also explained that the 23 individual RDT&E programmes could be termed "programme elements", "project elements", or "PEs". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1195). For purposes of clarity, we refer to the individual RDT&E programmes under the RDT&E Program as "program elements".

[208] CRA Report, (Exhibit EU-29), p. 5.

[209] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1147.

[210] CRA Report, (Exhibit EU-29), p. 5.

RDT&E Program; in addition to (c) specified U.S. Air Force, Navy, Army, and Defense-wide program elements of the RDT&E Program; as well as (d) contracts, assistance instruments, and other agreements (as modified) entered into under these RDT&E program elements; and (e) contracts and other agreements (as modified) with Boeing listed in annex B of the United States' 23 September 2012 notification.[211] The forms of the subsidies are described as: (a) the provision to Boeing of funding and access to government facilities, equipment, and employees for R&D applicable to the development, design, and production of LCA on terms more favourable than would be available on the commercial market; as well as (b) the provision to Boeing of royalty-free use of the technologies developed with such funding and support or use of such technologies on preferential terms.[212]

7.85. The European Union's first written submission divides its discussion of the particular DOD RDT&E program elements through which DOD is alleged to provide actionable subsidies to Boeing into "original" RDT&E program elements (i.e. those that were also at issue in the original proceeding), and "additional" RDT&E program elements (i.e. those which allegedly have begun to fund what the European Union identifies as "dual-use LCA-relevant research" since 2007).[213]

7.86. The European Union explains that its identification and discussion of the RDT&E program elements that it considers "contribute to Boeing's LCA division" was assisted by experts, Mr Richard Rumpf and Charles River Associates (CRA).[214] CRA had been engaged by the European Communities in the original proceeding to estimate the amounts of RDT&E funding received by Boeing that could be considered "dual-use" RDT&E, in the sense of R&D that was "relevant" to both military and commercial aircraft.[215] Mr Rumpf was similarly engaged by the European Union in this compliance proceeding to estimate the amounts of funding provided by the DOD RDT&E Program to Boeing for fiscal years (FY) 2007 through FY 2012 "which support the development of technologies or methods that could benefit Boeing's commercial airplane division".[216]

7.87. Using a similar methodology to that employed by CRA in its 2006 Report, Mr Rumpf reviewed DOD's FYDP budget estimate statements for FY 2007 through FY 2013 to determine which RDT&E program elements, and which projects and activities within those program elements, funded "general aircraft" or "science and technology" R&D "that appeared to be dual-use to LCA".[217] On the basis of this analysis, Mr Rumpf identified 15 "general aircraft" RDT&E program elements, under 16 different program element numbers.[218] Eight of those "general aircraft" program elements had been identified by CRA in its 2006 Report and were challenged by the European Communities in the original proceeding.[219] The Rumpf Report does not identify six program elements that were identified by CRA in 2006 and which were the subject of the European Communities' claims in the original proceeding and are also being challenged by the European Union in this proceeding.[220]

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[211] European Union's request for the establishment of a panel, paras. 11-13. The panel request indicates that "Annex B of the 23 September 2012 notification is attached to this request, and the contracts listed therein are incorporated into this request". (Ibid. para. 13, p. 5, and annex B).

[212] European Union's request for the establishment of a panel, paras. 11 and 12.

[213] European Union's first written submission, sections V.D.2.a and V.D.2.b., respectively.

[214] European Union's first written submission, para. 245 (referring to CRA Report, (Exhibit EU-29); and R. L. Rumpf and R. J. Levinson, *United States Department of Defense Research, Development, Test & Evaluation (RDT&E) Funding for the Boeing Company Applicable to Large Civil Aircraft: 2007-2012 Estimates*, (12 March 2013) (Rumpf Report), (Exhibit EU-23)).

[215] CRA Report, (Exhibit EU-29), para. 1.1.

[216] Rumpf Report, (Exhibit EU-23), para. 1.1.

[217] Rumpf Report, (Exhibit EU-23), para. 2.1.

[218] Rumpf Report, (Exhibit EU-23), para. 3.2.

[219] Defense Research Sciences (PE 0601102F), Materials (PE 0602102F), Aerospace Vehicle Technologies (PE 0602201F), Aerospace Sensors (PE 0602204F), Advanced Materials for Weapon Systems (PE 0603112F), Aerospace Technology Dev/Demo (PE 0603211F), Aerospace Propulsion and Power Technology (PE 0603216F), and RDT&E for Aging Aircraft (PE 0605011F). (See Rumpf Report, (Exhibit EU-23), para. 3.2).

[220] These are: Aerospace Propulsion (PE 0602203F), Dual-Use Science & Technology (PE 0602805F), Flight Vehicle Technology (PE 0603205F), Flight Vehicle Technology Integration (PE 0603245F), and two Manufacturing Technology/Industrial Preparedness program elements, Navy (PE 0708011N) and Air Force (PE 6603771F/0708011F). (See Rumpf Report, (Exhibit EU-23), para. 3.2, p. 8). In response to questioning by the Panel, the European Union explains that the fact that DOD has not continued, after 2006, to provide additional appropriated funding under a particular RDT&E program element does not mean that the subsidy associated with that program element has been withdrawn. In the absence of meaningful action by the United States, the benefit that Boeing receives from the intellectual property developed with DOD funding continues for a

7.88. In the original proceeding, the European Communities also challenged payments and access to DOD facilities provided by DOD to Boeing through procurement contracts and assistance instruments funded under 15 "military aircraft" or "systems acquisition" program elements in relation to 10 military aircraft. CRA had included "military aircraft" program elements related to four military aircraft in its estimate of the amount of RDT&E funding received by Boeing from DOD that could be considered "relevant" to both military and commercial aircraft (so-called "dual-use" RDT&E).[221] For this compliance proceeding, Mr Rumpf undertook a similar exercise to that conducted by CRA with respect to the "military aircraft" or "systems acquisition" program elements in the original proceeding. He first identified the military aircraft program elements in which Boeing is known or believed to have been involved during the 2007-2012 period, to determine the RDT&E program elements that, in his professional opinion, funded the development of technologies, processes, and other knowledge that were applicable to the design, development, production, and maintenance of LCA.[222] He identified five military aircraft program elements, only one of which (the C-17) had been the subject of claims by the European Communities in the original proceeding. The other four military aircraft program elements are: the Airborne Warning and Control System (AWACS), the KC-46, Next Generation Aerial Refueling Aircraft, the Multi-Mission Maritime Aircraft (P-8A), and the Long Range Strike Bomber.[223]

7.89. Based on the foregoing, the European Union identifies the following "original" RDT&E program elements in its first written submission:

a. Defense Research Sciences (PE 0601102F).

b. Materials (PE 0602102F).

c. Aerospace Flight Dynamics/Aerospace Vehicle Technologies (PE 0602201F).

d. Aerospace Propulsion (PE 0602203F).

e. Aerospace Avionics/Aerospace Sensors (PE 0602204F).

f. Dual-Use Science & Technology (PE 0602805F).

g. Advanced Materials for Weapons Systems (PE 0603112F).

h. Flight Vehicle Technology (PE 0603025F).

i. Aerospace Structures/Aerospace Technology Dev/Demo (PE 0603211F).

j. Aerospace Propulsion and Power Technology (PE 0603216F).

k. Flight Vehicle Technology Integration (PE 0603245F).

l. RDT&E for Aging Aircraft (PE 0605011F).

m. Manufacturing Technology/Industrial Preparedness.

    i. Air Force (PE 0603771F/0603680F/0708011F).[224]

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significant period beyond the end point of the funding. (European Union's response to Panel questions No. 58, para. 15, and 60, para. 20). See also European Union's second written submission, paras. 429-430.

[221] CRA Report, (Exhibit EU-29), para. 1.1, p. 1. CRA considered RDT&E program elements funding the V-22/CV-22, the F/A-18, the Joint Strike Fighter and the C-17. (See CRA Report, (Exhibit EU-29), p. 13).

[222] Rumpf Report, (Exhibit EU-23), para. 2.2.

[223] Rumpf Report, (Exhibit EU-23), para. 2.2.

[224] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6). The European Union in its first written submission explains that the Air Force Manufacturing Technology/Industrial Preparedness program element was PE 0708011F in DOD budgets for FY 1993 and FY 1997 through FY 2008, and PE 0603771F in FY 1996. In FY 2009, the Airforce Manufacturing Technology (ManTech) program element transferred to PE 0603680F from PE 0708011F. (European Union's first written submission, para. 275 and

ii. Navy (PE 0708011N).[225]

iii. Defense Logistics Agency (PE 0708011S).[226]

iv. Defense Wide Manufacturing Science and Technology (PE 0603860D8Z).[227]

n. V-22/CV-22 (PE 0604262N/0401318F).[228]

o. F/A-18 Squadrons (PE 0204136N).

p. Joint Strike Fighter (PE 0603800F/0603800N/0603800E[229]/0604800F/0604800N).

q. C-17 (PE 0401130F/0604231F).

r. F-22 (PE 0604239F).

s. B-2 Advanced Technology Bomber (PE 0604240F).[230]

t. Comanche (PE 0604223A).[231]

u. A-6 Squadrons (PE 0204134N).[232]

v. AV-8B Aircraft (PE 0604214N).

7.90. The European Union identifies a further eight program elements that had not been challenged in the original proceeding[233]:

a. Materials and Biological Technology (PE 0602715E).

b. Sustainment Science & Technology (PE 0603199F).

c. Technology Transfer (PE 0604317F).

d. Aviation Safety Technologies (PE 0606301D8Z).

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fn 643). See also Air Force Industrial Preparedness/Manufacturing Technologies Budgets for FY 1993, FY1996-2013, (Exhibit EU-65), Manufacturing Technologies (PE 0603680F) FY 2011 Budget, p. 1.

[225] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6). See also United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No.24, para. 49 (correcting the program element number for this program element).

[226] The European Communities only challenged the Air Force and Navy ManTech program elements in the original proceeding. It did not challenge the Defense Logistic Agency's Industrial Preparedness Manufacturing Technology program element.

[227] The European Communities only challenged the Air Force and Navy ManTech program elements in the original proceeding. It did not challenge the Defense Wide Manufacturing Science and Technology program element.

[228] Although presented together in its submissions in this proceeding, the European Communities in the original proceeding had presented these as two distinct program element challenges. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1113).

[229] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6).

[230] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6).

[231] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6).

[232] The United States indicated at paragraph 6 of its Compliance Communication that it had ceased funding this program element. (See United States' Compliance Communication, para. 6).

[233] European Union's first written submission, paras. 291 and 301. The list of program elements in the European Union's first written submission includes all of the program elements identified in the European Union's request for the establishment of a panel, except for the following three program elements: Aviation Survivability (PE 0603216N), KC-105 (PE 0401219F), and Technology Transition (PE 0604858F).

e. Airborne Warning and Control System (AWACS) (PE 0207417F).

f. KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F).

g. Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N).

h. Long Range Strike Bomber (PE 060415F).

7.91. According to the European Union, these further eight RDT&E program elements had begun to fund Boeing's "dual-use LCA-relevant research since 2007".[234]

7.92. We also recall that the "funding" and "support" provided to Boeing for its R&D activities on behalf of DOD under the RDT&E program elements occurs through two different types of legal instruments. The first are procurement contracts, which DOD is required to use when contracting for the performance of R&D services the principal purpose of which is for the direct benefit or use of the U.S. Government.[235] The second are assistance instruments, which include cooperative agreements, technology investment agreements, and certain other transactions. Assistance instruments are used when the purpose of the R&D activity is to transfer a thing or value to the recipient instead of acquiring property or services for the direct benefit or use of the U.S. Government.[236]

7.93. The United States objects to the inclusion of some of the original DOD aeronautics R&D measures within the scope of this compliance proceeding on the basis that those measures were not subject to the DSB recommendations and rulings in the original proceeding. It also objects to the inclusion of some other "additional" DOD aeronautics R&D measures on the basis that they could have been challenged in the original proceeding and were not, and thus are not properly within the scope of the compliance proceeding. Specifically, the United States requests the Panel to make the following rulings:

a. The DOD procurement contracts funded under the original 23 RDT&E program elements that were at issue in the original proceeding, are outside the scope of this proceeding, because they were unsuccessfully challenged by the European Communities in the original proceeding.[237]

b. The DOD procurement contracts and assistance instruments funded under certain "additional" RDT&E program elements are outside the scope of this proceeding because they were either in existence at the time of the European Communities' panel request in the original proceeding, or continued work previously conducted under program elements then in existence, but were not challenged by the European Communities in the original proceeding.[238]

c. The provision of DOD "equipment and employees" is not within the scope of this proceeding because this measure was found to be outside the original panel's terms of reference and thus it is also outside the scope of this proceeding.[239]

7.94. We consider each of the above requests in this Section of the Report. We also address, of our own accord, whether it is necessary for the Panel to determine whether each of the RDT&E program elements identified by the European Union in its panel request in fact funds "dual-use"

[234] European Union's first written submission, paras. 291 and 301.
[235] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1115 and 7.1140-7.1142.
[236] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1115 and 7.1140-7.1142.
[237] United States' request for preliminary rulings, dated 13 November 2012, paras. 5, 8, and 9; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 26 and 34; and first written submission, paras. 61 and 64-66.
[238] United States' request for preliminary rulings, dated 13 November 2012, paras. 10, 13, and 14; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 42; and first written submission, paras. 62 and 63.
[239] United States' request for preliminary rulings, dated 13 November 2012, paras. 10-12; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 41; and first written submission, paras. 61, 67, and 68.

RDT&E (however defined), in order to determine which of the DOD aeronautics R&D measures identified by the European Union in its panel request are properly within our terms of reference.

7.3.2 Whether the pre-2007 DOD procurement contracts funded under the original 23 RDT&E program elements are outside the scope of this compliance proceeding

7.95. The United States requests a ruling that the DOD procurement contracts funded under the original 23 RDT&E program elements are outside the scope of this compliance proceeding because the DOD procurement contracts were challenged in the original proceeding, were not found to be WTO-inconsistent in that proceeding, and the European Union declined to pursue the issue on appeal.[240]

7.3.2.1 Main arguments of the parties and third parties

7.96. The United States argues that Article 21.5 of the DSU does not allow re-litigation of claims on which the complaining party did not prevail. It considers that the European Union did not prevail on its claims in respect of the DOD procurement contracts in the original proceeding because there was no finding of WTO-inconsistency against these measures at the conclusion of the original proceeding.[241]

7.97. The United States asserts that, although the European Union appealed the legal interpretation on which the panel had based its finding that the DOD procurement contracts were not financial contributions, within the meaning of Article 1.1(a)(1), that appeal did not result in a finding against the DOD procurement contracts (and thus create a compliance obligation for the United States).[242] According to the United States, this is because the European Union specifically asked that, in the event that the Appellate Body rejected the panel's legal test, it *not* complete the analysis with respect to the DOD procurement contracts.[243]

7.98. The United States acknowledges the existence of an "exception" to the principle that a party may not re-litigate issues in compliance proceedings in which it did not prevail in the original dispute. This is where the approach of the panel only partially resolved the matter at issue.[244] However, the difference in the present case is that the European Union bears responsibility for the partial resolution of its claims concerning the DOD procurement contracts because it declined to seek completion of the analysis.

7.99. The United States distinguishes the case of *US – Upland Cotton (Article 21.5 – Brazil*), in which Brazil was permitted to pursue claims against measures that it had pursued in the original proceeding but which had not resulted in a finding of WTO-inconsistency, owing to insufficient factual findings and undisputed evidence to enable the Appellate Body to complete the analysis. According to the United States, the present situation is different because "the EU took the issue of DOD procurement contracts out of contention, and the Appellate Body never had the opportunity to evaluate whether it was possible to complete the analysis."[245] Indeed, the Appellate Body's findings underscore that the European Union did not appeal the panel's findings that the DOD procurement contracts were not inconsistent with the SCM Agreement.[246] According to the United States, the fact that the Appellate Body declined to address the European Union's appeal because it was "unnecessary for purposes of resolving this dispute" indicates that the Appellate Body viewed the panel's finding that the DOD procurement contracts were not financial

[240] United States' request for preliminary rulings, dated 13 November 2012, paras. 8, 9, and 60.
[241] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 27; request for preliminary rulings, dated 13 November 2012, para. 9; and first written submission, para. 306.
[242] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 28; response to Panel question No. 10, paras. 22 and 23.
[243] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 28; request for preliminary rulings, dated 13 November 2012, para. 8; and first written submission, para. 309.
[244] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 28 (referring to Appellate Body Reports, *EC – Bed Linen (Article 21.5 – India*), fn 115; and *US – Oil Tubular Goods Sunset Reviews (Article 21.5 – Argentina*), para. 148 and fn 322).
[245] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 33; opening statement at the meeting of the Panel, para. 62.
[246] United States' opening statement at the meeting of the Panel, para. 62.

contributions to be a finding that the European Union did not appeal, and therefore, addressing that issue on appeal was unnecessary for purposes of resolving the dispute.[247]

7.100. Finally, the United States submits that the systemic implication of permitting the European Union to reassert its claims against the DOD procurement contracts in the circumstances would be to enable complaining parties that are displeased with the outcome of a panel finding in an original proceeding to make limited appeals of legal issues and decline to request completion of the analysis, in order to prevent the Appellate Body from evaluating whether the party had made out its case. If the appeal on the limited issue is successful, it then has a "second chance" to make out its case in a compliance proceeding. This outcome is contrary to the limited scope of Article 21.5 of the DSU, and imposes an unfair burden on the responding party, which would be deprived a reasonable period of time in which to comply with any findings of breach.[248]

7.101. The European Union argues that it has the right to pursue claims in this compliance proceeding against any funding or support provided to Boeing through the RDT&E program elements at issue, regardless of the type of contracts or agreements pursuant to which that funding and support is provided.[249]

7.102. The European Union notes that it appealed the legal finding upon which the panel had based its decision that the DOD procurement contracts were not subsidies. However, given the lack of factual findings and uncontested facts related to benefit and adverse effects, it would have been impossible for the Appellate Body to complete the analysis of whether the DOD procurement contracts constitute specific subsidies that cause adverse effects. Consequently, the European Union did not request completion of the analysis that it knew the Appellate Body could not grant.[250]

7.103. The European Union notes that the Appellate Body declared "moot and without legal effect" the panel's interpretation that transactions properly characterized as purchases of services are excluded from Article 1.1(a)(1) and likewise declared "moot" the panel's finding that DOD procurement contracts were properly characterized as purchases of services and thus were not financial contributions.[251] The European Union argues that, because it had already succeeded in the original proceeding in demonstrating that the NASA aeronautics R&D measures and DOD assistance instruments were specific subsidies, the only practical reason it had to appeal the panel's finding that purchases of services are excluded from Article 1.1(a)(1) of the SCM Agreement was to "bring the DOD procurement contracts back into the scope of this dispute".[252] The European Union considers that it pursued the matter before the Appellate Body to the greatest extent possible, and the panel's findings were declared moot.[253]

7.104. The European Union argues that the United States' position regarding the European Union's failure to request completion of the analysis amounts to saying that if the Appellate Body is requested to complete the analysis but cannot, the claim and measure may be within the scope of the compliance proceeding, while failure to request completion of the analysis is "similar to a party not appealing" and triggers the obligation to accept unconditionally the finding left unappealed.[254] This amounts to a false distinction between the Appellate Body's inability to complete the analysis, on the one hand, and a party's recognition that there are insufficient factual findings or undisputed facts on the record to allow the Appellate Body to

[247] United States' opening statement at the meeting of the Panel, para. 63.

[248] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 30; first written submission, para. 66.

[249] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 16.

[250] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 17; second written submission, para. 46.

[251] Indeed, the European Union submits that the United States' preliminary objection depends entirely on a distinction between DOD procurement contracts and assistance instruments that the Appellate Body had declared to be moot. To allow the United States to prevail would mean that such an erroneous distinction would be anything but moot. (See European Union's supplemental submission on the United States' request for preliminary rulings, para. 10; and opening statement at the meeting of the Panel, para. 15).

[252] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 20. (emphasis original)

[253] European Union's opening statement at the meeting with the Panel, para. 15.

[254] European Union's second written submission, para. 41.

complete the analysis.[255] In the present case, the original panel had not even begun an analysis of the highly fact-intensive issues of benefit or adverse effects regarding the DOD procurement contracts, limiting that analysis exclusively to DOD assistance instruments. The European Union submits that, if the United States is correct that the European Union is at fault for failing to request completion of the analysis, the result will be that appellants will have to ask for completion of the analysis on every issue under appeal, in order to preserve their options before any compliance panel. This would lead to huge inefficiencies, creating new burdens on and delays in Appellate Body proceedings.[256]

7.105. Finally, the European Union asks the Panel to consider the practical result of excluding the DOD procurement contracts funded under the 23 original RDT&E program elements from this compliance proceeding: A new original panel would need to be constituted to consider claims against procurement contracts funded under the 23 original RDT&E program elements while the Panel in this compliance proceeding would be considering "identical" claims against procurement contracts funded under the other "additional" RDT&E program elements, as well as assistance instruments funded under all DOD RDT&E program elements. This would be "incredibly inefficient".[257]

7.106. Brazil argues that the DOD procurement contracts funded under the original 23 RDT&E program elements challenged in the original proceedings are outside the scope of this compliance proceeding, on the basis that the European Union could have chosen to pursue the DOD procurement contracts before the Appellate Body, but chose not to.[258] Brazil considers that it may be necessary to draw a distinction between claims for which the Appellate Body was asked to fully consider the issues but was unable to complete its analysis, and matters for which the complaining Member did not seek full consideration.[259] Without a substantial change in the facts, the latter measures cannot constitute a measure taken to comply, and are therefore outside the scope of compliance proceedings.[260] Brazil also emphasizes that compliance proceedings should not be used to give complainants a "second bite of the apple" and that to do so would compromise the dispute settlement system's "functioning and predictability".[261]

7.107. Certain of the third parties (Brazil, Canada, Japan, and Korea) make general arguments as to the situations in which a complaining party may be precluded from challenging a measure in a compliance proceeding that it had not successfully challenged in the original proceeding. These arguments are summarized at Section 7.2.1.1 of this Report.

7.3.2.2 Evaluation by the Panel

7.108. The question before us is whether the European Union can assert claims concerning DOD procurement contracts funded under the 23 original RDT&E program elements in this compliance proceeding, notwithstanding that there were no DSB recommendations and rulings with respect to the DOD procurement contracts in the original proceeding, and moreover, that the original panel's finding that the DOD procurement contracts did not involve financial contributions, within the meaning of Article 1.1(a)(1), was declared moot.

7.109. In Section 7.2.1.2 of this Report, we discuss the situations in which complaining parties have been permitted to reassert claims in compliance proceedings that they had unsuccessfully raised in the original proceeding. In that discussion, we conclude that the prior cases addressing

[255] European Union's supplemental submission on the United States' request for preliminary rulings, para. 13; second written submission, paras. 44 and 46.
[256] European Union's supplemental submission on the United States' request for preliminary rulings, para. 14.
[257] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, paras. 22-25.
[258] Brazil's third-party submission, paras. 37 and 38; third-party statement, paras. 5 and 6; and third-party response to Panel question No. 4, paras. 1 and 2.
[259] Brazil's third-party response to Panel question No. 1, para. 6.
[260] Brazil's third-party submission, paras. 37 and 38.
[261] Brazil's third-party submission, para. 36; third-party response to Panel question No. 1, paras. 4 and 5.

this issue suggest that the key issue is whether the reassertion of claims in the particular circumstances would compromise the finality of the DSB recommendations and rulings.[262]

7.110. We will therefore determine the status of the European Union's claims in respect of the DOD procurement contracts at the conclusion of the original proceeding. This includes a close examination of the European Union's appeal as it pertained to the DOD procurement contracts, as well as the way in which the Appellate Body dealt with that aspect of the European Union's appeal.

7.3.2.2.1 The European Union's appeal regarding the pre-2007 DOD procurement contracts

7.111. In the original proceeding, the panel found, at paragraph 7.970 of the panel report, that transactions properly characterized as purchases of services are excluded from the scope of Article 1.1(a)(1)(i) of the SCM Agreement. In a separate section of the panel report entitled "Department of Defense (DOD) aeronautics R&D", the panel concluded, at paragraph 7.1171, that the work that Boeing performed for DOD under the procurement contracts was properly characterized as a "purchase of services" and therefore found that the payments and access to facilities provided to Boeing under the DOD procurement contracts were not financial contributions, within the meaning of Article 1.1(a)(1).

7.112. In its notice of appeal, the European Union requested the Appellate Body to "reverse, modify or declare moot and of no legal effect the findings, conclusions and recommendations of the Panel" with respect to various enumerated errors of law and legal interpretations contained in the panel report.[263] The third such alleged error enumerated by the European Union was that the panel erred in its interpretation of Article 1.1(a)(1) of the SCM Agreement when it found that transactions properly characterized as purchases of services are excluded from the scope of Article 1.1(a)(1) of the SCM Agreement.[264] The footnote to this ground of appeal refers to the "Panel Report, paras. 7.953-7.970 and para. 7.1136, particularly para. 7.970, final sentence".[265] There is no reference to paragraph 7.1171, which contained the panel's finding that the DOD procurement contracts were not financial contributions.[266] In other words, the European Union in its third appeal point appealed only the panel's *interpretation* of Article 1.1(a)(1), not the *application* of that interpretation to any specific measures.

7.113. The European Union states in the portion of its appellant submission concerning the panel's allegedly erroneous interpretation of Article 1.1(a)(1) of the SCM Agreement:

> As a direct consequence of this error of law, the Panel came to the erroneous conclusion that much of the provision of funding and other support to Boeing pursuant to the DOD RDT&E Program is excluded from the scope of the SCM Agreement.[267]

It concludes this portion of its appellant submission as follows:

> In conclusion, the Appellate Body should reverse or modify the Panel's finding that transactions properly characterised as purchases of services are excluded from the scope of Article 1.1(a)(1) of the SCM Agreement. Because there are a number of contested facts related to the DOD RDT&E Program measures that were found to constitute purchases of services, the European Union does not request that the Appellate Body complete the analysis.[268]

7.114. This suggests that, although the European Union's appeal of the panel's interpretation of Article 1.1(a)(1) did not explicitly refer to the panel's findings concerning the DOD procurement

[262] See para. 7.42 above.
[263] European Union's notice of appeal, dated 4 April 2011, WT/DS353/8, second introductory para.
[264] European Union's notice of appeal, dated 4 April 2011, WT/DS353/8, para. 3.
[265] European Union's notice of appeal, dated 4 April 2011, WT/DS353/8, fn 4.
[266] The formulation of the third appeal point concerning the interpretation of Article 1.1(a)(1) can be contrasted with the other grounds of appeal, in which the European Union alleged that the panel erred in its interpretation *and application* of various provisions of the SCM Agreement (such as Article 7.4 and Annex V, Article 2.1, Article 3.1(a) and fn 4, and Articles 5 and 6.3).
[267] European Union's appellant submission, (Exhibit EU-1280), para. 93.
[268] European Union's appellant submission, (Exhibit EU-1280), para. 127.

contracts as purchases of services that are not covered by Article 1.1(a)(1)(i), the European Union considered that the Appellate Body's reversal of the panel's legal interpretation would have implications for the panel's finding regarding the DOD procurement contracts. The European Union also appears to have considered that it was entitled, on the basis of its appeal, to request the Appellate Body to complete the analysis concerning the DOD procurement contracts, even though the European Union ultimately elected not to do so on the grounds that there were insufficient factual findings by the panel or undisputed facts to make this feasible.

7.115. The United States appealed the panel's findings that the NASA procurement contracts and DOD assistance instruments were not properly characterized as purchases of services, and constituted financial contributions, within the meaning of Article 1.1(a)(1).[269] The United States also appealed the panel's findings that the NASA procurement contracts and DOD assistance instruments conferred a benefit, within the meaning of Article 1.1(b).[270] The European Union correctly observed in its appellee submission that, if the Appellate Body were to uphold the European Union's appeal regarding the interpretation of Article 1.1(a)(1), this would render moot the United States' appeal concerning the application of that interpretation to the NASA procurement contracts and DOD assistance instruments.[271]

7.3.2.2.2 The Appellate Body's approach to the European Union's appeal of the panel's interpretation of Article 1.1(a)(1)

7.116. There are several aspects of the Appellate Body Report that suggest that the Appellate Body did not consider that the DOD procurement contracts were on appeal before it. The Appellate Body acknowledged that the European Union's appeal raised the issue of "{w}hether the Panel erred in finding that transactions that are properly characterized as 'purchases of services' are excluded from the scope of Article 1.1(a)(1)(i) of the SCM Agreement".[272] However, the section of the Appellate Body Report in which this issue is discussed is entitled "NASA Procurement Contracts and USDOD Assistance Instruments". Indeed, after summarizing the panel's findings and general approach (at paragraphs 550-591 of the Appellate Body Report), the Appellate Body stated:

> We turn to the *measures before us on appeal*, namely the NASA procurement contracts and USDOD assistance instruments.[273]

7.117. The Appellate Body faulted the panel for not first characterizing the various aeronautics R&D measures based on an analysis of their "relevant characteristics" and then determining whether those measures, properly characterized, fell within any of the categories of "financial contribution" in Article 1.1(a)(1).[274] The Appellate Body said that it would proceed by first undertaking an examination of the relevant characteristics of the "measures before us on appeal – that is, the NASA procurement and USDOD assistance instruments".[275] It would then "consider the terms and scope of Article 1.1(a)(1)" before determining whether, in light of their relevant characteristics, the NASA procurement contracts and DOD assistance instruments fell within any of the four categories of financial contribution covered by Article 1.1(a)(1).

7.118. At paragraph 590 of its Report, the Appellate Body set forth the implications of this approach for the appeal points of both the European Union and the United States, foreshadowing that, if it were to find that the measures that the United States had appealed (NASA procurement contracts and DOD assistance instruments) were of a type that fall within Article 1 of the SCM Agreement, the European Union's appeal of the panel's interpretation of Article 1.1(a)(1) would be rendered moot:

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[269] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 553.

[270] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 626. The United States did not appeal the panel's findings that the NASA Space Act Agreements were financial contributions. The Appellate Body stated at footnote 1300 of its Report that its discussion of benefit concerning the NASA measures was thus limited to NASA procurement contracts.

[271] European Union's appellee submission, para. 112.

[272] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 425(b).

[273] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 592. (emphasis added)

[274] The Appellate Body found it odd that the panel had instead considered that transactions properly characterized as "purchases of services" are excluded from the scope of Article 1.1(a)(1), then sought to determine whether the DOD procurement contracts were properly characterized as "purchases of services". (See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 585).

[275] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 589.

> We note that the conclusion as to the proper characterization of the measures may have consequences for the scope of our inquiry. For instance, if we were to find that the measures are of a type that fall within the scope of Article 1.1, there would be no reason for us to examine whether purchases of services fall within the scope of Article 1.1(a)(1) of the SCM Agreement. Whether or not purchases of services are covered by Article 1.1(a)(1) would be irrelevant to the question of whether the measures before us – the NASA procurement contracts and USDOD assistance instruments – constitute financial contributions. This would render moot the European Union's appeal of the Panel's interpretation that purchases of services are excluded from the scope of Article 1.1(a)(1)(i). It would also render moot the United States' appeal of the Panel's application of the test it developed for determining whether the measures could properly be characterized as purchases of services.[276]

7.119. We read this statement to say that, if the Appellate Body were to find that the NASA procurement contracts and DOD assistance instruments, properly characterized, fall within Article 1.1(a)(1) of the SCM Agreement (which it found), there would be no reason to examine whether transactions properly characterized as purchases of services are excluded from the scope of Article 1.1(a)(1)(i) because the answer to that interpretive question would be irrelevant to the disposition of the matter before it.

7.120. Moreover, at paragraph 620 of its Report, the Appellate Body reiterated its position that, given the approach it had taken to the characterization of the NASA procurement contracts and DOD assistance instruments, the interpretive question as to whether Article 1.1(a)(1)(i) excludes transactions properly characterized as purchases of services is "not relevant" to resolving the dispute before it. The Appellate Body stated:

> This interpretive issue does not need to be resolved by us because it is not relevant for purposes of resolving the dispute before us, that is, whether the NASA procurement contracts and USDOD assistance instruments, which we have found to resemble joint ventures, constitute financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.{*} We therefore *declare* the Panel's interpretation that "transactions properly characterized as purchases of services are excluded from the scope of Article 1.1(a)(1)(i) of the SCM Agreement"{*} to be moot and of no legal effect.[277]

{*fn original}[1297] The Appellate Body proceeded in a similar manner in *US – Upland Cotton* with respect to the interpretation of Article 6.3(d) of the SCM Agreement.

{*fn original}[1298] Panel Report, para. 9.970. (emphasis omitted) Our findings of financial contributions regarding the payments and other support provided under the NASA procurement contracts and USDOD assistance instruments are based on the particular characteristics of those measures. We also declare moot the Panel's finding, in paragraph 7.1171 of its Report, that the USDOD procurement contracts are properly characterized as "purchases of services" and thus are not financial contributions under Article 1.1(a)(1). However, as neither participant has requested us to do so, we do not complete the analysis regarding the USDOD procurement contracts at issue in this dispute.

7.121. The first sentence of the quotation from paragraph 620 of the Appellate Body Report extracted above suggests that the Appellate Body regarded the "dispute" before it as being limited to the United States' appeal; namely, whether the NASA procurement contracts and DOD assistance instruments constitute financial contributions. The implications of the first sentence of the quotation from paragraph 620 extracted above are that the Appellate Body's approach to that issue had rendered the European Union's appeal of the panel's interpretation of Article 1.1(a)(1) (as well as the United States' appeal of the panel's *application* of that interpretation to the NASA procurement contracts and DOD assistance instruments), moot. This result was foreshadowed by the Appellate Body in paragraph 590 of its Report, as discussed above.

7.122. In footnote 1297, immediately following the first sentence of the quotation from paragraph 620 extracted above, the Appellate Body asserts that it "proceeded in a similar manner" in *US – Upland Cotton*. In the relevant part of the Appellate Body Report in *US – Upland Cotton*,

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[276] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 590.

[277] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 620. (italics original, underlining added)

Brazil had: (a) appealed the panel's legal interpretation of the phrase "world market share" in Article 6.3(d) of the SCM Agreement; and (b) requested the Appellate Body to complete the analysis of its serious prejudice claim under Article 6.3(d) and find that the effect of certain United States subsidies is an increase in the world market share of the United States in upland cotton. This second element of Brazil's appeal was expressed as being conditional on the Appellate Body reversing the panel's findings that the United States' price-contingent subsidies caused significant price suppression, within the meaning of Article 6.3(c) of the SCM Agreement.[278] The Appellate Body had upheld the panel's finding regarding price suppression under Article 6.3(c), so the condition upon which Brazil's request for completion of the analysis was not fulfilled. However, the Appellate Body also said that it was "not necessary" to make a finding on the first element of Brazil's appeal – the interpretation of the phrase "world market share" in Article 6.3(d) – although Brazil had stressed that this first element of its appeal was not conditional. The Appellate Body said that, although an interpretation in the abstract of the phrase "world market share" in Article 6.3(d) of the SCM Agreement might offer at best some degree of guidance on that issue, it would not affect the resolution of this particular dispute (presumably because the Appellate Body would not complete the analysis under Article 6.3(d) since the condition specified by Brazil for doing so had not been fulfilled). Thus, even if the Appellate Body were to reverse the panel's finding on the interpretation of Article 6.3(d), upon adoption of the recommendations and rulings by the DSB, the United States would have been under no additional obligation regarding implementation. The Appellate Body concluded by reiterating that an interpretation of the phrase "world market share" in Article 6.3(d) was unnecessary for the purpose of resolving the dispute before it. It clarified "we neither uphold nor reverse the Panel's findings on the interpretation of the phrase 'world market share' in Article 6.3(d) of the SCM Agreement."[279]

7.123. In saying in footnote 1297 to the first sentence of the quotation from paragraph 620 of the Appellate Body Report extracted in paragraph 7.120. above that it proceeded in a "similar manner" in *US – Upland Cotton* with respect to the interpretation of Article 6.3(d) of the SCM Agreement as it was proceeding with the European Union's appeal regarding the interpretation of Article 1.1(a)(1), the Appellate Body suggests that it did not address the European Union's appeal for the same reason that it declined to address Brazil's appeal; namely, that a reversal of the interpretation would not affect the resolution of the dispute. This also seems to suggest that the Appellate Body considered that the DOD procurement contracts were not before it on appeal.

7.124. In the second sentence of the quotation from paragraph 620 of the Appellate Body Report, extracted in paragraph 7.120. above, the Appellate Body states that it "therefore" declares the panel's interpretation of Article 1.1(a)(1)(i) to be "moot and of no legal effect". In our view, the panel's interpretation of Article 1.1(a)(1)(i) could only be considered moot if: (a) the Appellate Body had likewise characterized the DOD procurement contracts as falling within Article 1.1(a)(1) independently of whether they involved purchases of services (which it did not do); or (b) the Appellate Body did not regard the DOD procurement contracts as being before it.

7.125. However, in footnote 1298 to the second sentence of the quotation from paragraph 620 of the Appellate Body Report extracted in paragraph 7.120. above, the Appellate Body "also" declared moot the panel's finding, at paragraph 7.1171 of the panel report, that the DOD procurement contracts were properly characterized as "purchases of services" and thus were not financial contributions. Footnote 1298 concludes with a statement that the Appellate Body did not complete the analysis as to whether the DOD procurement contracts were financial contributions because neither participant requested it to do so. Neither party could be expected to request completion of the analysis with respect to a claim that was not the subject of appeal. This declaration that the panel's finding at paragraph 7.1171 of the panel report is moot suggests that the DOD procurement contracts *were* regarded by the Appellate Body as being before it on appeal.

7.126. If we were to consider that the Appellate Body did not regard the DOD procurement contracts to be before it on appeal, this would imply that the Appellate Body considered that the European Union had not pursued its claims concerning the DOD procurement contracts on appeal. In these circumstances, we would be minded to conclude that the European Union is not able to reassert claims concerning the DOD procurement contracts at the compliance stage, when it had inadequately pursued them on appeal. To conclude otherwise would, in our view, compromise the

[278] Appellate Body Report, *US – Upland Cotton*, paras. 501 and 506.
[279] Appellate Body Report, *US – Upland Cotton*, para. 511.

finality of the DSB recommendations and rulings and provide the European Union an "unfair second chance".

7.127. However, we note that, although the European Union did not appeal the application of the panel's allegedly erroneous interpretation of Article 1.1(a)(1) to the DOD procurement contracts, the Appellate Body nevertheless declared moot the panel's finding that the DOD procurement contracts are not financial contributions. After some reflection, we have concluded that this could only be because the Appellate Body did in fact regard the DOD procurement contracts to be before it on appeal. Thus, we have ultimately arrived at the conclusion that the application of the panel's interpretation of Article 1.1(a)(1) to the DOD procurement measures was before the Appellate Body.

7.128. We are also mindful of the fact that the panel's analysis of the DOD procurement contracts had stopped at the stage of financial contribution. The panel did not analyse whether the DOD procurement contracts conferred a benefit or caused adverse effects. We therefore agree with the European Union that it would have been impossible for the Appellate Body to complete the analysis regarding the DOD procurement contracts. Under these circumstances, we do not consider that the European Union's failure to request completion of the analysis should preclude our consideration of these measures in this compliance proceeding.

7.129. Additionally, given the time and resources that have been expended in this dispute in order to arrive at a resolution of the fundamental disagreement between the European Union and United States as to whether the U.S. Government subsidizes Boeing through the procurement of military research, and given that the aim of the dispute settlement system, as expressed in Article 3.7 of the DSU, is to secure a positive resolution to a dispute, we have concluded that it would simply not be a reasonable outcome for us to rule that the European Union is precluded from pursuing in this compliance proceeding claims regarding the DOD procurement contracts at issue in the original proceeding.

7.130. In light of the foregoing, we conclude that the European Union would not be "unfairly" getting a second chance to make a case that it failed to make out in the original proceeding if it were to reassert claims in this proceeding in respect of DOD procurement contracts funded under the original 23 RDT&E program elements. In Section 7.2.1.2 we explain that we are unable to agree with the argument that an original measure is, by definition, outside the scope of a compliance proceeding.[280] We conclude that the DOD procurement contracts funded through the original 23 RDT&E program elements are within the scope of this compliance proceeding.

7.131. **We reject the United States' request for a ruling that the DOD procurement contracts funded through the original 23 RDT&E program elements are outside the scope of this compliance proceeding and conclude that these measures are within the scope of this proceeding**.

7.3.3 Whether the seven "additional" RDT&E program elements are outside the scope of this proceeding

7.132. The United States requests a ruling that the seven "additional" RDT&E program elements are outside the scope of this proceeding on the basis that those program elements either were in existence at the time of the European Communities' panel request in the original proceeding, or continue work that was previously conducted under a program element that was in existence at that time. According to the United States, because the European Communities could have brought challenges regarding those program elements in the original proceeding and did not, the European Union is precluded from challenging them now in this compliance proceeding.[281]

[280] See paras. 7.38-7.40 above.

[281] United States' request for preliminary rulings, dated 13 November 2012, paras. 10, 13, and 14. Although the United States sometimes describes its request for a preliminary ruling on this issue as being limited to the European Union's claims concerning DOD assistance instruments or "agreements" funded under the additional program elements, it is clear in other contexts that the United States' objections cover both assistance instruments and procurement contracts funded under those additional program elements, or the program elements as measures themselves. (See United States' request for preliminary rulings, dated

7.3.3.1 Background

7.133. We recall from paragraphs 7.89 and 7.90 above that the European Union's DOD-related claims cover a number of "original" RDT&E program elements (i.e. those that were also at issue in the original proceeding), and "additional" RDT&E program elements (i.e. those which allegedly have begun to fund what the European Union identifies as "dual-use LCA-relevant research" since 2007).

7.134. The United States' formulation of its objection to the inclusion of certain of the "additional" RDT&E program elements within the scope of this proceeding could be read to suggest that the United States considers the DOD aeronautics R&D measures to be the RDT&E program elements themselves, rather than the payments and access to facilities, equipment, and employees provided to Boeing through procurement contracts and assistance instruments *funded under various RDT&E program elements*.[282] We understand that in making this request for preliminary rulings, the United States objects to the inclusion within the scope of this proceeding of payments and access to DOD facilities, equipment, and employees, whether prior to or after the date of the original panel request, provided to Boeing through procurement contracts and assistance instruments funded under the seven "additional" RDT&E program elements.

7.135. The United States first raised this objection in a request for preliminary rulings on 13 November 2012, some time prior to the European Union's first written submission, which was filed on 28 March 2013. The United States' request was at that time based on the European Union's panel request, dated 11 October 2012.[283] The European Union responded to the United States' request for preliminary rulings on 23 November 2012, and the United States replied to that response on 3 December 2012. Pursuant to a communication from the Panel dated 6 May 2013 and subsequent to the filing of its first written submission, the European Union on 13 May 2013 provided a supplemental submission on the United States' request for preliminary rulings, including the United States' objection to the inclusion of certain "additional" RDT&E program elements within the scope of this proceeding. The United States filed its first written submission on 27 June 2013, reiterating its objections, but only as regards seven of the nine "additional" RDT&E program elements to which it had objected in its original request for preliminary rulings.[284]

7.136. The seven "additional" RDT&E program elements the subject of the United States' request for preliminary rulings are as follows:

a. Materials and Biological Technology (PE 0602715E).

b. Technology Transfer (PE 0604317F).[285]

c. Manufacturing Technology/Industrial Preparedness Program: Defense Logistics Agency (PE 0708011S).

d. Airborne Warning and Control System (AWACS) (PE 0207417F).

e. KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F).[286]

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13 November 2012, para. 14; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 42; and first written submission, para. 63).

[282] The relationship between the RDT&E program elements and the legal instruments through which the payments and access to facilities, equipment, and employees are provided is discussed in Section 7.3.1 of this Report. The measures at issue are discussed in Section 8.2.3.2 of this Report.

[283] European Union's request for the establishment of a panel. The Panel was established by the DSB on 23 October 2012.

[284] The United States had also originally challenged the inclusion of the Aviation Survivability (PE 0603216N) and KC-10S (PE 0401219F) program elements on the basis of the inclusion of these program elements in the European Union's panel request, however, as the European Union did not pursue claims regarding those program elements in its first written submission, the United States' request in relation to these two program elements is rendered moot. (See European Union's supplemental submission on the United States' request for preliminary rulings, para. 18).

[285] This program element continues work that was previously conducted under a program element entitled "Technology Link (PE 0603942D8Z)".

f. Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N).

g. Long Range Strike Bomber (PE 0604015F).

7.137. We note that the United States does not object to the inclusion within the scope of this proceeding of the "Sustainment Science & Technology" or the "Aviation Safety Technologies" program elements, both of which were identified by the European Union in its first written submission as "additional" RDT&E program elements. The United States does, however, object to the inclusion of the "Manufacturing Technology/Industrial Preparedness Program: Defense Logistics Agency (PE 0708011S)" program element as an "additional" program element. This program element was presented by the European Union as an "original" RDT&E program element in its first written submission.[287]

7.3.3.2 Main arguments of the parties and third parties

7.138. The United States argues that the European Union has failed to provide a valid reason that would permit it to raise claims relating to the seven "additional" RDT&E program elements for the first time in this compliance proceeding, when it had omitted to make claims regarding those program elements in the original proceeding.[288]

7.139. Each of the seven "additional" RDT&E program elements, as measures that existed at the time of the original panel request, or measures that continue work that was previously conducted under a different program element number which was in existence at the time of the original panel request, but were not challenged in the original proceeding, cannot also be measures taken to comply with the DSB recommendations and rulings. According to the United States, a measure that existed at the time of the panel request cannot logically also be a measure taken to comply with DSB recommendations and rulings subject to the proceeding. There is thus no basis for their inclusion in the scope of this proceeding.[289] Because the European Union could have challenged the seven RDT&E program elements at the time of its original panel request but did not, it cannot now raise claims related to these measures for the first time in a compliance proceeding.[290]

7.140. The United States argues that the fact that particular projects or activities under the RDT&E program elements may not have come into existence until after the date of the original panel request does not demonstrate that the European Union "could not have challenged the measures during the original proceeding, or that there is any legally relevant discontinuity between the programmes as they existed at the time of the original EU panel request and as they exist today".[291] Article 21.5 does not accord the complaining party the latitude to manipulate the compliance panel's terms of reference by "sculpting the temporal scope of its claims".[292]

7.141. The United States considers that the fact that a particular contract funded under any of the seven "additional" RDT&E program elements may have been awarded after the date of the original panel request is irrelevant if the measures being challenged by the European Union are payments, facilities, equipment, and employees under the program elements, without regard to the contract that made them available. Rather, if the European Union acknowledges that DOD only makes payments or provides facilities, equipment, and employees pursuant to contracts or agreements, and that those contracts and agreements are the relevant measures, the analysis "might be

[286] This program element continues work that was previously conducted under a program element entitled "KC-135 Tanker Replacement (PE 0401221F)" which was not challenged in the original proceeding.

[287] Compare European Union's first written submission, para. 246, with European Union's supplemental submission on the United States' request for preliminary rulings, para. 20. On the other hand, the United States does not object to the inclusion of the Defense Wide Manufacturing Science and Technology (PE 0603860D8Z) program element in this proceeding although it was also listed by the European Union in its first written submission as an "original" RDT&E program element when it had not been challenged in the original proceeding.

[288] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 42.

[289] United States' second written submission, paras. 59 and 60.

[290] United States' request for preliminary rulings, dated 13 November 2012, para. 14; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 45; and first written submission, para. 62, 429, and 435.

[291] United States' first written submission, para. 63.

[292] United States' second written submission, para. 61.

different". In any case, the United States notes that the largest contract funded through the "additional" RDT&E program elements (the P-8A) was awarded in 2004.[293]

7.142. Furthermore, the United States rejects the suggestion that the RDT&E program elements changed after establishment of the original panel in ways that led the European Union to consider that they subsequently involved technology applicable to LCA. According to the United States, it was obvious in the beginning of 2006 that the P-8A, the aerial refueling tanker and the AWACS were or would be military aircraft produced by militarizing civilian airframes.[294]

7.143. Finally, the United States argues that the European Union has failed to substantiate any allegation that the United States is withdrawing the subsidies provided under the 23 RDT&E program elements and now channelling them through the seven "new" program elements.[295]

7.144. The European Union rejects the United States' contention that it is precluded from challenging the "additional" RDT&E program elements in this proceeding because it could have challenged them in the original proceeding and did not. According to the European Union, while a particular RDT&E program element may have existed at the time of the original panel request, it could not have brought successful challenges against those program elements at the time of its original panel request because, on the basis of the information then available, they did not appear to be supporting LCA-related R&D at that time.[296]

7.145. The European Union argues that there are new or changed aspects of the "additional" RDT&E program elements such that the European Union now considers them to be providing subsidies to Boeing. The European Union notes that for six of the seven RDT&E program elements at issue, its claims are limited to aspects of those program elements that began in FY 2007 or later and thus could not have been challenged in the original proceeding. For the other, the Multi-Mission Maritime Aircraft (P-8A), the design and testing continued well after the date of the original panel request and the R&D had not progressed sufficiently prior to that time to allow the European Union to conclude that it was "LCA-relevant".[297]

7.146. The European Union states that it has never challenged "DOD PEs *per se*, but only to the extent that each PE provides subsidies that benefit U.S. LCA producers."[298] The inclusion of each of the seven "additional" RDT&E program elements in the panel request in this compliance proceeding indicates that the European Union now has reason to believe that, since 20 January 2006 (the date of the European Union's panel request in the original proceeding) or sometime thereafter, those "additional" RDT&E program elements have been providing subsidies to benefit Boeing's LCA division.[299]

7.147. Finally, the European Union argues that the exclusion of the seven RDT&E program elements from the scope of this proceeding "could potentially open a huge loophole in the United States' compliance obligations".[300] This is because of the potential for the United States to seek to show that it is "withdrawing" subsidies from the original 23 RDT&E program elements, while in reality it is shifting those subsidies to the seven RDT&E program elements.

7.3.3.3 Evaluation by the Panel

7.148. The issue before the Panel is whether the payments and access to facilities, equipment, and employees provided to Boeing through procurement contracts and assistance instruments

[293] United States' second written submission, para. 63.
[294] United States' second written submission, para. 62.
[295] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 44.
[296] European Union's second written submission, para. 115; response to the United States' request for preliminary rulings, dated 23 November 2012, para. 37.
[297] European Union's second written submission, para. 114 and fn 120.
[298] European Union's supplemental submission on the United States' request for preliminary rulings, para. 19; response to the United States' request for preliminary rulings, dated 23 November 2012, para. 37.
[299] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 37; supplemental submission on the United States' request for preliminary rulings, para. 19.
[300] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 38.

funded under seven "additional" RDT&E program elements, which were not program elements challenged in the original proceeding, are within the scope of this compliance proceeding.[301]

7.149. The Appellate Body has explained that the subject matter of compliance proceedings is determined not just by the Panel's terms of reference, but also by Article 21.5 of the DSU.[302] Thus, a measure will not be within the scope of a compliance proceeding simply because it has been duly identified in a complaining party's request for the establishment of a panel. It must additionally relate to the issue of compliance with the DSB recommendations and rulings in the original proceeding, including the existence or non-existence of measures taken to comply with such recommendations and rulings.

7.150. In Section 7.3.2 of this Report, concerning the United States' objections to the inclusion within the scope of this proceeding of the DOD procurement contracts that were before the original panel, we conclude that a compliance panel may properly consider *measures that were challenged in the original proceeding* where the claims against those measures were not definitively resolved in the original proceeding, in situations where the assertion of claims against those measures at the compliance stage would not compromise the finality of the DSB recommendations and rulings.[303] The DOD aeronautics R&D measures the focus of this particular ruling request do not, however, concern such "original measures". Rather, the measures the focus of this objection concern measures that were *not* part of the original proceeding.

7.151. The European Union asserts that the measures in question all came into existence after the original panel request; in other words, the measures are *post-2006* procurement contracts and assistance instruments, albeit funded through RDT&E program elements *other than* the 23 RDT&E program elements at issue in the original proceeding.

7.152. For purposes of evaluating the United States' request for preliminary rulings regarding the DOD aeronautics R&D measures, it is helpful to categorize these measures in the following manner:

a. pre-2007 procurement contracts or assistance instruments funded under the original 23 RDT&E program elements (i.e. the procurement contracts and assistance instruments that were before the panel in the original proceeding);

b. post-2006 procurement contracts or assistance instruments funded under the original 23 RDT&E program elements (i.e. procurement contracts and assistance instruments that were entered into after the date of the original panel request in January 2006 but funded through the same program elements that were the focus of the European Communities' claims in that proceeding); and

c. post-2006 procurement contracts or assistance instruments funded under other "additional" RDT&E program elements that are different from the original 23 RDT&E program elements, or their successor programmes (i.e. procurement contracts and assistance instruments entered into after the date of the original panel request in January 2006 but funded through different program elements from those that were the focus of the European Communities' claims in that proceeding).

7.153. The United States' request currently before us concerns certain measures in category (c) above.[304] The United States objects to our consideration of these measures because the "additional" RDT&E program elements that funded the relevant instruments (procurement contracts and assistance instruments) existed at the time of the panel request in the original

[301] We address the overlapping challenge to the provision of access to DOD "equipment and employees" provided to Boeing through procurement contracts and assistance instruments funded under all of the challenged RDT&E program elements in Section 7.3.4.

[302] "{p}roceedings under Article 21.5 do not concern just *any* measure of a Member of the WTO". (See Appellate Body Report, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36). See also Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 78.

[303] See paras. 7.108 to 7.110 above.

[304] The United States does not allege that the post-2006 procurement contracts funded under the original 23 RDT&E program elements (i.e. the measures in category (b) above), are outside the scope of this proceeding.

proceeding, and therefore, could have been challenged by the European Communities at that time. According to the United States, the European Union cannot retroactively attempt to enlarge the scope of its original case by seeking to bring these measures within the scope of the compliance proceeding.[305]

7.154. The European Union justifies the inclusion of these measures within the scope of this compliance proceeding by arguing that the particular RDT&E program elements were not a defining aspect of the European Communities' claims in the original proceeding. Rather, the original challenge involved any DOD RDT&E program element that subsidized Boeing LCA at that time.

7.155. The European Union's characterization of the DOD-related measures in the original proceeding does not accord with our understanding of those measures, as expressed by the original panel. We note that the panel in the original proceeding considered the nature of the European Communities' challenges to the DOD-related measures to be narrowly defined:

> The scope of the European Communities' claim relating to DOD R&D measures is clear: it challenges the payments (and access to facilities) provided to Boeing through R&D contracts and agreements entered into under the 23 programmes identified in the European Communities' panel request. The scope of the European Communities' claim is relatively narrow in several respects.
>
> First, the European Communities does not challenge the RDT&E Program as a whole. Rather, it challenges *only certain funding* provided to Boeing under the 23 RDT&E programmes at issue. In addition, the European Communities does not challenge all of the funding that Boeing received under these 23 programmes. Rather, it challenges *only the subset of funding that is, in the European Communities' view, related to "dual use" technologies*.[306]

7.156. The original panel's formulation makes clear that the DOD-related measures before it were particular forms of funding and support provided to Boeing *under specific RDT&E program elements*. It was *within* those program elements that the European Communities challenged a narrower subset of "funding" and "support" that it considered to relate to "dual-use" technologies.

7.157. Therefore, we do not agree that, regardless of the RDT&E program element, any payments or provision of access to DOD facilities, equipment or employees provided by DOD to Boeing for any activities that the European Union may now consider to relate to "dual-use" technologies, regardless of the program element under which it is budgeted and funded, is within the scope of this compliance proceeding. This would be contrary to our understanding of the scope of the European Communities' DOD-related claims in the original proceeding and an impermissible enlargement of the scope of this compliance proceeding.

7.158. The United States argues that the European Union is precluded from raising claims concerning the "additional" RDT&E program elements in this proceeding because those *program elements* existed at the time of its original panel request and could have been challenged in the original proceeding. We are also unable to endorse this argument, insofar as it concerns procurement contracts and assistance instruments entered into after the date of the European Communities' original panel request (i.e. post-2006 procurement contracts and assistance instruments), albeit funded through program elements that already existed at that time. In this situation, the issue of "preclusion" does not arise because, even if the RDT&E program elements (or their antecedent program elements) were in existence at the time of the European Communities' original panel request, the legal instruments were not. It would not have been possible for the European Communities to have challenged the program elements independently of the legal instruments because the only way that Boeing receives payments or access to DOD facilities, equipment, and employees under the RDT&E program elements is through specific legal instruments, whether procurement contracts or assistance instruments.

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[305] We recall that for the reasons explained in Section 7.3.2 of this Report, we have ruled that the procurement contracts in categories (a) and (b) above are within the scope of this proceeding.

[306] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1116 and 7.1117. (italics and underlining added)

7.159. We will therefore examine the United States' objections to the inclusion within the scope of this proceeding of procurement contracts and assistance instruments funded under "additional" RDT&E program elements by determining whether the procurement contract or assistance instrument existed at the time of the European Communities' original panel request. If it did, and we consider that the European Union could have challenged that measure in the original proceeding, we will find that the European Union is precluded from bringing claims against that measure in this proceeding.

7.160. If the procurement contract or assistance instrument came into existence after the date of the panel request in the original proceeding, or we otherwise conclude that the European Communities could not have challenged the measure in the original proceeding, we will examine whether there are sufficiently close links, in terms of nature, effects, and timing, between that measure and the aeronautics R&D measures the subject of the DSB recommendations and rulings, and any declared compliance actions by the United States, as to warrant inclusion of the measure within the scope of this proceeding.

7.161. In the Sections that follow, we evaluate the United States' objections according to each of the challenged "additional" RDT&E program elements.

Materials and Biological Technology (PE 0602715E)

7.162. The Materials and Biological Technology (PE 0602715E) program element is administered by the Defense Advanced Research Project Agency (DARPA) and develops novel metallic and non-metallic materials, material processing techniques, mathematical models, and fabrication strategies for advanced structural materials, functional materials, and components.[307]

7.163. The United States notes that this program element existed at the time of the European Communities' panel request in the original proceeding.[308] The European Union does not dispute that the program element itself existed at the time of the original panel request. Rather, it responds that its claims with respect to this program element are limited to the specific LCA-relevant R&D activities identified by Mr Rumpf, and that these *activities* did not exist, or at least were not publicly disclosed, prior to 2007.[309] The Rumpf Report refers to six general activities undertaken pursuant to a Materials Processing Technology Project between FY 2007 and FY 2012.[310] The United States acknowledges that during the 2007-2012 period, DARPA funded three procurement contracts and four assistance instruments under the "Materials Processing Technology" Project of this program element for a total of somewhat less than USD 24 million.[311]

7.164. Of the procurement contracts and assistance instruments identified by the United States, one procurement contact (HR0011-05-C-0068) and one cooperative agreement (MDA972-03-2-0003), are dated prior to the date of the European Communities' panel request in the original proceeding.[312] As these two instruments existed at the time of the European

[307] Materials and Biological Technology Budgets for FY 2007-FY 2013 (PE 0602715E), (Exhibit EU-73), p. 1.

[308] United States' request for preliminary rulings, dated 13 November 2012, para. 13. See also U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), at p. D-4 which shows budget allocations for this program element for FY 2005 and FY 2006.

[309] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20.

[310] Rumpf Report, (Exhibit EU-23), annex A, pp. 11-15. Although the Rumpf Report itself lists the Project number MBT-01 as the "Structures" project, the European Union subsequently explained that this was a clerical error in Annex A of the Rumpf Report, and that the correct title of Project number MBT-01 is "Materials Processing Technology" (European Union's comments on the United States' response to Panel question Nos. 72-74, para. 85). See also European Union's first written submission, para. 292, which refers to the "Materials Processing Technology" Project.

[311] United States' first written submission, para. 438; response to Panel question No. 72, para. 48. The procurement contracts are: DARPA Contract HR001-05-C-0068, (Exhibit USA-160) (HSBI); DOD Contract List, (Exhibit USA-161), p. 16: Contract HR0011-06-C-0073, dated 28 September 2006, (Exhibit USA-415) (HSBI); and DARPA Contract HR0011-08-C-0044, (Exhibit USA-162) (HSBI). The assistance instruments are: DARPA Agreement MDA972-03-2-0003, (Exhibit USA-163) (HSBI); DARPA Agreement HR0011-06-2-0008, (Exhibit USA-164) (HSBI); DOD Contract FA8650-07-2-7716, (Exhibit USA-165) (HSBI); and DARPA Cooperative Agreement HR0011-10-2-0001, (Exhibit USA-166) (HSBI).

[312] The effective date of DARPA Contract HR0011-05-C-0068 is 1 May 2005. The effective date of DARPA Agreement MDA972-03-2-0003 is 29 September 2003.

Communities' original panel request and were not challenged in the original proceeding, the European Union cannot challenge these measures in this compliance proceeding.

7.165. The remaining procurement contracts and assistance instruments identified by the United States bear effective dates subsequent to the date of the European Communities' panel request in the original proceeding. These post-2006 procurement contracts and assistance instruments were funded under RDT&E program elements that were in existence at the time of the original panel request, but not challenged by the European Communities in the original proceeding. As we explain in paragraph 7.160, in order to find these instruments within the scope of this proceeding, the Panel must be satisfied that there are sufficiently close links in terms of nature, effects, and timing between those measures and the aeronautics R&D measures the subject of the DSB recommendations and rulings.

7.166. In undertaking this close nexus analysis, we recall that in the original proceeding, the panel found that the R&D performed under the NASA and certain of the DOD measures at issue focused on the development of particular technologies that were considered to be the most crucial to the LCA industry, in that they carried the greatest prospect of creating significant competitive advantage by promising airline customers lower direct operating costs and reducing the time to market.[313] The key technology areas involved composites technologies, open systems architecture, enhanced aerodynamics and structural design, noise reduction technologies, and health management systems.[314] In concluding that the aeronautics R&D subsidies were designed to develop and validate new technologies for Boeing to commercialize, and that they contributed in a genuine and substantial way to Boeing's development of technologies for the 787, thereby conferring a competitive advantage on Boeing, the panel characterized the aeronautics R&D subsidies in the following manner:

> {W}e would characterize the NASA R&D subsidies as strategically-focused R&D programmes with a significant and pervasive commercial dimension, undertaken in collaboration with U.S. industry to provide competitive advantages to U.S. industry by funding research into high risk, high pay-off research of the sort that individual companies are unlikely to fund on their own. The DOD R&D subsidies funded through the ManTech and DUS&T programmes under DOD's RDT&E Program are focused on pursuing "dual use" technologies through collaborative efforts with U.S. industry.[315]

7.167. We have reviewed these procurement contracts and assistance instruments, all of which are HSBI, and certain of which contain International Traffic in Arms Regulations (ITAR) controls regarding the objectives of the efforts[316], as well as the parties' submissions regarding them, which are also HSBI. While we note that, unlike the aeronautics R&D subsidies before the original panel, the measures before us clearly have solely military objectives, it nevertheless appears to us that the nature of the technologies is closely related to certain of the key technologies that were the focus of the research efforts under the original aeronautics R&D subsidies, particularly as regards non-autoclave manufacturing technologies and **[[HSBI]]**. On the basis of this technological link, we consider that in order for the Panel to undertake a meaningful review of whether the United States has complied with the DSB recommendations and rulings, it is appropriate to include the European Union's claims regarding payments and access to DOD facilities, equipment, and employees provided through the procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 statement of work (SOW) and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001 funded through the Materials Processing Technology Project of the Materials and Biological Technology program element as within the scope of this proceeding.[317]

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[313] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1742 and 7.1745.

[314] These technologies and the parties' arguments as to the relationship between the R&D measures and Boeing's development of 787 technologies in specific technology areas is discussed in appendix VII.F.1 of the Panel Report, *US – Large Civil Aircraft (2nd complaint*).

[315] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1764.

[316] The instruments subject to ITAR restrictions are those submitted as: DARPA Contract HR001-05-C-0068, (Exhibit USA-160) (HSBI); DARPA Contract HR0011-08-C-0044, (Exhibit USA-162) (HSBI); and DARPA Cooperative Agreement HR0011-10-2-0001, (Exhibit USA-166) (HSBI).

[317] For the sake of completeness, we note that while the European Union at paragraph 292 of its first written submission refers also to a "Disruptive Manufacturing Technology Initiative" in relation to the Materials and Biological Technology program element, the United States has indicated that none of the procurement

7.168. The Panel finds that procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 SOW and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001 funded through the Materials Processing Technology Project of the Materials and Biological Technology program element are within the scope of this proceeding.

Technology Transfer (PE 0604317F)

7.169. The Technology Transfer (PE 0604317F) program element is an Air Force program element, the objectives of which are three-fold: (a) integrating advanced commercial-sector technologies into DOD systems, particularly from non-traditional defense contractors; (b) spinning off DOD-developed technologies to industry to make these technologies available for military acquisition; and (c) establishing collaborative R&D projects with the private sector for cost-sharing of new dual-use technology development.[318]

7.170. The European Union asserts in its first written submission that this RDT&E program element was initiated in FY 2012[319], however, it responds in its supplemental submission[320] (filed after its first written submission but before its second written submission) that its claims with respect to this program element are limited to the Partnership Intermediary Agreement(s) Project, which began in 2012.[321] The Partnership Intermediary Agreement(s) Project is described in the FY 2012 budget estimates as an effort to enhance and expand transfer of technologies between DOD and the commercial sector. The 2012 base plans indicate that this would be done by promoting and brokering cooperative research and development agreements between DOD laboratories and industry for development of technology with both commercial and military applications with the intention that this activity will help lower the expense of new defense-related technology development through cost-sharing with industry and to help DOD benefit from private-sector technology investments and innovations.[322]

7.171. The United States notes that the Technology Transfer (PE 0604317F) program element continues work that was previously undertaken under the Technology Link (PE 0603942D8Z) program element.[323] Moreover, it indicates in response to questioning by the Panel that there were no assistance instruments or procurement contracts with Boeing funded through the Technology Transfer program element.[324]

7.172. The situation before us therefore appears to be that: (a) the European Union makes claims in respect of certain measures under the Technology Transfer program element; (b) the United States requests preliminary rulings that such claims are outside the scope of this proceeding because the program element in question existed at the time of the original panel request and was not challenged in the original proceeding; (c) the European Union clarifies that its

contracts or assistance instruments it has identified as being funded under the Materials and Biological Technology program element were part of the Disruptive Manufacturing Technology Initiative. (United States' response to Panel question No. 72, para. 48).

[318] Technology Transfer Budgets for FY 2012-FY 2013 (PE 0604317F), (Exhibit EU-75), FY 2012, pp. 1 and 2, and FY 2013, p. 1.

[319] European Union's first written submission, para. 298.

[320] See para. 7.135 above.

[321] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20. The Rumpf Report refers to a project entitled "Partnership Intermediary Agreement(s)" (646003) from FY 2012. (See Rumpf Report, (Exhibit EU-23), annex A, p. 25).

[322] Technology Transfer Budgets for FY 2012-FY 2013 (PE 0604317F), (Exhibit EU-75), FY 2012, p. 2.

[323] United States' request for preliminary rulings, dated 13 November 2012, para. 14. See also U.S. DOD Fiscal Year (FY) 2012 Budget Estimates: Research, Development, Test & Evaluation, Air Force, Vol. 2, February 2011, (Exhibit USA-4), p. 255 (which indicates that the Technology Transfer program element was called Defense Technology Transfer in previous Office of Secretary of Defense budgets and prior to that, Defense Technology Link (TechLink)); U.S. DOD Budget, Fiscal Year 2011 RDT&E Programs (R-1), February 2010, (Exhibit USA-5), p. D-7; and U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), p. D-6 (which shows the funding allocated to the Technology Link program element for FY 2004, FY 2005, and FY 2006).

[324] United States' response to Panel question No. 75, para. 51. The United States explains that its previous assertion, at paragraph 440 of its first written submission, that the Technology Transfer program element funded one procurement contract during the 2007-2012 period (a contract to develop, test, and demonstrate a multi-shot and multi-target aerial high power microwave demonstrator that is capable of degrading, damaging or destroying electronic systems) was mistaken. This procurement contract was in fact funded through the Technology Transition (PE 0604858F) program element which has not been challenged by the European Union in this proceeding. The European Union makes no comment on this response.

claims in respect of this program element in fact concern a project under that program element that began in 2012 and therefore could not have been challenged in the original proceeding; and (d) it emerges from the European Union's clarification and the evidence provided by the United States that Boeing is not a party to any instruments (procurement contracts or assistance instruments) funded through either the 2012 project identified by the European Union or the Technology Transfer program element.

7.173. The end result, at least from a practical perspective, is that the European Union has not demonstrated that the requisite measures exist in relation to its claims concerning this program element.

7.174. Given that there are no procurement contracts or assistance instruments with Boeing funded through the relevant project under the Technology Transfer program element, the Panel is not satisfied that there is a measure in existence involving this RDT&E program element.

Manufacturing Technology/Industrial Preparedness (IP ManTech) (PE 0708011S)

7.175. The Manufacturing Technology/Industrial Preparedness (IP ManTech) (PE 0708011S) program element is the Defense Logistics Agency ManTech Program. The European Union presents this program element as being part of a collection of Manufacturing Technology/Industrial Preparedness program elements administered individually by the Defense Logistics Agency, Air Force, Navy, and Office of Secretary of Defense, respectively.[325] The European Communities' claims in the original proceeding covered only the Air Force and Navy ManTech program elements.[326] In other words, the European Communities did not challenge the Defense Logistics Agency's IP ManTech (PE 0708011S) program element in the original proceeding.

7.176. The DOD Budget for RDT&E programmes for FY 2006, however, shows allocations for this program element for FY 2004, FY 2005, and FY 2006. This supports the United States' position that the Defense Logistics Agency's IP ManTech program element was in existence prior to 2006.[327]

7.177. The European Union argues that its claims with respect to this RDT&E program element are limited to the Procurement Readiness Optimization-Advanced Casting Technology (PRO-ACT) Project, which began in 2011.[328] According to the European Union, this project aims to develop digital radiography for non-destructive evaluation of castings, and builds on a related Air Force ManTech Project.[329] As the PRO-ACT Project (which is the subject of the European Union's claims in respect of the Defense Logistics Agency's IP ManTech program element) commenced in 2011, we do not consider that the European Union can be faulted for not challenging this program element in the original proceeding.

7.178. The United States argues, however, that the PRO-ACT Project was a USD 350,000 effort involving six other "participants" and that DOD did not make any payments to Boeing.[330] In response to further questioning by the Panel, the United States explains that Boeing was not given a contract or a subcontract on any Defense Logistics Agency casting research and development project.[331] Rather, the relevant contracts were awarded to an entity now called "Advanced Technology International", doing business as "SCRA Applied R&D".[332] While Boeing is listed as one

[325] European Union's first written submission, paras. 270, 275, 277, 280, and 281.
[326] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1114 (listing the challenged program elements as "Manufacturing Technology/Industrial Preparedness (PE 0603771F/0708011F/0708011N)").
[327] U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), pp. D-14 and D-39.
[328] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20; Rumpf Report, (Exhibit EU-23), annex A, p. 27.
[329] European Union's first written submission, para. 280 (referring to Use of Digital Radiography for Final Part Acceptance of Aerospace Castings project). See also U.S. DOD, Manufacturing Technology Program, "Use of Digital Radiography for Final Part Acceptance of Aerospace Castings", available at <https://www.dodmantech.com/ManTechPrograms/Files/AirForce/AF_Digital%20Radiography_Sept11_Final.pdf>, accessed 29 August 2016, (Exhibit EU-297).
[330] United States' first written submission, para. 443.
[331] United States' response to Panel question No. 77, para. 60.
[332] "SCRA" is an abbreviation for South Carolina Research Authority. United States' response to Panel question No. 77, para. 60.

of the "participants" in the project, the United States speculates that this could reflect some involvement by Boeing with a subcommittee of the American Society for Testing and Materials, which is a broad-based association dedicated to the generation of standards for industrial use.[333] In any case, the fact that the Defense Logistics Agency cannot find any information recording the nature of Boeing's involvement in the project indicates that any role it had as a "participant" was insignificant.[334]

7.179. The European Union responds by alleging that Boeing does not receive any contracts or subcontracts directly from DOD because DOD "funnels its funds" through the American Metalcasting Consortium (AMC), which is managed and operated by the South Carolina Research Authority.[335] The European Union notes that the South Carolina Research Authority is a "quasi-public economic development agency", which is located adjacent to Boeing's South Carolina facilities. The Chairman of the Board of Trustees of the South Carolina Research Authority is a Boeing executive.[336]

7.180. We see nothing in the evidence before us to suggest that the AMC and South Carolina Research Authority operate as organizations that act as conduits for providing payments and access to DOD facilities, equipment, and employees to Boeing that would otherwise be provided by DOD directly through procurement contracts and assistance instruments. We have no reason to suspect that the United States' assertions that, whatever the nature of Boeing's apparent "participation" in the USD 350,000 PRO-ACT Project, it did not involve the receipt of payments or access to DOD facilities, equipment, or employees though procurement contracts or assistance instruments, have not been made in good faith. The Panel therefore is not satisfied that there are any procurement contracts or assistance instruments with Boeing funded through the PRO-ACT Project within the Defense Logistics Agency's IP ManTech program element.

7.181. The Panel considers this situation to be similar to that of the Technology Transfer program element, described above. As a result of the European Union's clarification of the limited nature of its challenge to this program element, and the absence of evidence demonstrating that Boeing was in fact party to any procurement contracts or assistance instruments funded under the identified project, we conclude that the European Union has not demonstrated that the requisite measures exist in relation to this program element.

7.182. Given that there are no procurement contracts or assistance instruments with Boeing that are funded through the PRO-ACT Project (which is the subject of the European Union's claims concerning the IP ManTech program element), the Panel is not satisfied that there is a measure in existence involving this RDT&E program element.

Airborne Warning and Control System (AWACS) (PE 0207417F)

7.183. The Airborne Warning and Control System (AWACS) (PE 0207417F) program element is an early warning and control system based on a variant of the Boeing 707 (the E-3 Sentry), which first entered service in 1977.[337] The United States points to DOD budget documentation showing allocations for this program element in FY 2004, FY 2005, and FY 2006, indicating that this project element was in existence (and could have been challenged by the European Communities) at the time of the original panel request.[338] The European Union responds that its claims with respect to this RDT&E program element are limited to the Diminishing Manufacturing Sources Replacement of

[333] The United States refers more specifically to the ASTM Committee E07.02 on Reference Radiological Images, under the ASTM Committee E07 on Non-destructive Testing.

[334] United States' response to Panel question No. 77, para. 61.

[335] European Union's comments on the United States' response to Panel question No. 77, para. 92.

[336] European Union's comments on the United States' response to Panel question No. 77, para. 92. The material to which the European Union refers indicates that this Boeing executive "has become a high profile member of the Charleston community" who has also served on the Medical University of South Carolina Board of Visitors and as 2nd Vice Chairman of the South Carolina Manufacturers Alliance. (B. Kearney, "Boeing S.C. executive to oversee supply chain in Italy", *The Post and Courier*, 6 September 2012, (Exhibit EU-1408)).

[337] Boeing Backgrounder, *E-3 Airborne Warning and Control System (AWACS)*, (June 2012), (Exhibit EU-338), p. 1.

[338] U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), p. F-9.

Avionics for Global Operations and Navigation (DRAGON) Project, in which Boeing has been involved since 2010.[339]

7.184. Throughout its history, AWACS has undergone extensive enhancements, with fleets from the United States, North Atlantic Treaty Organization (NATO), United Kingdom, and France upgrading their communications, computers, and navigation.[340] The DRAGON Project aims to equip the E-3 fleet with flight deck and other avionics capabilities that will allow AWACS to comply with mandated global Required Navigation Performance, surveillance, and communication standards.[341] DRAGON seeks to achieve these upgrades using commercial off-the-shelf components supplied by companies such as Rockwell Collins, Telephonics, Raytheon, Thales, and EMS.[342]

7.185. The United States explains that the DRAGON Project is a joint effort between the United States and NATO, with NATO contributing 34% of the total cost.[343] Under Air Force Contract F10628-01-D-0016 between the U.S. Air Force and Boeing, Boeing was awarded Delivery Order (D.O) 73 to perform Engineering, Manufacturing and Development (EMD) – Phase I of the DRAGON Project.[344] In this initial phase, which commenced on 18 July 2011, Boeing conducted a Subcontractor System Readiness Review and began working with subcontractors Rockwell Collins and Telephonics on their subsystem requirements effort.[345] The United States asserts that Boeing's work under Phase I consisted in essence of evaluating the capabilities of certain subcontractors to provide the required flight deck and avionics subsystems intended for installation in AWACS aircraft, as well as beginning the subcontracting process.[346] Phase I ended upon the award of Phase II on 14 November 2011 under modification 2 to D.O. 73.[347] Under DRAGON EMD Phase II, Boeing is to: (a) incorporate the new commercial off-the-shelf avionics and communications systems from other suppliers into the existing systems; (b) develop a design to install the new equipment; (c) upgrade one aircraft for each AWACS fleet; (d) flight test the new systems; (e) develop logistics support data; and (f) train flight crews and maintenance personnel.[348]

7.186. The United States argues that it was "obvious" at the beginning of 2006 that the AWACS involved military aircraft produced by "militarizing" civilian airframes. As this fact lies at the heart of all of the European Union's arguments regarding this program element, the United States considers it difficult to see how the European Union discovered something about the dual-use potential of this program element in 2007 that changed its views.[349]

7.187. We note that the AWACS budget estimates for FY 2007 refer to the Avionics Modernization Program which would complete the FAA/ICAO/EUROCONTROL mandated air traffic control system

[339] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20; and Rumpf Report, (Exhibit EU-23), para. 4.2. Mr Rumpf expresses the opinion, at paragraph 4.3.1 of the Rumpf Report, that the DRAGON Avionics Project is the only effort under the AWACS program element to involve "dual-use" R&D.

[340] Boeing Backgrounder, *E-3 Airborne Warning and Control System (AWACS)*, (June 2012), (Exhibit EU-338), p. 1.

[341] Rumpf Report, (Exhibit EU-23), para. 4.2. See also Airborne Warning and Control System (AWACS) Budgets for FY 2007-FY 2013 (PE 0207417F), (Exhibit EU-76), exhibit R-2, item 148, p. 1, frame 86/98.

[342] "Enter the DRAGON – NATO & USSA Upgrading E-3 AWACS Cockpits", *Defense Industry Daily*, 14 June 1012, (Exhibit USA-506).

[343] United States' second written submission, para. 405, fn 550. This means that the amount obligated under Air Force Contract F19628-01-D-0016, D.O. 73 are 66% funded by DOD and 34% funded by NATO.

[344] United States' first written submission, para. 450; response to Panel question No. 78, para. 66; and Air Force Contract F19628-01-D-0016, D.O. 73, (Exhibit USA-170) (HSBI).

[345] United States' response to Panel question No. 78, para. 66; and Air Force Contract F19628-01-D-0016, D.O. 73, (Exhibit USA-170) (HSBI), p. 2.

[346] United States' response to Panel question No. 78, para. 66.

[347] United States' response to Panel question No. 82, para. 79.

[348] United States' response to Panel question No. 82, para. 80; and Boeing Press Release, "Boeing to Modernize Flight Deck and Avionics for US and NATO AWACS Fleets", 23 May 2013, (Exhibit EU-1334).

[349] United States' second written submission, para. 62. United States notes that the statement of work for Delivery Order 73 is subject to Distribution F limitations, which restrict distribution of the contents to DOD and NAPMO/NATO. According to the United States, this restriction clearly indicates that any technology and related technological data/computer software developed under this Delivery Order has little application in the civilian sphere. (See United States' first written submission, para. 450). The European Union requested the Panel to require the United States to remove the Distribution F limitations on the statement of work for Delivery Order 73 under DOD contract F10628-01-D-0016 in a communication to the Panel date 9 September 2013. In a communication dated 23 October 2013, the Panel said that it had decided not to grant the request at that time. See Section 1.3.3.3 of this Report and Annex F-1.

upgrades and equip the E-3 fleet with flight deck and other avionics capabilities that will allow AWACS to comply with mandated global Required Navigation Performance, surveillance, and communication standards.[350] While the project cost analysis in the budget estimates indicates that Boeing would be involved in the Avionics Modernization Program, the schedule profile envisages that the core work under the Avionics Modernization Program would not commence until FY 2008.[351] In these circumstances, it is difficult to imagine how the European Communities could feasibly have challenged any activities related to the DRAGON Project of the AWACS RDT&E program element in its original panel request in 2006. The work had clearly not commenced until much later in the process.[352] We therefore do not agree with the United States that the European Union is precluded from bringing claims in relation to the DRAGON Project under the AWACS program element in this compliance proceeding.

7.188. The further question, however, is whether the Air Force Contract F19628-01-D-0016, D.O. 73 awarded to Boeing under the DRAGON Project is sufficiently closely connected, in terms of its nature, effects, and timing, to the aeronautics R&D subsidies the subject of the DSB recommendations and rulings so as to be within the scope of this proceeding as an "undeclared" measure taken to comply.

7.189. Mr Rumpf considers that DRAGON upgrades the E-3 flight deck in ways that give rise to the development of an improved system engineering and open systems architecture that can be applied by Boeing to LCA.[353] The United States responds that: (a) the DRAGON Project is remedial in nature, aiming to update systems to enable the E-3 to transit civil airspace in the same way that commercial aircraft already do; (b) elements of the DRAGON system upgrades are strictly military in nature, therefore it is incorrect to consider that the project's avionics have "100%" relevance to LCA development; and (c) the project addresses problems with the E-3 that are not shared by Boeing's LCA. Indeed, the DRAGON Project's use of commercial off-the-shelf avionics from other suppliers underscores that the project is focused on leveraging existing civil technology to improve outdated military equipment.[354]

7.190. We refer to our discussion in Section 8.2.3.2.3 of this Report of the nature of R&D conducted under systems acquisition/military aircraft program elements such as the AWACS program element. RDT&E activities conducted under these program elements are specifically directed to the development of a new weapon system or upgrading or enhancing of an existing weapon system, and more particularly, addressing particular problems with respect to a particular product. In this context, we are not satisfied that a general allegation by the European Union that upgrading the flight deck and avionics subsystems for a particular military aircraft could give rise to improved systems engineering and open systems architecture of more general applicability is sufficient, without more, to demonstrate the required close nexus between the Air Force Contract F19628-01-D-0016, D.O. 73, and the NASA and DOD aeronautics R&D subsidies subject to the DSB recommendations and rulings. In particular, there is nothing before us to suggest that our failure to consider the European Union's claims concerning the relevant instrument funded under the AWACS DRAGON Project as part of this compliance proceeding would undermine our ability to undertake a meaningful assessment of whether the United States has complied with the DSB recommendations and rulings in the original proceeding. We are therefore not satisfied that the European Union has demonstrated that this measure is within the scope of this proceeding as an "undeclared" measure taken to comply.

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[350] Airborne Warning and Control System (AWACS) Budgets for FY 2007-FY 2013 (PE 0207417F), (Exhibit EU-76), exhibit R-2, p. 1428.

[351] Airborne Warning and Control System (AWACS) Budgets for FY 2007-FY 2013 (PE 0207417F), (Exhibit EU-76), exhibits R-3, p. 1433 and R-4, p. 1434.

[352] The United States explains that the AWACS DRAGON cockpit upgrade was defined in EMD Project Arrangement 3 pursuant to the six-party memorandum of understanding concerning project for the E-3 fleets. (United States' response to Panel question No. 82, para. 78; and Memorandum of Agreement Between the United States of America and the NATO AEW&C Programme Management Organization signed at Washington and Brunssum, 10 and 30 August 1999, (Exhibit USA-459)). However, while the United States refers to the DRAGON EMD Project Arrangement 3 (which would have listed the scope of the work envisaged for the DRAGON cockpit upgrade and potentially therefore, have provided a basis for the European Communities to have challenged the work in the original proceeding as potentially involving "dual-use" R&D), it does not provide this instrument or indicate when it was signed.

[353] Rumpf Report, (Exhibit EU-23), para. 4.2; and European Union's first written submission, para. 302.

[354] United States' response to Panel question No. 78, para. 72.

7.191. The Panel grants the United States' request and finds that Air Force Contract F19628-01-D-0016 funded under the DRAGON Project of the AWACS (PE 0207417F) program element is outside the scope of this proceeding.

KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F)

7.192. The KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element is the initial increment of the Air Force's tanker modernization programme, involving conversion of a commercial derivative aircraft into an aerial refueling tanker. The existing KC-135 Stratotanker fleet is over 50 years old on average and is increasingly costly to maintain and support. The U.S. Air Force plans to develop, test and field 18 KC-46 tankers by August 2017 and eventually have a total of 179 aircraft in operation by 2027.[355]

7.193. The United States objects to the inclusion of this program element within the scope of this proceeding on the basis that the KC-46, Next Generation Aerial Refueling Aircraft program element continues work that was previously conducted under the KC-135 Replacement Tanker (PE 0401221F) program element, which existed at the time of the original panel request and was not challenged in the original proceeding.[356]

7.194. The European Union responds that the EMD Contract for the KC-46 aerial refueling tanker was awarded to Boeing in February 2011, which is clearly after the date of the original panel request.[357]

7.195. The United States notes that the EMD Contract was awarded to Boeing in 2011 after a process which had involved cancellation in 2005 of an initial effort to acquire use of new tankers, a second procurement effort commenced by the Air Force in 2006, in which Northrop Grumman was successful in 2008, but which decision was subsequently overturned by the U.S. Comptroller General in 2008 after a protest by Boeing, and a third procurement effort in which Boeing was successful in 2011.[358] The United States argues that it was obvious in 2006 that the KC-46 aerial refueling tanker would be a military aircraft produced by militarizing civilian airframes. It is thus difficult to see how the European Union discovered something about the dual-use potential of this program element in 2007 that changed its view.[359]

7.196. Although the KC-46, Next Generation Aerial Refueling Aircraft program element continues work previously conducted under the KC-135 Replacement Tanker program element, it seems clear to the Panel that, at the time of the European Communities' panel request in the original proceeding (January 2006), the request for proposal for the KC-X tanker had not been issued by the Air Force, let alone had a successful proposal been selected. Indeed, Northrup Grumman was the successful tenderer in the previous procurement effort in 2008, with a derivative Airbus aircraft. In these circumstances, it is not unreasonable that the European Communities did not include claims regarding the KC-135 Replacement Tanker program element in the original proceeding.

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[355] U.S. Government Accountability Office, *KC-46 TANKER AIRCRAFT: Program Generally Stable but Improvements in Managing Schedule Are Needed*, Report 13-258, (February 2013), (Exhibit USA-237), p. 1.

[356] United States' request for preliminary rulings, dated 13 November 2012, para. 14. See also KC-46, Next Generation Aerial Refueling Aircraft, Budgets for FY 2009-FY 2013, (PE 0605221F), (Exhibit EU-1072), budget for FY 2009, p. 1, which indicate that RDT&E funds for FY 2009 and beyond were transferred from the KC-135 Replacement Tanker (PE 401221F) program element; and U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), p. F-13, which shows a budget allocation for the KC-135 Replacement Tanker (PE 0401221F) program element for FY 2006.

[357] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20; first written submission, para. 304; Rumpf Report, (Exhibit EU-23), para. 4.2, p. 10; and Air Force Contract FA8625-11-C-6600 (KC-46 Contract), (Exhibit USA-365) (HSBI). In its Annual Report on Form 10-K for the year ended 31 December 2014, Boeing disclosed that in the second quarter of 2014 it declared a reach-forward loss of USD 425 million on the KC-46A tanker contract, which was a fixed-price development contract, owing to higher estimated costs. Boeing's Commercial Airplanes segment recorded USD 238 million of this loss. (Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A, "Annual Report on Form 10-K for the year ended 31 December 2014", pp. 79 and 80).

[358] United States' first written submission, paras. 451 and 452; and C. Drew, "Boeing Wins Contract to Build Air Force Tankers", *New York Times*, 24 February 2011, (Exhibit USA-236).

[359] United States' second written submission, para. 62.

7.197. We have reviewed Mr Rumpf's assessment of the R&D involved in this program element that is potentially dual-use to LCA.[360] This assessment refers in a very generalized way to technological areas such as the use of performance based logistics incorporating micro-sensors in the KC-46 airframe, avionics R&D related to communications, navigation and adverse weather capabilities, physics-based modelling and simulation activities for improved design of the test and evaluation flight and ground tests, and multiple systems management technologies and processes.

7.198. We refer to our discussion in Section 8.2.3.2.3 of this Report of the nature of R&D conducted under systems acquisition/military aircraft program elements such as the KC-46, Next Generation Aerial Refueling Aircraft program element. RDT&E activities conducted under these program elements are specifically directed to the development of a new weapon system or upgrading or enhancing of an existing weapon system, and more particularly, addressing particular problems with respect to a particular product.[361] We are not satisfied that generalized allegations regarding the potential applicability to LCA of certain broad technology areas, without an explanation of how those technology areas overlap with the technology areas that were the focus of the NASA and DOD aeronautics R&D subsidies the subject of the DSB recommendations and rulings[362], are sufficient to demonstrate the required close nexus, in terms of nature or effect, between the measures identified with respect to the KC-46, Next Generation Aerial Refueling Aircraft program element and the NASA and DOD aeronautics R&D subsidies the subject of the DSB recommendations and rulings.

7.199. The Panel grants the United States' request and finds that Air Force Contract FA8625-11-C-6600 funded through the KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element is outside the scope of this proceeding.

Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N)

7.200. The Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element provides the replacement systems for the P-3 and EP-3 aircraft. In 2002, the U.S. Navy decided on an acquisition strategy for the concept and design phase of a multi-mission maritime aircraft to replace the ageing P-3 and EP-3 submarine-chasing aircraft. Boeing, as one of the two "concept and design" contractors, subsequently competed in the engineering and manufacturing development phase, proposing a modified version of Boeing 737 aircraft.[363] In June 2004, the Navy awarded Boeing contract N00019-04-C-3146 to develop and demonstrate the system, with plans to enter production and deployment in 2010.[364] Following a critical design review in 2007, Boeing received approval to fabricate the flight test aircraft in 2007. The programme then moved into low rate initial production (LRIP) as part of the production and deployment phase in 2010.[365] The Navy issued separate contracts N00019-09-C-0022 and N00019-12-C-0112 for the subsequent LRIP lots.[366]

7.201. The United States asserts that "by far" the largest contract funded through the "additional" RDT&E program elements is the System Development and Design contract for the P-8A, which was awarded in 2004. The United States considers that, if the European Union is recognizing that DOD only makes payments or provides facilities, equipment, and employees pursuant to a contract or agreement, and that those are the relevant measures, the P-8A Contract is clearly outside the scope of this proceeding.[367] On the other hand, if the European Union is challenging design and testing without regard to the contract, those activities took place both before and after 2006, and the "measure" was in place at the time of the original panel request, and therefore cannot be

[360] Rumpf Report, (Exhibit EU-23), para. 4.3.3.
[361] See Sections 8.2.3.2.3 and 8.2.3.2.4 below.
[362] See para. 7.166 above.
[363] United States' first written submission, para. 458. The other contractor, Lockheed Martin, had proposed a P-3 derivative known as Orion 21.
[364] United States' first written submission, para. 458; and Navy Contract N00019-04-C-3146 (submitted on 16 January 2014), (Exhibit USA-367) (BCI). The contract is described as a system development and demonstration contract. The primary objectives of system development and demonstration are to perform the system detailed design, develop and produce Systems Integration Labs and develop and build ground and flight test articles and prepare for "Milestone C" which is production and deployment. See e.g. MMA 2006 Budget, Exhibit R-2, February 2005, (Exhibit USA-172), p. 1
[365] United States' first written submission, para. 458.
[366] United States' first written submission, para. 458.
[367] United States' second written submission, para. 63.

treated as a measure taken to comply in this proceeding.[368] In any case, the United States considers it was obvious in the beginning of 2006 that the P-8A would be military aircraft produced by militarizing civilian airframes, so it is difficult to see how the European Union discovered something about the dual-use potential of this programme in 2007 that changed its view.[369]

7.202. The European Union acknowledges that the Multi-Mission Maritime Aircraft (P-8A) program element existed at the time of the original panel request. The European Union makes a number of arguments to justify why it was not possible to have identified activities conducted by Boeing that were funded under this program element as potentially having "dual-use" application at the time of the original panel request in January 2006. First, the project had not in early 2006 progressed to the point at which the European Communities and its experts believed it was funding R&D relevant to Boeing's LCA division. According to the European Union, significant steps in the system development and demonstration process occurred after the date of the European Communities' original panel request.[370] Second, the DOD budget estimates gave no indication that "dual-use" R&D was being carried out. Indeed, the European Union argues that in this proceeding, it relied not on the RDT&E budget estimates in describing the "LCA-relevance" of work under the P-8A Program, but on the expert opinion of Mr Rumpf.[371] In this regard, the European Union submits a supplemental statement from Mr Rumpf, indicating that the conclusions he had reached in the Rumpf Report regarding the developments in the Multi-Mission Maritime Aircraft (P-8A) program element since 2006 were based on his "knowledge of developments with the P-8A Program since 2006, gained from press reports, defense-community and industry events, and conversations (to the extent permissible) with government and industry personnel (including former DOD colleagues)", viewed in light of his background knowledge and experience.[372] In short, the European Union argues that "almost all" of the information upon which it and its experts rely in concluding that the P-8A Program funds R&D that is "dual-use" to LCA, was first made public only after 20 January 2006 (this being the date of the European Communities' original panel request).[373]

7.203. We are not persuaded by the European Union's argument that it was unable to identify the relevant aspects of this RDT&E program element in January 2006 that would have enabled it to include it within the scope of its challenge in the original proceeding. Mr Rumpf states that the budget estimates for the P-8A program element since FY 2005 do not of themselves provide sufficient information to conclude that the R&D carried out under the P-8A program element is "dual-use" to LCA. We have no doubt that is correct, not only for the budget estimates for the P-8A program element, but for the budget estimates for all of the RDT&E program elements. It is not the purpose of the FYDP budget estimates to describe the particular research or to explain the specific technologies that are being developed under program elements at any time. For example, the budget estimates for the KC-46, Next Generation Aerial Refueling Aircraft program element, which like the P-8A, involves a derivative Boeing commercial aircraft (the 767), similarly do not provide information that points to the specific technologies that are being developed for application to the KC-46. The information on the "dual-use" potential of the KC-46 R&D work allegedly being conducted by Boeing, which is stated in the Rumpf Report is, as Mr Rumpf explains in his report, based on a combination of publicly available information such as the RDT&E budget estimates, along with his specific expertise in aerospace engineering, RDT&E budgeting and the markets for aerospace and defense products.[374] We note that Mr Rumpf purports to provide an "expert opinion" on the "dual-use" proportion of funding in the budget categories of "airframe", "propulsion", "avionics", "integration assembly & test", "armament", "test & evaluation", "systems engineering", and "data training and support equipment", under the KC-46 program element when Boeing was not awarded the EMD Contract for the KC-46 until February 2011. We do not find it credible that the European Communities' experts in the original proceeding, CRA, were unable in late 2005, based on what appears to be the same methodology later employed by Mr Rumpf, to

[368] United States' second written submission, para. 63.
[369] United States' second written submission, para. 62.
[370] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20; response to Panel question No. 63, para. 28, fn 66. Moreover, while Boeing was awarded the contract in 2004, the European Union did not have access to that contract until this compliance proceeding was under way. (European Union's response to Panel question No. 63, para. 28, fn 65).
[371] European Union's response to Panel question No. 63, para. 29.
[372] European Union's response to Panel question No. 63, para. 30 (referring to Supplemental Statement of R. L. Rumpf, M.S.A.E., November 2014, (Exhibit EU-1348) (HSBI), paras. 11 and 12).
[373] European Union's response to Panel question No. 63, para. 37.
[374] Rumpf Report, (Exhibit EU-23), para. 2.

identify potential "dual-use" technologies likely to be involved in Boeing's work under the Multi-Mission Maritime Aircraft (P-8A) program element, when Boeing had been awarded the EMD Contract for that project in June 2004.[375]

7.204. This is especially so, since it was widely known in 2004 that the P-8A would be developed as a derivative of the existing Boeing 737. The 2006 CRA Report noted that similarities between the C-17 aircraft and large civil aircraft justified the allocation of a larger proportion of RDT&E for the C-17 as potentially "dual-use".[376] It would seem logical for CRA to have considered the possibility at least, that Boeing's development of the P-8A as a derivative 737 would involve technologies with a similar potential relevance to large civil aircraft as it surmised to be the case with respect to the RDT&E for the C-17.

7.205. We conclude that, given that the Multi-Mission Maritime Aircraft (P-8A) program element had been in existence at the time of the European Communities' original panel request, and moreover, in light of the fact that the system development and demonstration Contract under the Multi-Mission Maritime Aircraft (P-8A) program element had already been awarded to Boeing in June 2004, the European Communities could have challenged payments and the access to facilities, equipment, and employees provided to Boeing through this instrument. We consider that it would be an inappropriate and unjustified enlargement of the scope of this proceeding to include measures in respect of the 2004 system development and demonstration Contract, as well as the subsequent contracts for low-rate initial production arising out of the work conducted under the 2004 system development and demonstration Contract, within the scope of this proceeding.

7.206. The Panel grants the United States' request and finds that the measures related to the Multi-Mission Maritime Aircraft (P-8A) RDT&E program element are outside the scope of this proceeding.

Long Range Strike Bomber (PE 0604015F)

7.207. The Long Range Strike Bomber (PE 0604015F) program element is a highly classified programme to develop a new large stealth bomber. The Long Range Strike Bomber program element was initially funded in FY 2011 and followed an earlier effort, which ended in 2009, to develop a "Next Generation Bomber".[377]

7.208. The United States argues that the Long Range Strike Bomber program element is the continuation of the "Next Generation Bomber" program element, which was in existence at the time of the original panel request and also carried the same program element number (PE 0604015F) in DOD budget documents.[378] The United States submits that, "although the budget request for 2011 refers to the effort in that year as a 'new start effort', there is a striking degree of overlap in the descriptions of the work conducted in 2008 and 2011."[379] The United States also asserts that "industry observers" share the perception that the current work

[375] In this respect, we note the backgrounds of the CRA principals responsible for preparing the 2006 CRA Report. One had previously worked as an industrial and financial analyst in the Office of the Secretary of Defense. The other had a 14 year career in engineering, design, and management with Lockheed Martin Corporation (CRA Report, (Exhibit EU-29), appendix L: CRA Staff Qualifications, L.1 and L.2). Lockheed Martin, along with Boeing, was one of the contractors awarded a CAD contract in 2002 prior to Boeing's selection as the contractor for the System Development and Design phase of the project in June 2004. In light of these connections, we find it difficult to believe that in 2005, the experts at CRA were unable to draw any conclusions as to whether Boeing's work under the Multi-Mission Maritime Aircraft (P-8A) program element at least potentially involved "dual-use" R&D.

[376] "The C-17 aircraft much more closely resembles an LCA than the other military aircraft programmes examined above. For example, it is very similar to LCA in size, weight and operating envelope (cruise speed, altitude, etc). In addition, it shares many configuration similarities with LCA … Finally it shares many internal system similarities with LCA … Consequently, solutions to the design and engineering challenges of the C-17 are logically more transferable to LCA." (CRA Report, (Exhibit EU-29), pp. 23 and 24).

[377] European Union's first written submission, para. 314; and Rumpf Report, (Exhibit EU-23), para. 4.2.

[378] United States' request for preliminary rulings, dated 13 November 2012, para. 13; response to Panel question No. 80, para. 74. See also U.S. DOD Budget, Fiscal Year 2006, RDT&E Programs (R-1), February 2005, (Exhibit USA-2), p. F-4; and Long Range Strike Bomber Budgets for FY 2007-FY 2013 (PE 0604015F), (Exhibit EU-78), p. 693.

[379] United States' response to Panel question No. 80, para. 74.

under the Long Range Strike Bomber program element is part of an ongoing effort.[380] According to the United States, DOD "cancelled" the Next Generation Bomber program element in order to allow time to refine the programme objectives. The resulting Long Range Strike Bomber program element is thus a "successor" to, and the work under that program element continues the work that was undertaken under, the "Next Generation Bomber" program element of the same PE number.[381]

7.209. The European Union notes that it is challenging the RDT&E conducted under the Long Range Strike Bomber program element *beginning in 2011*.[382] It refers to a DOD description of the Long Range Strike Bomber program element as a "new start" in 2011, thus implying that it is distinct from, and not a continuation of, the "Next Generation Bomber" program element.[383] The European Union argues that the Next Generation Bomber and Long Range Strike Bomber program elements were both intended to develop new bomber capabilities for the U.S. Air Force, however, the fact that the two program elements may have similar "missions" does not make the latter a continuation of the former.[384]

7.210. The United States indicates that the PE 0604015F program element provided funding in the 2007-2012 period for one assistance instrument and four procurement contracts.[385] The four procurement contracts identified by the United States all have effective dates prior to 2011.

7.211. The European Union indicates that instruments that pre-date the 2011 Long Range Strike Bomber (PE 0604015F) program element do not fall within the scope of its claims.[386] It explicitly concedes that delivery orders for contracts F33615-00-D-3052, D.O. 90, FA8650-08-D-3857, D.O. 1, and F33165-03-D-2358, D.O. 7 are outside the scope of its claims. It would appear that for the same reasons, contract FA8650-09-C-3902, which the United States indicates has an effective date of 2009, as evidenced by the "09" in the seventh and eighth digits of its contract number, is also outside the scope of its claims.[387]

7.212. The assistance agreement identified by the United States (FA8650-04-2-3449), is a 2004 instrument that was also funded through the Advanced Materials for Weapons Systems (PE 0603211F) program element, an original RDT&E program element. This assistance instrument was therefore covered by the European Communities' claims in the original proceeding and was modified by the Supplemental Subject Invention and Patent License Agreement concluded between DOD and Boeing on 21 September 2012 (DOD-Boeing Patent Licence Agreement).[388] It is clearly within the scope of this proceeding as an original measure.

7.213. Based on the above exchange between the parties, we conclude that there is no evidence before the Panel of any assistance instruments or procurement contracts with Boeing funded under the Long Range Strike Bomber program element that have effective dates from 2011 or later that would fall within the scope of the European Union's claims concerning this RDT&E program element, as delimited by the European Union.

7.214. The European Union notes that the Long Range Strike Bomber Program is highly classified. It refers to public reports that Boeing and Lockheed Martin will team to compete on the program element, which aims to deliver 80-100 long range stealth bombers to the Air Force, with an initial operational capability in 2024 to 2026[389] as well as public reports of statements by Air Force

[380] United States' response to Panel question No. 80, para. 75 (referring to L. B. Thompson, "America Needs to Develop a New Bomber Now", *Lexington Institute*, 2013, (Exhibit USA-458), p. 9).
[381] United States' response to Panel question No. 80, para. 75.
[382] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20; response to Panel question No. 64, para. 38.
[383] European Union's supplemental submission on the United States' request for preliminary rulings, para. 20 (referring to Long Range Strike Bomber Budgets for FY 2007-FY 2013 (PE 0604015F), (Exhibit EU-78), p. 1 which contains a note saying "PE0604015F is a new start effort in FY11").
[384] European Union's comments on the United States' response to Panel question No. 80, para. 104.
[385] United States' first written submission, paras. 467 and 468.
[386] European Union's response to Panel question No. 64, para. 38.
[387] See European Union's response to Panel question No. 64, para. 38; and United States' comments on the European Union's response to Panel question No. 64, para. 58.
[388] United States' first written submission, para. 467.
[389] B. Sweetman, "Boeing, Lockheed Martin Team on New Bomber", *Aviation Week*, 25 October 2013, (Exhibit EU-1360).

officials suggesting the Air Force may be planning to award a contract to build a long range strike bomber by as early as the spring or summer of 2015.[390] The European Union also refers to a U.S. Congressional Research Bulletin which speculates that significant development work for a long range strike bomber may already have been completed, "presumably in classified budgets".[391] The European Union thus considers it to be "almost certain" that Boeing has received "significant amounts of classified R&D funding" under the post-2011 Long Range Strike Bomber program element that the United States has not acknowledged.[392]

7.215. The United States responds by noting that the Long Range Strike Bomber budget documents state that the program element is reported in accordance with a provision of U.S. law that restricts information to members of the defense committees in Congress, and restricts even that information to high-level summaries of what the programme is studying. According to the United States, the only reasonable inference therefore is that any funding under this program element does not produce technology that Boeing's military division would be able to share with its civil aircraft division.[393]

7.216. Given that there is no evidence before the Panel of any procurement contracts or assistance instruments with Boeing funded through the Long Range Strike Bomber program element that have effective dates from 2011 or later that would fall within the scope of the European Union's claims concerning this program element, as delimited by the European Union, the Panel is not satisfied that there is a measure in existence involving this RDT&E program element.

7.217. As a result of the conclusions we have reached in this Section, we make the following rulings regarding the scope of this proceeding as regards the seven "additional" RDT&E program elements the subject of the United States' objections:

a. **Materials Processing Technology Project of the Materials and Biological Technology (PE 0602715E) program element: procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 SOW and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001 funded through this program element are *within* the scope of this proceeding**;

b. **DRAGON Project of the Airborne Warning and Control System (AWACS) (PE 0207417F) program element: Air Force Contract F19628-01-D-0016 funded under this program element is *outside* the scope of this proceeding**;

c. **KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element: Air Force Contract FA8625-11-C-6600 funded through this program element is *outside* the scope of this proceeding**;

d. **Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element: measures funded through this program element are *outside* the scope of this proceeding**; and

e. **the Panel is not satisfied of the existence of any procurement contracts or assistance instruments funded through the Technology Transfer (PE 0604317F) program element, the PRO-ACT Project of the IP ManTech (PE 0708011S) program element, or the Long Range Strike Bomber (PE 0604015F) program element. It will therefore not further consider these alleged measures in its analysis of whether the DOD aeronautics R&D measures involve specific subsidies that cause adverse effects**.

[390] K. Osborn, "Air Force Plans Major Step in Long Range Strike Bomber Program", *Defense Tech*, 15 September 2014, (Exhibit EU-1361).
[391] J. Gertler, "Budget Highlight: Air Force Long Range Strike Bomber", Congressional Research Service, 2 July 2014, (Exhibit EU-1363).
[392] European Union's response to Panel question No. 64, para. 40.
[393] United States' comments on the European Unions' response to Panel question No. 64, para. 59.

7.3.4 Whether DOD "equipment and employees" provided through procurement contracts and assistance instruments funded under the challenged RDT&E program elements are outside the scope of this compliance proceeding

7.218. We next consider the United States' request for a ruling that DOD "equipment and employees" provided through procurement contracts and assistance instruments funded under the challenged RDT&E program elements are outside the scope of this proceeding because the DOD aeronautics R&D measures challenged in the original proceeding were limited to payments and access to DOD facilities provided through procurement contracts and assistance instruments funded under the relevant RDT&E program elements.[394]

7.3.4.1 Main arguments of the parties

7.219. The United States notes that, unlike the corresponding challenges to NASA aeronautics R&D measures, which covered "payments" and "access to NASA facilities, equipment and employees", the European Communities' challenges regarding the DOD aeronautics R&D measures in the original proceeding were confined to "payments" and "access to DOD facilities".[395] Although the European Communities advanced arguments in the original proceeding regarding DOD "facilities, equipment and employees", the panel found that the panel request only identified DOD "facilities" and not DOD "equipment" and/or "employees".[396] The panel found that, to the extent that a measure was not identified in the panel request, it fell outside the scope of the panel's terms of reference.[397] The European Union did not appeal this finding of the panel. According to the United States, although the European Communities could have made claims with respect to DOD equipment and employees in the original proceeding, it did not. It cannot do so in the compliance proceeding.[398]

7.220. Further, the United States considers that the European Union's argument that the provision of equipment and employees is merely one of the ways that the European Union alleges that the RDT&E program elements provide subsidies to Boeing, is essentially an argument that no distinction can be drawn between equipment and employees, and other ways subsidies could be provided. However, the panel in the original proceeding already ruled that such a distinction was appropriate and required in light of the European Communities' panel request.[399] According to the United States, that finding cannot be reconciled with the European Union's position.

7.221. Moreover, the United States says that the European Union effectively admits that it has no reason to believe that DOD has, with the compliance proceeding in mind, shifted the manner in which it provides support to Boeing from payments and access to facilities, to access to equipment and employees.[400] Indeed, in light of the European Union's failure in its supplemental submission to support prior suggestions that DOD may have shifted the manner of supporting Boeing under the RDT&E program elements, the European Union has abandoned its claim that the provision of DOD equipment and employees is within the scope of the compliance proceeding.[401]

7.222. The European Union argues that the original proceeding, like the compliance proceeding, involved challenges to the particular RDT&E program elements only to the extent they provided subsidies that benefit U.S. LCA producers by providing Boeing with funding and other support applicable to the development, design, and production of LCA. What matters is whether DOD is

[394] United States' request for preliminary rulings, dated 13 November 2012, paras. 11 and 60; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 41.

[395] United States' request for preliminary rulings, dated 13 November 2012, para. 11; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 37; and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1116-7.1120.

[396] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1120.

[397] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1120 and 7.1121.

[398] United States' request for preliminary rulings, dated 13 November 2012, paras. 11 and 12.

[399] United States' response to European Union's request for a preliminary ruling and request for the Panel to request information pursuant to Article 13 of the DSU, dated 8 November 2012, paras. 36-38.

[400] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 40.

[401] United States' first written submission, para. 67.

providing its equipment and employees to assist Boeing with R&D related to its LCA at the present time.[402]

7.223. The European Union refers to its panel request in this proceeding, in which it challenges DOD's provision of access to government facilities, equipment, and employees through the relevant RDT&E program elements. According to the European Union, the provision of "equipment and employees" is simply one of the ways that the European Union alleges that the RDT&E program elements provide subsidies to Boeing, along with payments and provision of access to government facilities.[403]

7.224. The European Union argues that, in relation to measures taken to comply, within the meaning of Article 21.5 of the DSU, the European Union is not precluded from challenging unchanged aspects of such measures so long as such aspects are integral to the measure. The provision of equipment and employees is an "integral" part of the RDT&E measures.[404]

7.225. The European Union also suggests, in its initial response to the United States' request for preliminary rulings, that DOD may possibly have shifted the manner in which it transfers resources to Boeing's LCA division such that the payments and facility use have decreased, while the provision of equipment and employees has increased. The European Union refers to the fact that DOD's operations and practices are not transparent from publicly available documents and recalls that in the original proceeding, it had been relying on the Annex V process to provide the necessary information.[405]

7.226. Finally, the European Union asserts that there is no efficiency in requiring the European Union to assert claims against the DOD RDT&E payments and the provision of access to DOD facilities, and then requiring it to launch a new dispute where a separate panel would consider the provision of equipment and employees under those same program elements.[406]

7.3.4.2 Evaluation by the Panel

7.227. The third issue raised by the United States' objections is whether the "funding and support" provided to Boeing under the procurement contracts and assistance instruments funded through the various RDT&E program elements, i.e. through the original 23 RDT&E program elements as well as through those aspects of the "additional" program elements that we have found to be within the scope of this proceeding, covers not just payments and access to DOD facilities, but also access to DOD equipment and employees.

7.228. The United States' position is that the measures properly before this Panel cannot include access to DOD equipment and employees because the provision of access to DOD equipment and employees was not challenged in the original proceeding. The European Union counters that the original proceeding involved challenges to particular RDT&E program elements to the extent they provided subsidies to benefit United States LCA producers. If DOD is, at the present time, providing its equipment and employees to assist Boeing with R&D which benefits its LCA division, then the European Union may validly challenge such measures in this proceeding.

7.229. The pertinent items of the European Communities' panel request in the original proceeding are as follows:

a. allowing the US LCA industry to participate in DOD-funded research, making payments to the US LCA industry for such research, or enabling the US LCA industry to exploit the results of such research, by means including but not limited to the foregoing or waiving

[402] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 31.
[403] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 30.
[404] European Union's supplemental submission on the United States' request for preliminary rulings, para. 17.
[405] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, paras. 31 and 32.
[406] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 34.

of valuable patent rights, and the granting of exclusive or early access to data, trade secrets and other knowledge resulting from government funded research; and

b. allowing the US LCA industry to use research, test, and evaluation facilities owned by the U.S. Government, including the Major Range Test Facility Bases.[407]

7.230. In the original proceeding, the panel explained that the European Communities' DOD-related claims were narrower in various respects than its NASA-related claims. In particular, the panel noted:

> {W}hereas the scope of the European Communities' claim relating to NASA R&D covers NASA "facilities, equipment and employees", the scope of the European Communities' claim relating to DOD *only covers DOD* "*facilities*".[408]

7.231. The panel also recalled that Article 6.2 of the DSU requires that a panel request identify the specific measures at issue, and provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly. To the extent that a measure is not identified in the complaining party's panel request, that measure falls outside the panel's terms of reference.[409] The panel thus proceeded to examine the European Communities' claims regarding the payments and provision of access to DOD facilities (but not DOD equipment and employees) through the procurement contracts and assistance instruments funded under the original 23 RDT&E program elements.

7.232. Although the European Union's panel request in this proceeding refers more broadly to the provision of access to DOD facilities, equipment, and employees, the issue is whether the provision of access to DOD equipment and employees through the relevant procurement contracts and assistance instruments is within the scope of this proceeding given that the European Communities had not challenged such measures in the original proceeding.

7.233. In paragraph 7.152 above, we explain that the European Union's asserted DOD-related claims in this proceeding cover measures involving three categories of instruments:

a. pre-2007 procurement contracts or assistance instruments funded under the original 23 RDT&E program elements (i.e. the procurement contracts and assistance instruments that were before the panel in the original proceeding);

b. post-2006 procurement contracts or assistance instruments funded under the original 23 RDT&E program elements (i.e. procurement contracts and assistance instruments that were entered into after the date of the original panel request in January 2006 but funded through the same program elements that were the focus of the European Communities' claims in that proceeding); and

c. post-2006 procurement contracts or assistance instruments funded under other "additional" RDT&E program elements that are different from the original 23 RDT&E program elements, or their successor programmes (i.e. procurement contracts and assistance instruments entered into after the date of the original panel request in January 2006 but funded through *different* program elements to those that were the focus of the European Communities' claims in that proceeding).

7.234. We consider that the answer to the question whether the provision of access to DOD equipment and employees through the relevant procurement contracts and assistance instruments is within the scope of this proceeding will differ depending on the category of the instrument above.

7.235. In relation to the pre-2007 procurement contracts and assistance instruments at issue in the original proceeding (i.e. those in category (a) above), we see no basis on which the European Union could seek to enlarge the scope of its claims regarding the pre-2007 procurement

[407] European Union's request for the establishment of a panel, item 3(a) and 3(b), pp. 9 and 10.
[408] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1118 and 7.1120. (emphasis added)
[409] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1121.

contracts and assistance instruments at the compliance stage to also cover "access to DOD equipment and employees". The European Communities could have challenged DOD's provision of access to DOD equipment and employees in connection with these procurement contracts and assistance instruments in the original proceeding but did not. We do not consider that the European Union can enlarge the scope of its original claims in this manner at the compliance stage.

7.236. In relation to the claims concerning the post-2006 procurement contracts and assistance instruments, funded under both the original 23 RDT&E program elements and the "additional" RDT&E program elements (i.e. those in categories (b) and (c) above) we are of the view that it is not an impermissible enlargement of the scope of the dispute for the European Union to more broadly formulate its claims in respect of these "new" measures to encompass access to DOD equipment and employees, as well as facilities.

7.237. In reaching these conclusions, we are mindful of the United States' assertion that access to DOD equipment and employees is not significant in relation to general aircraft/science and technology program elements and that DOD does not provide access to facilities or equipment, or reference pooling of employees in relation to systems acquisition/military aircraft program elements.[410] We are mindful that our resolution of this issue may appear somewhat technical, especially as there is nothing before us to suggest that the addition or exclusion of access to DOD equipment and employees is of any great significance to the core issue of whether the United States has complied with the DSB recommendations and rulings. However, the United States' objection involves important systemic considerations such as the fairness of permitting a complaining Member to retroactively enlarge the scope of the original dispute through a compliance proceeding, and the overall role of panels in promoting the prompt settlement of disputes and assisting Members in achieving satisfactory resolution of their disputes. We have attempted to strike an appropriate balance regarding these two important underlying values.

7.238. **We grant the United States' request in relation to access to DOD equipment and employees through pre-2007 procurement contracts and assistance instruments funded under the 23 original RDT&E program elements and rule that the provision of access to DOD equipment and employees through these instruments is outside the scope of this proceeding**.

7.239. **We reject the United States' request in relation to access to DOD equipment and employees through (a) post-2006 procurement contracts and assistance instruments funded under the 23 original RDT&E program elements; and (b) post-2006 procurement contracts and assistance instruments funded under "additional" RDT&E program elements that we have found are within the scope of this proceeding and conclude that the provision of access to DOD equipment and employees through these instruments is within the scope of this proceeding**.

7.3.5 Summary of the Panel's rulings as to whether various certain DOD aeronautics R&D measures are outside the scope of this proceeding

7.240. In this Section of the Report, we make a number of rulings as to whether certain of the DOD aeronautics R&D measures identified by the European Union in its panel request are outside the scope of this proceeding. In sum, we rule as follows:

a. We reject the United States' request for a ruling that the DOD procurement contracts funded through the original 23 RDT&E program elements are outside the scope of this proceeding. The Panel finds that these measures are *within* the scope of this proceeding.

b. We reject the United States' request in respect of the Materials and Biological Technology (PE 0602715E) program element and rule that procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 SOW and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001, funded through the Materials Processing Technology Project of the Materials and Biological Technology

[410] United States' first written submission, paras. 388, 418, and 473.

program element are *within* the scope of this proceeding. The Panel finds that these measures are *within* the scope of this proceeding.

c. We grant the United States' request in respect of the Airborne Warning and Control System (AWACS) (PE 0207417F) program element and rule, on the basis of the claims in respect of that program element as identified by the European Union, that Air Force Contract F19628-01-D-0016 funded under the DRAGON Project is *outside* the scope of this proceeding.

d. We grant the United States' request in respect of the KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element and rule, on the basis of the claims in respect of that program element as identified by the European Union, that Air Force Contract FA8625-11-C-6600 is *outside* the scope of this proceeding.

e. We grant the United States' request in respect of the Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element and rule that measures funded under this program element, including those funded through Navy contracts N00019-04-C-3146, N00019-09-C-0022, and N00019-12-C-0112 are *outside* the scope of this proceeding.

f. The Panel does not further consider measures funded under the Technology Transfer (PE 0604317F) program element, the Defense Logistics Agency IP ManTech (PE 0708011S) program element or the Long Range Strike Bomber (PE 0604015F) program element, because the Panel is not satisfied of the existence of any procurement contracts or assistance instruments with Boeing which the European Union identifies as relevant to its claims, and which are funded under these program elements.

g. We grant the United States' request in relation to the provision of access to DOD equipment and employees through pre-2007 procurement contracts and assistance instruments funded under the original 23 RDT&E program elements and rule that the provision of access to DOD equipment and employees to Boeing through these instruments is outside the scope of this proceeding.

h. We reject the United States' request in relation to the provision of access to DOD equipment and employees through: (a) post-2006 procurement contracts and assistance instruments funded through the 23 original RDT&E program elements; and (b) post-2006 procurement contracts and assistance instruments funded through "additional" RDT&E program elements that we have found are within the scope of this proceeding; we rule that the provision of access to DOD equipment and employees through these instruments is within the scope of this proceeding.

7.3.6 Whether the alleged "dual-use" nature of research conducted under the procurement contracts challenged by the European Union is relevant to the Panel's terms of reference

7.241. As explained in paragraphs 7.86 through 7.87 above, the European Union has identified the relevant RDT&E program elements the focus of its challenge according to whether, in its view, those program elements "support the development of technologies or methods that could benefit Boeing's commercial airplane division".[411] The European Union refers to R&D to develop technologies that it regards as having potential civil applications, as "dual-use" RDT&E. In response to a question from the Panel asking how the alleged "dual-use" nature of research conducted under the DOD procurement contracts is relevant to whether the procurement contracts constitute specific subsidies, the European Union responded that "the dual-use nature of such DOD-supported R&D is primarily relevant to the Panel's terms of reference, as defined by the European Union's panel request".[412] According to the European Union, once the Panel is satisfied that the RDT&E program elements in question do in fact fund R&D that "leads to technologies and knowledge with potential or actual civil, in addition to military applications", the dual-use nature of

[411] Rumpf Report, (Exhibit EU-23), para. 1.1. See also 2006 CRA Report, (Exhibit EU-29), para. 1.1: "{o}n behalf of the European Communities, CRA International Inc. … has examined and estimated the amount of {RDT&E} funding received by {Boeing} from {DOD} that can be considered relevant to both military and commercial aircraft (i.e. 'dual-use' RDT&E)".

[412] European Union's response to Panel question No. 30, para. 187.

the R&D conducted under the DOD procurement contracts is of limited relevance to the questions of financial contribution or benefit, other than with respect to valuation of the subsidy.[413]

7.242. The European Union's response seems to imply that the Panel should undertake a factual analysis of whether the R&D conducted by Boeing pursuant to the procurement contracts and assistance instruments funded under the RDT&E program elements identified by the European Union gives rise to technologies with potential civil applications *in order to identify the DOD aeronautics R&D measures that are properly within its terms of reference*. In responding to the European Union's statement that the "dual-use" nature of the R&D is primarily relevant to the Panel's terms of reference, the United States asserts that the European Union has effectively "admitted" that any procurement contracts that involve research with military objectives (as opposed to dual-use objectives) fall outside the Panel's terms of reference.[414]

7.243. The parties express significant disagreement as to whether the R&D conducted by Boeing pursuant to the procurement contracts and assistance instruments funded under the specific RDT&E program elements identified by the European Union in fact results in technologies with civil applications that assist Boeing's development of LCA.[415] While they do not appear to disagree that at least some of the R&D may have "potential" civil applications, they dispute the extent of that potential, and whether there is an "objective" way of assessing it. Although the United States has not requested the Panel to rule that any of the DOD-related measures are outside the Panel's terms of reference on the basis that they do not in fact fund so-called "dual-use" R&D, the parties' exchange as recounted above suggests that the Panel should, of its own motion, identify and properly delineate the DOD aeronautics R&D measures that are within its terms of reference according to our own evaluation of the potential for the R&D to lead to civil applications.

7.244. Based on our understanding of the European Union's panel request, the DOD aeronautics R&D measures within our terms of reference are not measures that involve Boeing conducting R&D that the *Panel* considers have the "potential to", or actually do, lead to civil applications. Therefore, it is not necessary for us, *as a jurisdictional matter*, to make factual determinations as to whether any particular DOD aeronautics R&D measure potentially or actually leads to development of technologies applied to Boeing LCA.

7.245. We recall that in the original proceeding, the panel noted that the European Communities' DOD-related claims were limited in several respects.[416] One limitation was that it challenged only that subset of funding received by Boeing under the original 23 RDT&E program elements that, *in the European Communities' view*, related to "dual-use" technologies.[417] Similarly in this proceeding, the European Union identifies a number of RDT&E program elements under which, *in its view*, "DOD provides Boeing with funding and support for aeronautics R&D, as well as access to technologies, applicable to Boeing LCA."[418] The United States argues that the European Union's identification of the relevant RDT&E program elements is subjective to the European Union, noting that neither CRA nor Mr Rumpf provide a definition of what, in their view, makes research "dual-use", beyond their subjective opinion.[419]

7.246. The European Union describes the DOD aeronautics R&D measures it challenges in this proceeding by reference to certain RDT&E program elements set forth in its panel request. Those RDT&E program elements have been identified based *on the European Union's view* that the

[413] European Union's response to Panel question No. 30, para. 188.

[414] United States' comments on the European Union's response to Panel question No. 30, para. 171.

[415] United States' first written submission, paras. 297, 448, and 461-465; response to Panel question No. 30, paras. 132 and 133; and comments on the European Union's response to Panel question No. 29, paras. 157, 162, and 163. European Union's second written submission, paras. 389-392; response to Panel question No. 29, paras. 171-174; and comments on the United States' response to Panel question No. 30, paras. 190 and 191. They also employ the term "dual-use" in different senses, as we explain in paragraphs 8.339 to 8.347 of this Report.

[416] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1116-7.1120.

[417] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1117.

[418] European Union's first written submission, para. 243. See also European Union's request for the establishment of a panel, para. 12.

[419] United States' first written submission, para. 297. Moreover, the United States largely disputes that work conducted by Boeing under the RDT&E program elements identified by the European Union would realistically have civil applications, and argues that any realistic civil use is implausible. See e.g. United States' first written submission, paras. 334, 337, 355, 370, 374, and 375.

program elements fund Boeing's development of technologies applicable to LCA. In its first written submission and in expert evaluations submitted with its first written submission, the European Union explains why and how it identified the DOD aeronautics R&D measures that it has chosen to challenge in this proceeding.[420] Contrary to the suggestion in the European Union's response to Panel question No. 30, the Panel need not agree with the European Union that the identified DOD aeronautics R&D measures potentially or actually give rise to technologies applied to Boeing LCA in order to delimit the measures within our terms of reference. Nor does our consideration of the DOD aeronautics R&D measures identified by the European Union in its panel request imply that we consider such measures to potentially or actually give rise to "dual-use" technologies applicable to Boeing LCA. Rather, the question of whether the identified measures in fact support Boeing's development of LCA goes to the merits of the European Union's serious prejudice claims.

7.4 FAA aeronautics R&D measure

7.247. In its panel request, the European Union alleges that the Federal Aviation Administration (FAA), working in collaboration with NASA under the FAA CLEEN Program, maintains subsidies that presently benefit U.S. LCA producers by: (a) "provid{ing} Boeing with funding and access to government facilities, equipment, and employees for R&D applicable to the development, design, and production of LCA"; or (b) "providing Boeing with royalty-free use of the technologies developed with such funding and support, or use of such technologies on preferential terms".[421] The European Union's panel request states that: "{s}uch R&D support is authorized by 49 U.S.C. §§ 44501-44517, 48102, and periodic reauthorization legislation".[422]

7.248. The United States requests a ruling that the "FAA CLEEN measure" is outside the scope of this proceeding because this measure was not challenged in the original proceeding, there were no DSB recommendations and rulings adopted in relation to it, it is not a declared measure taken to comply, and the European Union has not demonstrated that it can be characterized as an "undeclared" measure taken to comply on the basis of any close nexus to the DSB recommendations and rulings or to any declared measures taken to comply.[423]

7.249. FAA's R&D activities are focused on "civil aviation research and development".[424] The FAA inaugurated the FAA CLEEN Program in early 2008 in furtherance of the National Aeronautics Research and Development Plan, with the objective to develop aeronautics R&D programmes focused on inter-agency environmental and performance goals for the "N+1 generation" of LCA designed to enter service in the 2015 to 2018 time-frame.[425] The FAA created the FAA CLEEN Program, while NASA created the Environmentally Responsible Aviation (ERA) Project under its Integrated Systems Research Program, to "guid{e} coordinated efforts to bring to maturity new technologies to reduce fuel burn, emissions, and noise".[426] In 2009 the FAA solicited research proposals for the FAA CLEEN Program from industry.[427] In June 2010, it entered into five-year R&D agreements with, respectively, Boeing and four propulsion-focused companies[428], in each case on

[420] See paras. 7.85 to 7.91 above.
[421] European Union's request for the establishment of a panel, para. 15.
[422] European Union's request for the establishment of a panel, para. 15.
[423] United States' request for preliminary rulings, dated 13 November 2012, paras. 19-22, 36-44, and 60; first written submission, para. 480.
[424] Airport and Airway Trust Fund Authorizations, *United States Code*, Title 49, chapter 481, sections 48102 and 48103, (Exhibit EU-266), section 48102(a).
[425] The FAA CLEEN Program focuses on the most well-developed, near-term commercializable technologies. (R. Jefferies, FAA, "CLEEN (Continuous Lower Energy, Emissions and Noise) Program Technologies Development" Presentation at the NASA ERA Bidder's Conference, 19 February 2010, (Exhibit EU-253), pp. 5, 6 and 8; Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (December 2011), (Exhibit EU-254), pp. 27-30 and 50-53; and J. Wolfe, NASA, "Aeronautics Research Mission Directorate Update with Emphasis on Integrated Systems Research", Presentation at the 48th AIAA Aerospace Sciences Meeting, 4 January 2010, (Exhibit EU-255), p. 10).
[426] Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (2 February 2010), (Exhibit EU-16), p. 11.
[427] FAA CLEEN Request for Offer – Amended SIR, DTFAWA-09-R-03293, (12 May 2009) (CLEEN Solicitation), (Exhibit EU-20); and R. Jefferies, FAA, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program Technologies Development", Presentation, 27 October 2010, (Exhibit EU-256), p. 6.
[428] General Electric, Honeywell, Pratt & Whitney, and Rolls-Royce North America.

a 50% cost-sharing basis. The total FAA contribution under all of the agreements was set at USD 125 million.[429]

7.250. Boeing's work under the FAA CLEEN Program is governed by the CLEEN Other Transaction Agreement DTFAWA-10-C-0030 (the Boeing CLEEN Agreement), which entered into effect on 22 June 2010.[430] Under this agreement, the FAA maintains the authority to determine the work that will be undertaken[431], while Boeing manages the project, conducts the work and prepares reports on that work for the FAA.[432]

7.251. Under the Boeing CLEEN Agreement, Boeing is responsible for integrated management of the FAA CLEEN Program as well as two categories of R&D activities[433]:

a. technology maturation (i.e. research to mature specified technologies through to the prototype development stage) on three research projects: wing adaptive trailing edges; ceramic matrix composite acoustic exhaust nozzles; and the use of alternative fuels; and

b. flight testing and assessment, including flight testing of a broad suite of technologies through Boeing's ecoDemonstrator programme.

7.252. Both parties agree that the issue of whether the FAA aeronautics R&D measure is within the scope of this compliance proceeding depends upon whether the Boeing CLEEN Agreement meets the requirements of the close nexus test; i.e. whether, despite not having been part of the original proceeding, or a declared implementation measure by the United States, the Boeing CLEEN Agreement can nevertheless be characterized by the Panel as a so-called "undeclared" measure taken to comply, if there is a sufficiently close connection between the Boeing CLEEN Agreement, the DSB recommendations and rulings and any declared measures taken to comply.[434]

7.4.1 Main arguments of the parties and third parties

7.253. The United States argues that the European Union has failed to meet its burden of demonstrating the existence of a close nexus between the Boeing CLEEN Agreement, the DSB recommendations and rulings and the U.S. declared measures taken to comply, such that the Boeing CLEEN Agreement should be characterized as a measure taken to comply within the scope of this proceeding.[435]

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[429] FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 24 June 2010, (Exhibit EU-257). Below, paras. 8.64 and 8.69.

[430] Contract between Boeing and FAA, "Other Transaction Agreement", DTFAWA-10-C-00030 (21 June 2012) (Boeing CLEEN Agreement), (Exhibit EU-17), p. 1. Note that the period of performance commenced to run on 21 June 2010.

[431] Boeing CLEEN Agreement, (Exhibit EU-17), parts B.3 and F.2.

[432] Boeing CLEEN Agreement, (Exhibit EU-17), parts C and E.3. In its first written submission, the European Union's financial contribution arguments refer to the proper characterization of the Boeing CLEEN Agreement, an Other Transaction Agreement which governs Boeing's work under the FAA CLEEN Program. (European Union's first written submission, para. 218; and Boeing CLEEN Agreement, (Exhibit EU-17)). In response to a question from the Panel, the European Union explained that its challenge is directed at the Boeing CLEEN Agreement, as this "is the only contract or agreement with Boeing under the FAA CLEEN Program". (European Union's response to Panel question No. 11, para. 77).

[433] Boeing CLEEN Agreement, (Exhibit EU-17), part I, sections C.1.2 and C.3.

[434] European Union's response to Panel question No. 66, paras. 58-68; second written submission, para. 119; United States' request for preliminary rulings, dated 13 November 2012, para. 19; and first written submission, paras. 72, 73, and 474-480.

[435] United States' request for preliminary rulings, dated 13 November 2012, paras. 20, 21, 36, 37, and 44; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 65; first written submission, paras. 202, 475, 476, and 480; and second written submission, para. 69. The United States notes that while the European Union refers, in its response to the United States' request for preliminary rulings, to a close nexus to NASA and DOD measures that were subject to the DSB recommendations and rulings, the European Union's subsequent submissions narrow the close nexus assertion to the NASA aeronautics R&D measures subject to the DSB recommendations and rulings. (United States' first written submission, fns 766 and 767). The European Union does not argue that a close nexus exists between the FAA CLEEN Program and any Washington, Wichita, or FSC/ETI measure. (United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 65).

7.254. The United States argues that the European Union has failed to demonstrate that the FAA CLEEN Program bears a close nexus in terms of *nature* with any of the measures that were subject to the DSB recommendations and rulings, or to the United States' declared measures taken to comply.[436] The United States disputes the European Union's contention that there is *technological continuity* between the FAA CLEEN Program and NASA aeronautics R&D programmes.[437] While the FAA CLEEN Program and the original NASA aeronautics R&D programmes might share common environmental or technological goals of "making LCA more efficient, quieter, and less polluting"[438], it is not sufficient to establish that the programmes share common goals, particularly as environmental goals are common to most governmental agencies and are government-wide objectives for most WTO Members.[439] Rather, the European Union must show that the measure at issue shares enough features with a particular measure covered by the DSB recommendations and rulings, such that a close nexus in terms of nature exists between the two measures.[440] The United States argues that the two NASA aeronautics R&D programmes that the European Union identified as having been covered by the DSB recommendations and rulings (i.e. the Advanced Subsonic Technology and Quiet Aircraft Technology programmes) only dealt with noise reduction; while the subject matter of the FAA CLEEN Program is broader than noise reduction; including also aircraft emissions and energy use.[441] The United States acknowledges that the NASA ERA Project under the Integrated Systems Research Program deals with aircraft emissions and energy use. However, this is not relevant as the Environmentally Responsible Aviation Project was not challenged in the original proceeding and is not challenged in the compliance proceeding.[442]

7.255. In response to the European Union's claim that there is organizational continuity between the FAA CLEEN Program and the NASA aeronautics R&D measures, the United States argues that establishing a link between the FAA CLEEN Program and NASA is not sufficient to meet the close nexus test.[443] In any case, to the extent that there is such a link, it has been misstated by the European Union.[444] According to the United States, there is no substantial NASA involvement in the FAA's administration of the FAA CLEEN Program.[445] The FAA CLEEN Program is solely administered by the FAA on the basis of agreements entered into with companies. NASA is not a party to, nor does it have a role under, the Boeing CLEEN Agreement entered into between the FAA and Boeing.[446] The United States confirms that the FAA consulted NASA experts as it developed the CLEEN solicitation, but adds that the FAA also consulted various other experts inside and outside of government.[447] The NASA support alleged "is simply the unremarkable and routine consultations by government agencies that are conducted as part of responsible government".[448] The United States also disputes the contention that, under the FAA CLEEN Program, Boeing's

[436] United States' first written submission, paras. 477 and 478; second written submission, para. 70; and reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 66, 68, and 71.

[437] United States' second written submission, para. 70.

[438] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67; first written submission, fn 766, paras. 470 and 477; and second written submission, para. 120.

[439] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67; first written submission, para. 477; second written submission, para. 70; and response to Panel question No. 12, para. 27.

[440] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 67 and 68.

[441] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67.

[442] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67; first written submission, para. 477.

[443] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67; response to Panel question No. 12, para. 28.

[444] United States' second written submission, para. 71 (referring to European Union's second written submission, para. 120).

[445] United States' response to Panel question No. 12, para. 28.

[446] United States' response to Panel question No. 12, paras. 25 and 27.

[447] United States' first written submission, para. 477; second written submission, para. 71; opening statement to the meeting of the Panel, para. 87; and response to Panel question No. 12, para. 26.

[448] United States' response to Panel question No. 12, para. 26.

research involves NASA facilities[449] and denies that the FAA provides Boeing with access to employees.[450]

7.256. The United States submits that the structure of the measure in question is an important consideration when determining whether it shares a close nexus in terms of nature with a measure that was subject to the DSB recommendations and rulings.[451] The FAA CLEEN Program has a different structure and operation to the NASA aeronautics R&D programmes that were subject to the DSB recommendations and rulings in two important respects.[452] First, the agreements entered into under the FAA CLEEN Program are cost-sharing arrangements only.[453] The United States notes that the DOD assistance instruments considered by the Appellate Body in the original proceeding involved 50:50 cost-sharing arrangements, and argues that the European Union cannot point to any NASA contracts that share this characteristic.[454] Furthermore, the European Union must show that the measure at issue shares enough features with a particular original measure such that a close nexus in terms of nature exists between the two measures; the European Union cannot establish a close nexus by demonstrating that the FAA CLEEN Program shares one feature with one original measure and another feature with a different original measure.[455] Second, foreign companies were equally welcome to submit proposals to participate in the FAA CLEEN Program, as evidenced by the fact that Rolls-Royce is one of the five participating companies.[456] The United States argues that these two structural differences between the FAA CLEEN Program and the NASA aeronautics R&D programmes distinguish this situation from previous disputes where measures were considered to share a close nexus with respect to the nature of the measures.[457]

7.257. The United States also argues that the European Union has failed to establish a close nexus in terms of the effects of the measure.[458] The United States notes the legal standard for "effects" set out by the European Union in its submissions: "a compliance panel may consider whether the alleged undeclared measure taken to comply has the effect of undermining compliance (if any) that is achieved through the declared measures taken to comply. As the

[449] United States' first written submission, para. 482; second written submission, para. 71 (referring to European Union's second written submission, para. 120).

[450] United States' first written submission, para. 483.

[451] The United States notes, for example, that in *Australia – Salmon (Article 21.5 – Canada)*, both measures were quarantine measures applicable to imports of Canadian salmon, and in *US – Zeroing (EC) (Article 21.5 – EC)*, both measures consisted of the United States' Department of Commerce's use of its zeroing methodology in anti-dumping proceedings.

[452] United States' request for preliminary rulings, dated 13 November 2012, para. 40; first written submission, para. 478.

[453] United States' request for preliminary rulings, dated 13 November 2012, para. 40; first written submission, para. 478; and second written submission, para. 72.

[454] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 597); first written submission, para. 478; and second written submission, para. 72. The United States notes that the European Union has not argued that there is a close nexus in terms of nature between the FAA CLEEN Program and the DOD measures subject to the DSB recommendations and rulings. The United States notes that while the European Union refers, in its response to the United States' request for preliminary rulings, to a close nexus to NASA and DOD measures that were subject to the DSB recommendations and rulings, the European Union's subsequent submissions narrow the close-nexus assertion to the NASA measures subject to the DSB recommendations and rulings. (United States' first written submission, fns 766 and 767; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 67).

[455] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 68.

[456] United States' request for preliminary rulings, dated 13 November 2012, para. 40. The United States asserts that the European engine maker Rolls-Royce is participating in the programme in order to demonstrate increased engine efficiency and reduced engine weight, as well as to test advanced sustainable alternative jet fuels that could be approved for commercial use. (Rolls-Royce, "FAA Continuous Lower Energy, Emissions & Noise (CLEEN) Technologies: Rolls-Royce Program Overview", 2 November 2011, (Exhibit USA-8), p. 9). The United States asserts that Rolls-Royce is using this participation to deliver on 2020 ACARE goals, the purpose of the European Union's equivalent Clean Sky Program through which it budgeted 800 million euros for 50/50 cost-sharing arrangements with industry (including Airbus). (Clean Sky, "Innovating together, flying greener: About us", available at <http://www.cleansky.eu/content/homepage/about-us>, accessed 29 August 2016, (Exhibit USA-7); and United States' response to the Panel question No. 12, para. 27).

[457] United States' request for preliminary rulings, dated 13 November 2012, para. 39.

[458] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 69; opening statement at the meeting of the Panel, para. 88; and response to Panel question No. 12, para. 28.

Appellate Body emphasized in *US – Zeroing (21.5 – EC)*, the test requires a showing of *potential* rather than *actual* effects".[459] The United States argues that the European Union makes no allegations about how the potential effects of the FAA CLEEN Program would undermine compliance achieved through the United States' declared measures taken to comply and thus has failed to establish any close nexus in terms of effect concerning the FAA CLEEN Program.[460] The United States argues that the European Union fails to meet that standard with its "single, conclusory statement{s}" that the FAA CLEEN Program has the same effect as the NASA and DOD aeronautics R&D programmes, which is to contribute to the development of Boeing LCA technology (and lower prices) to the detriment of Airbus[461], and that if the declared measures did, in fact, bring the measures into compliance, the European Union would nevertheless consider the FAA CLEEN Program to undermine such compliance.[462]

7.258. The United States asserts that it complied with the DSB recommendations and rulings when, during the six-month compliance period in 2012, NASA modified the rights accorded to the parties under the contracts and agreements covered by the DSB recommendations and rulings to make them consistent with commercial practice, while at the same time also making modifications to contracts and agreements entered into subsequent to the DSB ruling.[463] The United States contends that the FAA did not begin an environmental programme, available to foreign as well as domestic companies, to undermine or counteract the reallocation of patent rights taken in response to the DSB recommendations and rulings.[464] Moreover, the existence of the FAA CLEEN Program does not undermine the existence of the reallocation of patent rights.[465]

7.259. Finally, the United States argues that the timing element of the close nexus test has been singled out by the Appellate Body as a non-dispositive factor.[466] Nonetheless, the timing of the FAA CLEEN Program is not analogous to disputes where timing was relevant to a finding of close nexus.[467]

7.260. The European Union argues that there is a sufficiently close nexus, in terms of nature, effects, and timing, between the Boeing CLEEN Agreement, the DSB recommendations and rulings and the United States' declared measures taken to comply, such that the Boeing CLEEN Agreement should be characterized as a measure taken to comply within the scope of this proceeding.[468]

7.261. With regard to the connections in terms of nature between the Boeing CLEEN Agreement on the one hand, and the NASA aeronautics R&D measures that were subject to the DSB recommendations and rulings, on the other hand, the European Union argues that the FAA CLEEN Program represents a continuation of the NASA aeronautics R&D subsidies that are the subject of the DSB recommendations and rulings, merely under a new name and shifted to a different agency.[469] The European Union considers this is evident from the technological and organizational continuities between the Boeing CLEEN Agreement and the NASA aeronautics R&D subsidies and the structural similarities between the measures.

7.262. As to technological continuity, the European Union argues that the Boeing CLEEN Agreement, under the FAA CLEEN Program, and the NASA aeronautics R&D subsidies, under the NASA aeronautics R&D programmes, are part of a coordinated U.S. Government aeronautics R&D

[459] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 70 (citing European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 67). (emphasis original)

[460] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 70; first written submission, para. 479; and second written submission, para. 73.

[461] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 69.

[462] United States' second written submission, para. 73.

[463] United States' request for preliminary rulings, dated 13 November 2012, para. 43.

[464] United States' request for preliminary rulings, dated 13 November 2012, para. 43; first written submission, para. 479.

[465] United States' request for preliminary rulings, dated 13 November 2012, para. 43.

[466] United States' request for preliminary rulings, dated 13 November 2012, para. 41.

[467] United States' request for preliminary rulings, dated 13 November 2012, para. 41.

[468] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 82.

[469] European Union's first written submission, para. 230; response to Panel question No. 12, para. 85.

strategy "to guide efforts to mature technologies that have already shown promise to the point where they can be adopted by the current and future aircraft fleet".[470] The FAA CLEEN Program complements NASA (and DOD) aeronautics R&D programmes by focusing on the most well-developed, near-term commercializable technologies.[471]

7.263. According to the European Union, the subject matter of the FAA CLEEN Program research – aircraft emissions, energy use, and noise – is identical to the subject matter of research conducted under certain of the NASA aeronautics R&D programmes; notably, NASA Advanced Subsonic Technology and Quiet Aircraft Technology programmes (which were noise reduction programmes that were considered by the panel in the original proceeding)[472]; and the ERA Project under the Integrated Systems Research Program (which is focused on technologies to reduce fuel burn, emissions, and noise).[473] Moreover, under the FAA CLEEN Program, Boeing is continuing research that has been transitioned from NASA aeronautics R&D programmes.[474] The European Union argues that Boeing's R&D on the adaptive trailing edge and ceramic matrix composite acoustic exhaust nozzle, undertaken pursuant to the Boeing CLEEN Agreement, builds on technologies that were previously developed under the NASA aeronautics R&D programmes and that the Boeing ecoDemonstrator programme builds on NASA's earlier Quiet Technology Demonstrator programmes.[475] In addition, the European Union notes that the companies participating in the FAA CLEEN Program also conduct R&D under the NASA aeronautics R&D programmes.[476] The European Union argues, therefore, that the technologies being developed under the NASA and FAA CLEEN programmes should be "appropriately regarded as being part of a single process of iterative learning and advancement in pursuit of a common technological goal".[477]

7.264. The European Union also argues that the respective measures are closely connected in terms of their nature on the basis of alleged organizational continuity between the FAA CLEEN Program and NASA, because NASA helped to establish the FAA CLEEN Program and collaborates on the programme's operation.[478] The European Union notes that NASA officials have described the relationship between NASA and the FAA CLEEN Program as a partnership.[479] The FAA CLEEN Program solicitation discussed how research results would be built upon and used by both the FAA and NASA, and required that reports and other documentation be submitted to both the FAA and to the head of NASA's ERA Project.[480] NASA has assisted the FAA in setting the technical direction of the programme: creating the solicitations; reviewing proposals; and monitoring technical progress.[481] The European Union further asserts that under the FAA CLEEN Program, Boeing's research makes use of NASA facilities[482], and NASA personnel.[483]

7.265. The European Union points to the United States' admission, in its first written submission, that the Boeing CLEEN Agreement is the same sort of "collaborative relationship 'akin to a species of joint venture'" as the NASA procurement contracts and DOD assistance instruments which were

[470] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 86; first written submission, para. 201 (both quoting Statement of J. Shin, NASA Associate Administrator for Aeronautics Research Mission Directorate, Hearing before the U.S House of Representatives Committee on Science, Subcommittee on Space and Aeronautics, 1 May 2008, (Exhibit EU-21)).

[471] European Union's first written submission, para. 201.

[472] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 83.

[473] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 83 and fn 88.

[474] European Union's first written submission, paras. 201 and 203; second written submission, para. 120; and response to the Panel question No. 12, para. 81.

[475] European Union's response to Panel question No. 12, para. 81.

[476] European Union's response to Panel question No. 12, para. 84.

[477] European Union's first written submission, para. 230 (quoting Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1750).

[478] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 86; second written submission, para. 120.

[479] European Union's first written submission, para. 201; second written submission, para. 120.

[480] European Union's response to Panel question No. 12, para. 80.

[481] European Union's first written submission, para. 231.

[482] European Union's second written submission, para. 120; response to Panel question No. 12, para. 82.

[483] European Union's first written submission, para. 231; second written submission, para. 120; and response to Panel question No. 12, para. 82 (referring to second written submission, para. 338).

subject to the DSB recommendations and rulings.[484] In this regard, the European Union notes that the Appellate Body recognized that a principal characteristic of the NASA procurement contracts and DOD assistance instruments was the contribution of financial and non-financial resources by both parties.[485] The Boeing CLEEN Agreement similarly involves both monetary and non-monetary contributions from the parties.[486]

7.266. As to the connections in terms of effects, the European Union argues that the FAA CLEEN Program has the same effects as the NASA and DOD aeronautics R&D programmes: it contributes to the development of Boeing LCA technology (and lower prices), to the detriment of Airbus.[487] The European Union considers its argument that the FAA CLEEN Program is a continuation of the NASA aeronautics R&D programmes also demonstrates a close nexus between the FAA and NASA measures in terms of effects.[488] Finally, although the European Union does not consider that the United States' declared measures taken to comply have brought the United States' aeronautics R&D subsidies into compliance, the Boeing CLEEN Agreement would have the effect of undermining any such compliance.[489]

7.267. With respect to the timing of the Boeing CLEEN Agreement, the European Union submits that the Boeing CLEEN Agreement was awarded in June 2010[490], and funding for Boeing under the FAA CLEEN Program is ongoing.[491]

7.268. Certain of the third parties (Brazil, Canada, and Japan) make general arguments as to the proper application of the close nexus test to determine when so called "new measures" may be considered within the scope of a compliance proceeding as "undeclared" measures taken to comply. These arguments are summarized at Section 7.2.2.1 of this Report.

7.4.2 Evaluation by the Panel

7.269. The issue before us is whether the European Union has demonstrated that there is a sufficiently close connection, in terms of nature, effects, and timing, between the Boeing CLEEN Agreement, on the one hand, and the aeronautics R&D measures that were subject to the DSB recommendations and rulings, on the other, such that the payments and access to facilities, equipment, and employees provided through the Boeing CLEEN Agreement can be considered to be within the scope of this compliance proceeding as an "undeclared" measure taken to comply.

7.270. We explain in paragraphs 7.66 through 7.75 of Section 7.2.2.2 of this Report our understanding of the close nexus text applied by panels and the Appellate Body in order to determine whether "undeclared" measures with a particularly close relationship to declared measures taken to comply, and to the DSB recommendations and rulings, are susceptible to review by a compliance panel.

7.271. There is no dispute that there are some connections between the Boeing CLEEN Agreement and at least some of the NASA aeronautics R&D measures at issue in the original proceeding. The European Union's position is that these connections satisfy the close nexus test, while the United States' is that the connections are superficial and inadequate to justify bringing the Boeing CLEEN Agreement within the scope of this proceeding.

7.272. The parties' arguments concerning the application of the separate elements of the close nexus test to the Boeing CLEEN Agreement and the particular NASA aeronautics R&D measures set forth the general range of possibilities in determining whether there are sufficiently close connections between these two sets of measures in terms of nature, effects, and timing.

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[484] European Union's second written submission, para. 121.
[485] European Union's response to Panel question No. 13, para. 87.
[486] European Union's first written submission, para. 218.
[487] European Union's response to the United States' request for preliminary rulings, dated 3 December 2012para. 87.
[488] European Union's response to Panel question No. 12, para. 85.
[489] European Union's second written submission, para. 121.
[490] European Union's response to Panel question No. 12, para. 89.
[491] European Union's first written submission, para. 219.

7.273. On *nature*, the European Union says that the Boeing CLEEN Agreement continues the subject areas of research that the United States had originally subsidized under various NASA aeronautics R&D programmes and in a sense, represents the "next stage" of that subsidized research, i.e. subsidizing research related to commercialization and testing of the technologies developed from that earlier research. Although the government agency is no longer NASA but FAA, the involvement of NASA in the FAA CLEEN Program is further evidence of this continuity. The measures themselves have the same "joint venture" structure as the aeronautics R&D measures found to have caused adverse effects in the original proceeding. The United States says that the European Union's allegations are not sufficiently specific. Similarities in the goals of *programmes* or overlapping areas of research pursued by particular programmes are insufficient to satisfy the close nexus test. The measures themselves must be shown to be closely connected. According to the United States, this requires the European Union to demonstrate the links between the Boeing CLEEN Agreement and particular NASA procurement contracts and Space Act Agreements (and DOD assistance instruments), which it has not done. Moreover, NASA is not significantly involved in the FAA CLEEN Program and has no involvement in the Boeing CLEEN Agreement. Even if NASA were involved in the FAA CLEEN Program, this would not be sufficient to satisfy the close nexus test on nature. Finally, the cost sharing feature of the Boeing CLEEN Agreement is only relevant if it is possible to point to a specific aeronautics R&D measure from the original proceeding that covers the same research and technologies and employs cost sharing. It is insufficient to argue that the close nexus is established merely because some instruments such as DOD assistance instruments used cost sharing, in the absence of any other link.

7.274. On effects, the European Union argues that the FAA CLEEN Program has the same effects as the NASA and DOD aeronautics R&D programmes: contributing to Boeing developing technologies, being able to lower its prices and adverse effects on Airbus. The United States says that this is insufficient to demonstrate close nexus in terms of effects. The European Union should show how the Boeing CLEEN Agreement could potentially undermine any purported compliance by the United States, which the United States reminds the Panel, involves a reallocation of the intellectual property rights between NASA, DOD, and Boeing under the NASA procurement contracts and DOD assistance instruments.

7.275. The timing aspect does not appear to give rise to an issue.[492]

7.276. We begin our evaluation by recalling that, in the original proceeding, the panel found, *inter alia*, that the "payments" and "access to facilities, equipment and employees" provided by NASA to Boeing through the NASA procurement contracts and Space Act Agreements constituted specific subsidies to Boeing, that the effect of these subsidies was various forms of serious prejudice, within the meaning of Article 6.3 of the SCM Agreement, in the 200-300 seat LCA product market and thus, that these subsidies caused adverse effects to the European Union's interests, within the meaning of Article 5(c) of the SCM Agreement.[493] This finding was upheld (albeit on the basis of a smaller selection of LCA sales campaigns in the 200-300 seat LCA product market).[494]

7.277. As we explain in Section 8.2.2.2.1, the European Union has directed its challenge to NASA procurement contracts, cooperative agreements, and Space Act Agreements funded through eight NASA aeronautics R&D programmes that were identified in the original proceeding, as well as NASA procurement contracts, cooperative agreements, and Space Act Agreements funded under additional NASA aeronautics R&D programmes that arose from a reorganization of NASA Aeronautics Research Mission Directorate (ARMD).

7.278. Of particular relevance to the Boeing CLEEN Agreement's links with the NASA aeronautics R&D measures at issue are NASA's Fundamental Aeronautics and Integrated Systems Research programmes. Fundamental Aeronautics is carried out through four projects, the largest of which is the Subsonic Fixed Wing Project.[495] The Subsonic Fixed Wing Project develops tools, technologies, and concepts to enable transport aircraft to achieve significant improvements in emissions, noise,

[492] Ordinarily, timing would be expected to become an issue if the "undeclared" measure precedes the adoption of DSB recommendations and rulings (or even the panel request in the original proceeding), raising the potential that the complaining party is in reality using compliance proceedings to retroactively enlarge the scope of its original panel request.

[493] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1797 and 8.3.

[494] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1350(d) (i) (4), (5), and (6).

[495] NASA Fundamental Aeronautics Budget Estimates for FY 2007-FY 2013, (Exhibit EU-40), FY 2013, p. AERO-20.

and performance, including fuel efficiency.[496] The focus of the Subsonic Fixed Wing Project is currently the development and assessment of concepts and technologies that enable the "N+3 generation" of civil transport aircraft.[497] Boeing's role in the Subsonic Fixed Wing Project has included three significant research efforts: Pultruded Rod Stitched Efficient Unitized Structure (PRSEUS) composite materials research; research related to a Blended Wing Body and Subsonic Ultra Green Aircraft Research and related advanced concepts research. The PRSEUS and Blended Wing Body research efforts were taken up by the ERA Project of the NASA Integrated Systems Research Program in FY 2010.

7.279. The NASA Integrated Systems Research Program was established in 2010 to take an integrated system-level approach to mature and integrate technologies in major vehicle systems and subsystems for accelerated transition to practical application.[498] The goal of the Integrated Systems Research Program is to serve as a "technology transition bridge" between the more basic research conducted in NASA's other aeronautics R&D programmes and the higher levels of technological development needed by potential commercial users.[499] Within the Integrated Systems Research Program, the ERA Project targets research into technologies and integrated aircraft systems for subsonic transport aircraft entering into service in 2025 or beyond (i.e. "N+2") to achieve the goals of reduced noise, emissions and fuel burn simultaneously.[500] The ERA Project complements the N+3 generation subsonic research being undertaken in the Subsonic Fixed Wing Project under the Fundamental Aeronautics Program, focusing on more developed technologies for commercial application within a shorter period of time.[501] Phase I of the ERA Project ran from FY 2010 through to the end of FY 2012. Many of the Phase I projects were transitioned from the Fundamental Aeronautics Subsonic Fixed Wing Project, as technologies that are considered ready to advance to technology readiness level (TRL) 6 (the stage before a technology is turned over to industry for prototyping, commercialization, and certification).[502] In particular, Boeing's research work under the Blended Wing Body and PRSEUS projects was shifted to the ERA Project.[503] As part of the ERA Project, NASA and Boeing also conduct research into noise, emissions, and efficiency-related technological challenges and develop specific technologies necessary to enable development of a full-sized, high-performance Blended Wing Body transport aircraft.[504]

7.280. We recall that the FAA CLEEN Program was created in conjunction with the ERA Project of NASA's Integrated Systems Research Program to "guid{e} coordinated efforts to bring to maturity new technologies to reduce fuel burn, emissions, and noise".[505] In a statement to U.S. Congress, NASA Associate Administrator said:

> To facilitate the transition of advanced ideas and technologies into the aircraft fleet, *NASA is partnering with the Federal Aviation Administration's (FAA) Continuous Low Emissions, Energy and Noise (CLEEN) Program* to guide efforts to mature technologies

[496] R. del Rosario, R. Wahls, G. Follen, and N. Madavan, NASA, "Subsonic Fixed Wing Project", Presentation at the Technical Conference of the NASA fundamental Aeronautics Program, 15-17 March 2011, (Exhibit EU-92), pp. 4, 7, and 8.

[497] NASA Fundamental Aeronautics Budget Estimates for FY 2007-FY 2013, (Exhibit EU-40), FY 2013, p. AERO-21.

[498] NASA Integrated Systems Research Budget Estimates for FY 2010-FY 2013, (Exhibit EU-41), FY 2010, p. AERO-39.

[499] NASA, *Research Opportunities in Aeronautics – 2010 (ROA-2010)*, NASA Research Announcement NNH10ZEA001N, (2 June 2010), (Exhibit EU-133), appendix D.2, p. D-1.

[500] NASA Integrated Systems Research Budget Estimates for FY 2010-FY 2013, (Exhibit EU-41), FY 2010, p. AERO-39.

[501] ASA Integrated Systems Research Budget Estimates for FY 2010-FY 2013, (Exhibit 41), FY 2010, p. AERO-40.

[502] F. Collier, NASA, "Overview of NASA's Environmentally Responsible Aviation (ERA) Project" Presentation at the 48th AIAA Aerospace Sciences Meeting, 4 January 2010, (Exhibit EU-154), p. 4.

[503] R. Coppinger, "Blended wing body is NASA's green focus", *Flight International*, 16 March 2010, (Exhibit EU-155).

[504] R. Coppinger, "Blended wing body is NASA's green focus", *Flight International*, 16 March 2010, (Exhibit EU-155).

[505] Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (2 February 2010), (Exhibit EU-16), p. 11.

> that have already shown promise to the point where they can be adopted by the current and future aircraft fleet.[506]

7.281. There appears to be a clear connection between the FAA CLEEN Program and the noise reduction and emissions reduction research carried out under the former NASA Advanced Subsonic Technology (AST) and Vehicle Systems programmes (which were carried over into specific projects under NASA's Fundamental Aeronautics Program and Integrated Systems Research Program). Those NASA programmes focus on research for application to the N+3 and N+2 generation of LCA, while the FAA CLEEN Program is focused closer to the commercialisation end of the R&D process, targeting technologies for application to the N+1 generation of LCA. We can see that in many senses, the FAA CLEEN Program represents a continuation of earlier stage R&D conducted under NASA aeronautics R&D programmes, as is further borne out by NASA's involvement in the FAA CLEEN Program.

7.282. However, the United States argues that the close nexus test focuses on the *measures*, which in this case comprise the Boeing CLEEN Agreement (not the FAA CLEEN Program more generally) and the NASA procurement contracts and Space Act Agreements as well as and DOD assistance instruments[507] funded under the various NASA and DOD programmes, rather than the aeronautics R&D programmes under which they are funded.

7.283. The question whether a measure falls within the scope of a compliance proceeding on the basis of its close nexus to the measures the subject of DSB recommendations and rulings, or declared compliance measures, can only be answered against a careful consideration of the facts and legal context, which in the particular circumstances of this case, includes the aeronautics R&D programmes that fund the particular R&D instruments. While the challenged measure is the Boeing CLEEN Agreement, and not the FAA CLEEN Program in general, the Boeing CLEEN Agreement is funded under the FAA CLEEN Program. More generally, as is apparent from the approach taken by the panel in the original proceeding, the NASA and DOD aeronautics R&D programmes themselves play an important role in understanding the nature and operation of the procurement contracts, cooperative agreements, Space Act Agreements, and assistance instruments funded under those programmes. This is also the case with the FAA CLEEN Program in relation to the Boeing CLEEN Agreement. In addition, under the Boeing CLEEN Agreement, Boeing is responsible for the integrated management of the FAA CLEEN Program itself. Thus, we regard it as appropriate in this specific factual and legal context, to treat the links between the FAA CLEEN Program and the particular projects of NASA's Fundamental Aeronautics and Integrated Systems Research programmes as being highly relevant to our assessment of the links, in terms of nature and effects, between the Boeing CLEEN Agreement and the NASA procurement contracts and Space Act Agreements the subject of the DSB recommendations and rulings.

7.284. Under the Boeing CLEEN Agreement, Boeing is responsible for two categories of R&D activities as well as for the integrated management of the programme as a whole: (a) technology maturation through to the prototype development stage of: (i) wing adaptive trailing edges, (ii) ceramic matrix composite acoustic exhaust nozzles, and (iii) the use of alternative fuels; and (b) flight testing and assessment. In relation to its technology maturation R&D activities under the Boeing CLEEN Agreement, Boeing has acknowledged that the multiple adaptive trailing edge concepts it is studying, as well as technologies relating to the ceramic matrix composite acoustic exhaust nozzle, could be transitioned for use on new and derivative LCA models.[508] Boeing was working on these technologies prior to the FAA CLEEN Program.[509] Moreover, the wing adaptive trailing edges and ceramic matrix composite acoustic exhaust nozzle are technologies that were previously developed by NASA[510], while Boeing had also previously worked with Rolls-Royce and ATK on the ceramic matrix composite acoustic exhaust nozzle.[511]

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[506] Statement of J. Shin, NASA Associate Administrator for Aeronautics Research Mission Directorate, Hearing before the U.S House of Representatives Committee on Science, Subcommittee on Space and Aeronautics, 1 May 2008, (Exhibit EU-21), p. 7. (emphasis added)

[507] Including those measures as amended by the respective Patent Licence Agreements.

[508] Boeing, "Continuous Lower Energy, Emissions and Noise (CLEEN) Program Technologies Development – Boeing Program Update", Presentation at the CLEEN Consortium Public Session, 2 November 2011 (Boeing CLEEN Program Update), (Exhibit EU-258), p. 8.

[509] N. A. Hullings, "A CLEEN Future", *Boeing Frontiers*, May 2013, (Exhibit EU-1021), p. 27.

[510] C. Wilsey and R. Stoker, "CLEEN Technologies Development, Boeing Program Overview", CLEEN Consortium Public Session, 27 October 2010 (formerly Exhibit US-13-154), (Exhibit EU-1019), p. 15 (indicating

7.285. The flight testing under the Boeing CLEEN Agreement is to be conducted by Boeing using its ecoDemonstrator programme.[512] Boeing's ecoDemonstrator programme is a multi-year program of flight testing suites of environmental technologies which Boeing uses to test technologies *additional to* those it is required to test under the Boeing CLEEN Agreement.[513] Boeing describes the FAA CLEEN Program as the "foundational element & enabler of Boeing's ecoDemonstrator strategy" which leverages synergies with government programmes, industry partners, suppliers, and internally-funded development.[514] Adaptive trailing edge concepts were among the technologies included in the initial set of flight tests in August and September 2012.[515] The ceramic matrix composite acoustic exhaust nozzle was scheduled for testing in the 2013 ecoDemonstrator flight test, which will use a 787-800 from Boeing's test fleet.[516]

7.286. Like the NASA procurement contracts and Space Act Agreements funded under the NASA aeronautics R&D programmes that were at issue in the original proceeding, the Boeing CLEEN Agreement involves funding by FAA of research activities undertaken by Boeing on a contract basis for activities directly relevant to LCA. There are some differences in the structure of the Boeing CLEEN Agreement on the one hand, and the NASA procurement contracts and Space Act Agreements: while both parties commit resources, the nature of those respective contributions differs somewhat from those under the NASA aeronautics R&D measures. Moreover, the parties dispute whether, in addition to providing funding, FAA also provides Boeing with access to FAA equipment, employees, and facilities.[517]

7.287. In any case, the differences in the structure of the various measures do not detract from the closeness of the links that they share in other respects. Nor do we consider fatal to the existence of sufficiently close links between the measures the differences in the governmental agencies funding the respective measures. While FAA and NASA are different government agencies, they share overlapping objectives with respect to civil aviation. These commonalities are expressly recognized with respect to environmental and energy efficiency goals.[518] In any case, we note that a close nexus has been found in instances where the respective measures have involved different levels of government[519], so we see no reason why the fact that FAA funds the Boeing CLEEN Agreement and NASA funds the NASA aeronautics R&D measures should be fatal to the existence of a sufficiently close link in terms of nature between those two sets of measures.

7.288. While the FAA CLEEN Program was established in 2009 and the Boeing CLEEN Agreement was awarded in 2010, the fact that the Boeing CLEEN Agreement precedes the adoption of the DSB recommendations and rulings does not mean that the Boeing CLEEN Agreement cannot be considered relevant to the question of the United States' compliance. The original proceeding was under way at the time that the FAA CLEEN Program was established and Boeing began its work. The FAA CLEEN Program complements certain of the NASA aeronautics R&D measures the subject

NASA research in 2008 and 2010); M. C. Halbig, M. H. Jaskowiak, J. D. Kiser, and D. Zhu, "Evaluation of Ceramic Matrix Composite Technology for Aircraft Turbine Engine Applications", NASA Glenn Research Center, 41st AIAA Aerospace Sciences Meeting, 7 January 2013, (Exhibit EU-1020), p. 10; and NASA Dryden Fact Sheet "F/A-18 Active Aeroelastic Wing", 9 December 2009, (Exhibit EU-1281).

[511] M. C. Halbig, M. H. Jaskowiak, J. D. Kiser, and D. Zhu, "Evaluation of Ceramic Matrix Composite Technology for Aircraft Turbine Engine Applications", NASA Glenn Research Center, 41st AIAA Aerospace Sciences Meeting, 7 January 2013, (Exhibit EU-1020), p. 10.

[512] Boeing CLEEN Program Update, (Exhibit EU-258), p. 22; and Boeing CLEEN Agreement, (Exhibit EU-17), section C.2, p. 10.

[513] Boeing, Backgrounder, *2012 ecoDemonstrator Program Shows Boeing's Long Commitment to Environmentally Progressive Technology*, (June 2012), (Exhibit EU-261), pp. 1 and 2.

[514] Boeing CLEEN Program Update, (Exhibit EU-258), p. 22.

[515] FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 18 September 2012, (Exhibit EU-18).

[516] FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 18 September 2012, (Exhibit EU-18); and Boeing CLEEN Program Update, (Exhibit EU-258), p. 26.

[517] Our conclusion regarding this issue is set forth in paras. 8.516 to 8.522 below.

[518] R. Jefferies, FAA, "CLEEN (Continuous Lower Energy, Emissions and Noise) Program Technologies Development" Presentation at the NASA ERA Bidder's Conference, 19 February 2010, (Exhibit EU-253), pp. 4 and 8; Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (December 2011), (Exhibit EU-254), pp. 27-30 and 50-53; and J. Wolfe, NASA, "Aeronautics Research Mission Directorate Update with Emphasis on Integrated Systems Research", Presentation at the 48th AIAA Aerospace Sciences Meeting, 4 January 2010, (Exhibit EU-255), p. 10.

[519] For example, in *Australia – Salmon (Article 21.5 – Canada*), the "undeclared" compliance measure was an import ban adopted by the Australian State of Tasmania while the measure subject to the DSB recommendations and rulings had been a national quarantine regulation.

of the DSB recommendations and rulings in the original proceeding and there is a close degree of technological continuity between research commissioned under the Boeing CLEEN Agreement and under certain of the NASA procurement contracts and Space Act Agreements.

7.289. Indeed, the technological continuities between the research carried out under the FAA CLEEN Program (including by Boeing in its management role under the FAA CLEEN Program) and the research performed by Boeing under certain of the NASA aeronautics R&D measures at issue in the original proceeding mean that, potentially at least, it would be possible for the United States to have purported to comply with the DSB recommendations and rulings as regards the NASA procurement contracts and Space Act Agreements, while continuing to assist Boeing in the commercialization of the more mature technologies arising from those efforts through the Boeing CLEEN Agreement. We therefore consider the links in terms of the effects of the measures to be such that it would be difficult for this Panel to meaningfully assess whether there has been compliance in respect of the NASA procurement contracts and Space Act Agreements without also considering the Boeing CLEEN Agreement.[520]

7.290. The Panel is therefore satisfied that there are sufficiently close links in terms of nature, effects, and timing, between the Boeing CLEEN Agreement and the NASA procurement contracts and Space Act Agreements the subject of the DSB recommendations and rulings in the original proceeding to warrant the conclusion that the payments and access to facilities, equipment, and employees provided to Boeing through the Boeing CLEEN Agreement are within the scope of this compliance proceeding.

7.291. **We therefore dismiss the United States' request for a ruling that the FAA aeronautics R&D measure is outside the scope of this compliance proceeding and conclude that the Boeing CLEEN Agreement is within the scope of this proceeding**.

7.5 South Carolina measures

7.292. In its panel request, the European Union claims that the State of South Carolina and its political subdivisions maintain various specific subsidies for Boeing, related to the production of LCA and LCA components at facilities in North Charleston, South Carolina, through two packages of investment incentives, namely: (a) "Project Gemini" measures; and (b) "Project Emerald" measures.[521]

7.293. The United States objects to the inclusion of the South Carolina measures within the scope of this proceeding. It first raised this objection regarding the Project Gemini and Project Emerald measures in its request for preliminary rulings made prior to the European Union's first written submission, and has maintained that request in subsequent submissions.[522] It responded to the European Union's inclusion of claims concerning the Phase II measures in the European Union's second written submission, requesting the Panel to reject the European Union's claims concerning the Phase II measures on the basis that the European Union has failed to demonstrate that such claims are "properly within this compliance Panel's terms of reference".[523]

7.294. The **Project Gemini** measures are the package of financial incentives offered by the State of South Carolina in 2009, allegedly in order to induce Boeing to locate its second 787 final assembly and delivery facility adjacent to the Vought-Global Aeronautica 787 fuselage fabrication and integration complex at Charleston International Airport. The European Union's panel request describes the following eight measures that it challenges as part of the Project Gemini package[524]:

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[520] We note that our analysis of the links between the measures in terms of their effects is based on an examination of how the FAA aeronautics R&D measure operates and its potential effects in terms of advancing commercial application of technologies to LCA rather than its potential to cause adverse effects, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement. To focus on the latter at this preliminary stage would be to confuse a preliminary scope issue with the substantive question of whether the measures are inconsistent with Articles 5(c) and 6.3 of the SCM Agreement.

[521] European Union's request for the establishment of a panel, para. 23.

[522] United States' request for preliminary rulings, dated 13 November 2012, paras. 23-35; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 65-71; first written submission, paras. 69-71; and second written submission, paras. 85-92.

[523] United States' second written submission, paras. 619 and 620.

[524] European Union's request for the establishment of a panel, para. 24.

a. Provision of a long-term lease of government-owned land at preferential rates, pursuant to a Ground Lease Agreement between the Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a Ground Sublease between South Carolina Public Railways and Boeing, as amended.

b. Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Gemini Agreement between Boeing and the State of South Carolina, dated 1 January 2010, funded through state general obligation bonds issued pursuant to Title 11, chapter 41 of the South Carolina Code, as amended by section 5 of H3130, Act No. 124, 2009 S.C. Acts 1092 (H3130), and South Carolina Code § 55-11-520, at no cost to Boeing.

c. Property tax reductions under a fee-in-lieu-of taxes agreement between Charleston County and Boeing dated 1 December 2009, as authorized by Title 12, chapter 44 of the South Carolina Code, including the provision of special source credits as provided for in such agreement, and authorized by South Carolina Code § 4-1-175.[525]

d. Property tax exemption for Boeing's Large Cargo Freighters (LCFs) pursuant to South Carolina Code §12-37-220(B)(33), as amended by section 1 of H3482, Act No. 45, 2009 S.C. Acts 763.

e. Reductions of state corporate income taxes through an income allocation and apportionment agreement, entered into pursuant to South Carolina Code § 12-6-2320(b), as amended by section 1 of H3130.

f. Provision of corporate income tax credits, as provided for in South Carolina Code § 12-6-3360(E)(1), by virtue of designating the Boeing site in North Charleston as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.

g. Exemption from state sales and use taxes for aircraft fuel, computer equipment, and construction materials, established by sections 2, 3, and 4 of H3130, respectively, and codified at South Carolina Code § 12-36-2120(9)(e) and (f), (65)(b), and (67).

h. Establishment of workforce recruitment, training, and development programmes for Boeing.

7.295. The **Project Emerald** measures comprise the package of financial incentives offered by the State of South Carolina to Vought in 2006 in connection with the 787 fuselage fabrication and integration complex at a site at Charleston International Airport. The European Union's panel request identifies the following four measures as part of the Project Emerald package[526]:

a. Provision of a long-term lease of government-owned land at below-market rates, pursuant to a Ground Lease Agreement between Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a ground sublease between South Carolina Public Railways and Boeing, as amended.

b. Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Emerald Confidential Site Development Agreement, funded through state general obligation bonds issued pursuant to Title 11, chapter 41 of the South Carolina Code, at no cost to Boeing.

c. Property tax reductions under a fee-in-lieu-of taxes Agreement between Charleston County and Vought Aircraft Industries, Global Aeronautica, and Boeing, dated 19 December 2006, and assigned to Boeing on or about 10 February 2010, as authorized

[525] The European Union has subsequently advised that the above-referenced FILOT Agreement was a draft, which had been provided by Charleston County. The final FILOT Agreement is dated 1 December 2010. It is this final agreement to which the European Union refers in its arguments. (European Union's first written submission, para. 550 and fn 1309). We refer to this instrument as the Boeing FILOT Agreement, see para. 8.857 below.

[526] European Union's request for the establishment of panel, para. 25.

by Title 12, chapter 44 of the South Carolina Code, and provided for in the Project Emerald Confidential Site Development Agreement, including the provision of infrastructure credits as provided for in such agreement, and authorized by South Carolina Code § 12-44-70.

d. Provision of corporate income tax credits, as provided for in South Carolina Code § 12-6-3360(E)(1), by virtue of designating the Project Emerald site at Charleston International Airport as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.[527]

7.296. In its second written submission, the European Union additionally challenges so-called **Phase II** measures which it alleges are further incentives intended to support Boeing's ongoing and planned expansions of its LCA manufacturing operations in South Carolina.[528] These Phase II measures are identified in the European Union's second written submission as[529]:

a. Sale of at least 320 acres of government property adjacent to Boeing's Project Site at less than market value.

b. Funding the acquisition and preparation of land for Boeing with the proceeds of USD 120 million in state general obligation economic development bonds.

c. Amendment of the Boeing FILOT Agreement to provide for the reduction or elimination of Boeing's property taxes related to its Phase II expansion.[530]

7.297. We first consider the United States' objections to the inclusion of claims regarding the Project Gemini and Project Emerald measures within the scope of this proceeding, before considering whether the Phase II measures are properly before this Panel.

7.5.1 Whether the Project Gemini and Project Emerald measures are outside the scope of this proceeding.

7.5.1.1 Main arguments of the parties and third parties

7.298. The United States argues that the Project Gemini and Project Emerald measures are outside the scope of this compliance proceeding because those measures were not challenged in the original proceeding, and are not the subject of the DSB recommendations and rulings. They are not declared measures taken to comply, nor can they be considered "undeclared" measures taken to comply, because the European Union has not demonstrated that they meet the requirements of the close nexus test.[531]

7.299. The United States argues that the application of the close nexus test for determining whether a measure can be considered an "undeclared" measure taken to comply, and thus within the scope of a compliance proceeding, requires careful consideration of the measures in terms of

[527] The Project Emerald and Project Gemini measures are described in greater detail in Section 8.2.8 of this Report.

[528] European Union's second written submission, para. 742. Boeing has announced the following plans for expansion of its South Carolina operations: (a) establishing a "Dreamlifter Operations Center" at its Charleston International Airport facility; (b) location of the design and manufacturing of the composite inlets and nacelle linings for the 737 MAX; and (c) creating a new IT center in North Charleston as part of its plans to consolidated its IT operations. The European Union says that industry analysts expect this planned expansion will pave the way for South Carolina to compete with Washington and other states for the 777X final assembly line, as well as for production of the 777X composite wings. (European Union's second written submission, para. 745).

[529] European Union's second written submission, para. 742. The European Union indicated at the meeting with the Panel in October 2013 that it had obtained directly from the local government a copy of the precise agreement evidencing the existence of the Phase II measures. (European Union's opening statement at the meeting of the Panel, para. 43 (referring to First Amendment to Fee Agreement by and between Charleston county, South Carolina and the Boeing Company (1 May 2013), (Exhibit EU-1264))).

[530] The Boeing FILOT Agreement is the instrument referred to in para. 7.294(c) above.

[531] United States' request for preliminary rulings, dated 13 November 2012, paras. 23-35; first written submission, para. 71; and second written submission, para. 620 (with a respect to the Phase II measures).

their nature, effects, and timing, with the measures subject to the DSB recommendations and rulings.

7.300. According to the United States, the *nature* of the eight Project Gemini measures does not resemble the nature of the measures covered by the DSB recommendations and rulings.[532] While the Washington State B&O tax rate reduction (the only Washington State tax measure that was subject to the DSB recommendations and rulings) was part of the "Project Olympus" incentive package offered by the State of Washington, the United States argues that Project Olympus was not itself found to be WTO-inconsistent. The United States considers that it is insufficient therefore, for the European Union to allege a close nexus between the Project Gemini and Project Emerald measures, and the Washington State B&O tax rate reduction, simply on the basis that the measures in question were part of incentive packages.[533] The United States argues that, to the extent that the European Union invokes the "Washington subsidies" in its close nexus analysis, the European Union must show a close nexus to the Washington State B&O tax rate reduction in particular, not some broader package of subsidies for which there were no DSB recommendations and rulings.[534]

7.301. The United States points to the following specific differences between certain individual components of the Project Gemini incentive package and the Washington State B&O tax rate reduction in terms of their structure, design, and operation:

a. an alleged *exemption* from property tax administered by South Carolina on property in that state shares almost no features with a *reduction* in a B&O tax;

b. the Income Allocation and Apportionment Agreement concerns the sourcing and apportionment of corporate income taxes, while the B&O tax in the State of Washington is not a corporate income tax; and

c. the value of the corporate income tax credits for job creation (job tax credits) available by virtue of designating the Boeing site in North Charleston as part of a multi-county industrial park (MCIP) increases with the number of jobs created, while the B&O tax rate reduction does not have this feature.[535]

7.302. In addition to the above differences in the nature of the Project Gemini measures that are tax measures, as compared with the Washington State B&O tax rate reduction, the United States argues that the European Union does not even attempt to argue a close nexus in terms of nature regarding the Project Gemini (or Project Emerald) measures that are non-tax related.[536] The United States points to the fact that five of the 12 Project Gemini and Project Emerald measures have nothing to do with taxes: two measures concern a long-term land lease, two measures concern provisions of facilities and infrastructure, and one concerns the establishment of workforce, recruitment, training, and development programmes.

7.303. The United States disputes also the European Union's argument that the Project Gemini Income Allocation and Apportionment Agreement has a close nexus with the FSC/ETI subsidies the subject of the DSB recommendations and rulings. For the Panel to accept the European Union's argument that the Income Allocation and Apportionment Agreement "substantially replicates the prohibited FSC/ETI subsidy on a state level", it would have to resolve the European Union's claims on the merits as to how the Income Allocation and Apportionment Agreement operates. The determination of whether a measure is within the scope of the proceeding cannot depend on the

[532] United States' first written submission, para. 577.
[533] United States' opening statement at the meeting of the Panel, para. 73.
[534] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 50.
[535] United States' first written submission, para. 577.
[536] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 51. The United States also argues that a sufficiently close connection between the South Carolina measures and the Washington State B&O tax rate reduction cannot be established simply by describing the South Carolina measures as involving "tax incentives". The generic label of "tax breaks" merely distinguishes one particular method of transmitting funds from others, such as a provision of grants or loans, rather than the conditions under which the alleged subsidy is paid out and the incentives it generates for the recipient. (United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 52).

outcome of the substantive analysis of that measure, rather it should be a consequence of the design and nature of the measures at issue. The European Union has not provided any analysis in this regard.[537]

7.304. Furthermore, the granting authority for the Project Gemini (and Project Emerald) measures is different from, and independent of, any of the granting authorities responsible for the measures at issue in the original proceeding. Indeed, the United States asserts that every past application of the close nexus test has involved measures with overlapping geographical scope, which is another aspect of the nature and effects of a measure. By contrast, neither the Project Gemini nor Project Emerald measures geographically overlap in any way with the Washington State measures.[538]

7.305. As to the alleged similarities in *effects* of the Project Gemini measures and the Washington State tax measures, the United States considers purely speculative and hypothetical the European Union's arguments that if South Carolina had not incentivized Boeing to locate its second 787 production line there, production of the 787 would have been located in Washington and would have resulted in increased Washington State subsidies.[539] Many factors influenced Boeing's decision to establish a second 787 assembly line in South Carolina, including the fact that it enabled Boeing to capture logistical efficiencies as a result of its proximity to the Global Aeronautica fuselage fabrication and integration site and added geographical diversity to Boeing's operations, as well as political support from a key state.[540] According to the United States, the European Union's legal position boils down to arguing that any subsidy to Boeing, regardless of its form or nature, would be a "measure taken to comply" for purposes of this proceeding.[541]

7.306. As regards *timing*, the United States argues that there similarly is no nexus between the Project Gemini measures and the measures the subject of the DSB recommendations and rulings . According to the United States, Project Gemini began after the original proceedings were initiated, but before the DSB recommendations and rulings were adopted. The Project Gemini measures cannot therefore be considered a "measure taken to comply".[542]

7.307. With respect to Project Emerald, the United States rejects the European Union's argument that the Project Emerald measures are "closely connected" in terms of *nature* to the tax subsidies associated with the tax abatements related to the City of Wichita IRBs, as both are subsidies for Boeing's LCA-component manufacturing facilities and consist primarily of property tax concessions related to such facilities.[543] First, the largest component of Project Emerald (as alleged by the European Union) is the provision of facilities and infrastructure, which is clearly not a "tax break" related to LCA component manufacturing facilities.[544] In addition, the European Union fails to explain how the Project Emerald FILOT agreement, the Project Site Lease, the provision of facilities and infrastructure or the provision of income tax credits for job creation bear a close nexus in terms of nature to property and sales tax abatements provided through the issuance of IRBs. These are different types of policy tools used by different granting authorities at different times in non-overlapping geographical areas.[545]

7.308. Moreover, there is no nexus in terms of *timing* between the Project Emerald measures and the DSB recommendations and rulings in the original proceeding, as the Project Emerald measures

[537] United States' opening statement at the meeting of the Panel, para. 80 (quoting European Union's first written submission, para. 735).
[538] United States' opening statement at the meeting of the Panel, para. 74.
[539] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 54; first written submission, para. 542.
[540] United States' second written submission, para. 91 (referring to Boeing Board of Directors, "Gemini Update", Presentation, 19 October 2009, (Exhibit USA-323), p. 6). The United States also asserts that confidential information confirms that the Project Gemini incentives did not drive the Boeing Board's decision to locate its second 787 assembly line in South Carolina. (United States' opening statement at the meeting of the Panel, para. 76).
[541] United States' first written submission, para. 580; second written submission, para. 89; and opening statement at the meeting of the Panel, para. 76.
[542] United States' first written submission, para. 579.
[543] See European Union's first written submission, para. 735.
[544] United States' first written submission, para. 543.
[545] United States' first written submission, para. 544.

date from 2004, when South Carolina designed the Project Emerald incentive package for Vought and Alenia, well before the European Communities' panel request in the original proceeding.[546]

7.309. More generally, the United States argues that to find that the Project Gemini and Project Emerald measures satisfy the close nexus test in this proceeding would run counter to the application of the close nexus test in prior jurisprudence in the following respects:

a. Prior cases have required similarities between the design and architecture of the measure at issue and the measure in the original dispute. The European Union has not attempted to show such similarity on a measure-by-measure basis. Rather, the European Union's arguments rely on assertions that the South Carolina measures are part of incentive packages (Project Gemini and Project Emerald), and that the Washington State B&O tax rate reduction was part of the Project Olympus package, as evidence of a close nexus. However, "Project Olympus" was not found to be a WTO-inconsistent measure in the original proceeding and in any case, "coming in packages" is not enough of a resemblance to warrant a finding of close nexus.[547]

b. Second, prior applications of the close nexus test have involved measures with overlapping geographical scope (another aspect of the nature and effects of a measure). Here, the measures have completely non-overlapping geographical scope.[548]

c. Third, prior applications of the close nexus test have required commonality in terms of effects. Here, the European Union's effects argument is based on alleged competition between the states and a supposition that, if South Carolina had not provided the Project Gemini package to Boeing in 2009, Boeing would have located the second 787 assembly line in Washington State, leading to a higher value of Washington State subsidies. The South Carolina measures did not drive the location decision.[549]

7.310. The European Union argues that its claims concerning the Project Gemini and Project Emerald measures are within the scope of this proceeding on the basis of the "close connection" between these measures and the Washington, Kansas, and FSC/ETI subsidies at issue before the original panel.[550]

7.311. The European Union argues that the Project Gemini and Project Emerald measures are essentially two integrated packages of incentives for Boeing's 787 production-related facilities and as such, should be considered together for the purposes of the scope analysis.[551] In this regard, the European Union explains:

a. the Project Site Lease is a component of both the Project Gemini and Project Emerald incentive packages;

b. the bond-funded facilities and infrastructure for both Project Gemini and Project Emerald support both facilities;

c. the sales and use tax exemptions benefit operations at both facilities;

d. the Charleston-Colleton MCIP includes both facilities; and

[546] The United States notes that the European Commission was notified of the acquisition of the interests of Vought and Alenia in 2009 through a merger notification and approved the transaction. (See United States' first written submission, para. 537 (referring to Commission of the European Communities, Merger Procedure, Case No. COMP/M.5151-Boeing/Alenia NA/JV (3 June 2008), (Exhibit USA-203))).

[547] United States' opening statement at the meeting of the Panel, para. 73.

[548] United States' opening statement at the meeting of the Panel, paras. 74 and 75.

[549] United States' second written submission, paras. 91 and 92. The United States argues that, in any case, the European Union's argument does not justify the inclusion of the Project Emerald measures or the Phase II measures within the scope of this proceeding. (United States' opening statement at the meeting of the Panel, para. 76).

[550] European Union's first written submission, para. 734; response to the United States' request for preliminary rulings, dated 23 November 2012, paras. 69-73; and supplemental submission on the United States' request for preliminary rulings, para. 27.

[551] European Union's second written submission, para. 151.

e. the Boeing FILOT Agreement[552] and Emerald FILOT Agreement[553] cover property at the same site, permitting Boeing to shift property between the two fee-in-lieu-of taxes arrangements.[554]

7.312. The European Union considers that the Project Gemini measures, like Washington State's "Project Olympus" measures in the original proceeding, represent the outcome of a competition between states as to the location of Boeing's 787 final assembly line. These measures are "effectively substitutes" for the Washington State subsidies in the sense that, if not for the South Carolina measures, Boeing's second final assembly line for the 787 would have been located in Washington State and Boeing would currently be receiving greater subsidies in the State of Washington. For example, the Washington State B&O tax rate reduction reduces taxes that apply to every aircraft produced in Washington State. Each 787 produced in South Carolina rather than Washington State thus reduces the amount of the B&O tax rate subsidy that Boeing would otherwise receive.[555] Moreover, as the Project Emerald measures were integral to attracting the second 787 final assembly line to South Carolina, these too are effectively substitutes for Washington State subsidies.[556] The European Union therefore argues that the Project Gemini and Project Emerald measures undermine the United States' compliance with the DSB recommendations and rulings.[557]

7.313. As to the similarities in *nature* between the Project Gemini and Project Emerald measures and the DSB recommendations and rulings, the European Union argues:

a. The Project Gemini and Project Emerald measures are similar in nature to the "Washington State subsidies", described by the original panel and Appellate Body as a "package of tax incentives" relating to "retaining and attracting the aerospace industry to Washington State" and "designed to lure Boeing to establish its new production facilities for the 787 in the State of Washington".[558]

b. The Project Gemini and Project Emerald measures, and the "Washington State subsidies" are packages that include: (i) tax breaks; (ii) provided to Boeing; (iii) for the 787; (iv) related to the location of production facilities.[559]

c. The reduction of income taxes through the Project Gemini Income Allocation and Apportionment Agreement is similar in nature to the tax exemptions under FSC/ETI subsidies as both are methods of excluding export sales from Boeing's taxable income, with the South Carolina measure reducing Boeing's state income taxes in proportion to Boeing's South Carolina foreign sales, just as the FSC/ETI subsidies reduced Boeing's federal income taxes based on export sales.[560]

d. The Project Emerald measures are closely connected to the Wichita Kansas IRBs that were found to be subsidies that caused adverse effects in the original proceeding as both are subsidies for Boeing's LCA-component manufacturing facilities and consist primarily of property tax breaks related to such facilities.[561]

7.314. On the similarities in *effects* between the Project Gemini and Project Emerald measures and the DSB recommendations and rulings, the European Union argues that the Project Gemini and Project Emerald measures, as "substitutes and supplements" for subsidies subject to the DSB

[552] The Boeing FILOT Agreement is the instrument referred to in para. 7.294(c) above.
[553] The Project Emerald FILOT Agreement is the instrument referred to in para. 7.295(c) above.
[554] European Union's second written submission, para. 152.
[555] European Union's supplemental submission on the United States' request for preliminary rulings, paras. 30-32; first written submission, para. 735 and fn 1607; and second written submission, para. 148.
[556] European Union's second written submission, para. 152.
[557] European Union's first written submission, para. 735.
[558] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 70 (quoting Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.41 and 7.45).
[559] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 71.
[560] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 73.
[561] European Union's first written submission, para. 735.

recommendations and rulings, effectively negate or undermine purported U.S. compliance.[562] If the United States were allowed to shift subsidies for Boeing from one state to the next and evade review by a compliance panel, the disciplines of the SCM Agreement would be rendered almost meaningless as applied to WTO Members with an internal federal structure.[563]

7.315. As to the *timing* element of the close nexus test, the European Union notes that the Project Gemini and Project Emerald measures were not provided to Boeing until after the establishment of the original panel on 17 February 2006, and all of the European Union's claims relate to subsidies for Boeing that began at the earliest in the latter half of 2009.[564]

7.316. Certain of the third parties (Brazil, Canada, and Japan) make general arguments as to the proper application of the close nexus test to determine when so called "new measures" may be considered within the scope of a compliance proceeding as "undeclared" measures taken to comply. These arguments are summarized in Section 7.2.2.1 of this Report.

7.5.1.2 Evaluation by the Panel

7.317. The question before us is whether the Project Gemini and Project Emerald measures are within the scope of this compliance proceeding, despite the fact that these measures were not challenged in the original proceeding (and therefore were not subject to the DSB recommendations and rulings) and are not declared measures taken to comply by the United States. The parties generally agree that, in order to be within the scope of this proceeding, the Project Gemini and Project Emerald measures must be demonstrated to be "undeclared" measures taken to comply, on the basis of their "particularly close relationship" to measures that were the subject of the DSB recommendations and rulings, or to the United States' declared compliance actions.

7.318. We explain in paragraphs 7.66 through 7.75 of Section 7.2.2.2 of this Report our understanding of the close nexus test applied by panels and the Appellate Body in order to determine whether "undeclared" measures with a particularly close relationship to declared measures taken to comply, and to DSB recommendations and rulings, are susceptible to review by a compliance panel. The parties disagree in several respects as to *how* the Panel should determine whether such a particularly close relationship exists in the particular context of the South Carolina measures. One difference concerns the original measures against which the South Carolina measures are to be compared in conducting the close nexus analysis. More specifically, the parties dispute whether the "baseline" measures are necessarily always confined to the measures subject to the DSB recommendations and rulings and measures that have been declared by the responding party as being measures taken to comply, or can also cover other original measures that were unsuccessfully challenged in the original proceeding.

7.319. The European Union in many places throughout its submissions argues that the Project Gemini and Project Emerald measures have a close nexus to the "Washington State subsidies at issue before the original panel", when the only subsidy provided by the State of Washington that was found to have caused adverse effects by the conclusion of the appeal process was the Washington State B&O tax rate reduction. The United States thus considers that the "baseline" measures for purposes of the close nexus inquiry are those that were subject to the DSB recommendations and rulings in the original proceeding, or the measures that the responding party declares are the measures it has taken to comply; which in this case is the Washington State B&O tax rate reduction (rather than all of the Washington State measures that were challenged in the original proceeding as part of the Project Olympus package), along with the FSC/ETI subsidies and the tax abatements in connection with the City of Wichita IRBs.

7.320. The basic function of a panel in a compliance proceeding is to determine whether a responding party has complied with the DSB recommendations and rulings in the original proceeding. The close nexus test developed as a means for panels to assess which measures,

[562] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 77.

[563] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 78; supplemental submission on the United States' request for preliminary rulings, para. 32.

[564] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 80.

beyond those the subject of the DSB recommendations and rulings, and any measures explicitly adopted by the responding party in purported compliance with those recommendations and rulings, a compliance panel should consider in making its determination under Article 21.5 of the DSU. As we have explained in the context of our ruling that the JCATI measure is outside the scope of this proceeding, the fundamental issue for a panel in applying the close nexus test is whether it is possible to meaningfully assess whether a responding party has complied with the DSB recommendations and rulings without also considering the "undeclared" measures as part of that determination.[565]

7.321. In contrast to previous cases involving the application of the close nexus test, there remained, at the conclusion of the original proceedings in this case, a number of measures in respect of which there were no findings of WTO-inconsistency *or WTO-consistency*, including with respect to the Washington State measures that were part of the Project Olympus package (other than the Washington State B&O tax rate reduction). In Section 7.2 of this Report, we rule that those three other Washington State tax measures enacted under HB 2294, as original Washington tax measures[566], are within the scope of this proceeding.[567] Given that there were no definitive findings of the WTO-*consistency* of these measures at the conclusion of the original proceeding, and bearing in mind that the Washington tax measures are within the scope of this compliance proceeding, we have concluded that it is appropriate to undertake the close nexus analysis on the basis of a consideration of the links between the Project Gemini and Project Emerald measures and the Washington State tax measures enacted under HB 2294, that were challenged in the original proceeding, including those for which there was no definitive resolution of their WTO-consistency at the conclusion of that process. In other words, we will consider whether the Project Gemini and Project Emerald measures bear a sufficiently close nexus, in terms of their nature, effects, and timing, not just to the Washington State B&O tax rate reduction, which was subject to the DSB recommendations and rulings, but also to the three other Washington State tax measures enacted under HB 2294 that were at issue in the original proceeding and that we have elsewhere found to be within the scope of this compliance proceeding.

7.322. The other difference of view concerns the types of commonalities or links that demonstrate a close nexus in terms of nature. The parties disagree as to the significance of the legal form of the various measures and the relevance of their connection to other measures (e.g. as part of an incentive package). It is difficult to say in the abstract which aspects of a measure may be relevant to demonstrating a sufficiently close link in terms of "nature" to the measures subject to the DSB recommendations and rulings, or to other original measures, for purposes of conducting a close nexus analysis. The relevance or otherwise of certain aspects of the measures depends very much on the circumstances of the case. For example, in a dispute involving a quarantine measure found to be WTO-inconsistent, the fact that an "undeclared" measure is also a quarantine measure covering the same products (or subset of products), or otherwise operating in the same manner as the quarantine measure the subject of the DSB recommendations and rulings, will clearly be an important and relevant element of a panel's assessment of the closeness of the links, in terms of nature, between the "undeclared" measure and the original measure.

7.323. On the other hand, it is not obvious that, in a dispute involving subsidies to a particular recipient in respect of a number of that recipient's products, the "type" of subsidy should be determinative in demonstrating whether any "undeclared" measures are within the scope of the compliance proceeding. When determining whether a compliance panel could meaningfully assess whether the responding party has complied with the DSB recommendations and rulings under Article 7.8 of the SCM Agreement, without also considering the "undeclared" measure as part of that determination, the fact that the "undeclared" measure is a similar type of subsidy (e.g. a tax concession) may not be especially informative. That said, we acknowledge that the close nexus test in most cases would require more than that an "undeclared" measure is alleged to subsidize the same recipient. As we explain in our discussion of the jurisprudence concerning the development and application of the close nexus test in Section 7.4.2 of this Report, the focus of the close nexus test (and accordingly the relevance of certain aspects of the measures) fundamentally concerns the links that indicate the potential for the "undeclared" measures to undermine, impair or nullify any purported compliance by the responding party.

[565] See paras. 7.66 through 7.75 of Section 7.2.2.2 above.
[566] See para. 7.11 above.
[567] See Sections 7.2.1 and 7.3.2 above.

7.5.1.2.1 The relevant original measures

7.324. With the foregoing considerations in mind, we first recall the original Washington State tax measures enacted under HB 2294 as part of Project Olympus, including the Washington State B&O tax rate reduction, as well as the FSC/ETI subsidies and tax abatements related to the City of Wichita IRBs which, along with the Washington State B&O tax rate reduction, are the measures the subject of the DSB recommendations and rulings that the European Union argues are relevant to the analysis of whether the Project Gemini and Project Emerald measures satisfy the requirements of the close nexus test.

7.325. The **Washington State tax measures enacted under HB 2294**, which we have concluded are within the scope of this proceeding, were challenged by the European Communities in the original proceeding. As the original panel explained, HB 2294 was entitled "*An Act Related to Retaining and Attracting the Aerospace Industry to Washington State*", and was expressed to include "comprehensive tax incentives" directed at achieving this aim.[568] HB 2294 took effect in December 2003 when Boeing entered into a "Memorandum of Agreement for Project Olympus" with the State of Washington.[569] The Memorandum of Agreement confirmed that the Project Olympus Master Site Agreement between Boeing and the State of Washington constituted an agreement to site a significant commercial airplane final assembly facility in Washington, specifically in the City of Everett, for purposes of HB 2294.[570] In the original proceeding, the European Communities alleged that HB 2294, the Project Olympus Master Site Agreement and an Ordinance enacted within the City of Everett constituted a "Boeing Incentive Package" designed to lure Boeing to establish its 787 production facilities in the State of Washington.[571]

7.326. The Washington State tax measures enacted under HB 2294 that were challenged by the European Communities in the original proceeding consist of: (a) the B&O tax rate reduction for manufacturers of commercial airplanes or components of such airplanes[572]; (b) B&O tax credits for preproduction development and for computer software and hardware; (c) B&O tax credits for property taxes; and (d) sales and use tax exemptions for computer software, hardware, and peripherals to manufacturers of commercial airplanes.[573]

7.327. The B&O tax rate reduction was a "tied" subsidy, in that it applied to the production and sale of each LCA manufactured in Washington State on a per-unit basis, increasing Boeing's after-tax revenue and profitability.[574] The B&O tax rate reduction applied in respect of Boeing aircraft produced in Washington State, and not just the 787.[575]

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[568] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.41.

[569] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.43. Section 17(1)(a) of HB 2294 provided that the legislation takes "effect on the first day of the month in which the governor and a manufacturer of commercial airplanes sign a memorandum of agreement regarding an affirmative final decision to site a significant commercial airplane final assembly facility in Washington state." Section 17(1)(b) also provided that HB 2294 is "contingent upon the siting of a significant commercial airplane final assembly facility in the state of Washington". A "significant commercial airplane final assembly facility" was defined as a "location with the capacity to produce at least thirty-six superefficient airplanes a year", while a "superefficient airplane" was defined as "a twin aisle airplane that carries between two hundred and three hundred fifty passengers, with a range of more than seven thousand two hundred nautical miles, a cruising speed of approximately mach .85, and that uses fifteen to twenty % less fuel than other similar airplanes on the market". (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.44).

[570] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.45.

[571] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.45.

[572] The business and occupancy (B&O) tax is Washington State's primary business tax. It is a tax on the gross receipts (i.e. gross proceeds of sales, gross income, or value of products, as applicable) of all businesses operating in Washington State. Taxpayers are taxed based on the activities in which they engage in the State of Washington, such as manufacturing, wholesaling, retailing, or the provision of services. (See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 458).

[573] HB 2294 also consisted of sales and use tax exemptions for construction services and equipment, a leasehold excise tax exemption and a property tax exemption. The panel, however, found insufficient evidence that Boeing had ever claimed these and thus insufficient evidence of the existence of a financial contribution. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.151). This finding was not appealed.

[574] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1170 and 1252.

[575] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.43 and 7.1803 and fn 1057. In its Compliance Communication on 23 September 2012, the United States advised that the State of Washington is applying the rate of B&O tax for aerospace manufacturing and retailing consistent with Article 5(c) of the SCM Agreement. The European Union argues that this subsidy has been maintained and has not been withdrawn

7.328. The other HB 2294 tax measures at issue in the original proceeding (i.e. the B&O tax credits for preproduction development and computer software and hardware, the B&O tax credits for property taxes and the sales and use tax exemptions for computer software, hardware, and peripherals) were considered to be "untied" subsidies in that they were not directly tied to sales of individual LCA. In the original proceeding, the European Communities identified these other HB 2294 tax measures as subsidies that benefited multiple aircraft families and not solely the 787.[576] The B&O tax credits for preproduction development and computer software and hardware applied against Boeing's liability for B&O taxes which accrued in connection with the manufacture and sale of all Boeing LCA produced in the State of Washington.[577] The B&O tax credits for property taxes related to new construction and in reality would have benefited only the 787 at the time of the original proceeding.[578] The sales and use tax exemptions were in principle available in respect of all Boeing aircraft manufactured in Washington State, and not only in respect of the 787.[579]

7.329. The original panel found that the purpose or intent behind the HB 2294 package was to reduce Boeing's cost structure and thereby significantly improve its competitiveness.[580]

7.330. The **FSC/ETI subsidies** are tax exemptions and exclusions in relation to foreign source income provided under the FSC and successor legislation (namely, the *FSC Repeal and Extraterritorial Income Exclusion Act* of 2000, the *American Jobs Creation Act* of 2004, and the *Tax Increase Prevention and Reconciliation Act* of 2005). For present purposes, the key aspects of the FSC/ETI subsidies are that they involved a tax exemption on a portion of "foreign trade income" for corporations organized as "foreign sales corporations" (FSCs) pursuant to the particular requirements of the U.S. Internal Revenue Code. The FSC measures also permitted U.S. parent companies of FSCs to defer paying taxes on certain "foreign trade income" and to avoid paying taxes on dividends received from their FSCs related to "foreign trade income". FSC/ETI exemptions and exclusions were realized on the delivery of every LCA that Boeing exported, as well as on LCA that Boeing produced and sold to domestic carriers and leasing companies for use predominantly on foreign routes.

7.331. The FSC/ETI subsidies were considered in the original proceeding to be "tied" subsidies, in that they related directly to revenue realized from export LCA sales and operated to reduce the revenues that were subject to taxation, thereby lowering Boeing's taxes and increasing its after-tax profits.[581] There was no evidence that the FSC/ETI subsidies applied to sales of the 787, and the Panel and Appellate Body analysis focused on the effects of these subsidies on the 737 and 777 only.

7.332. The **tax abatements related to the City of Wichita IRBs** were available in respect of industrial revenue bonds (IRBs) purchased not by the public or bondholders, as is typically the case, but by the companies for which they were issued. As Boeing (or Spirit) owned the IRBs, any principal or interest payments on the bonds were ultimately transferred to themselves. Boeing and Spirit did not use the IRBs to finance the development of property, but rather, to take advantage of certain property and sales tax exemptions available to private entities for which IRBs are issued, namely: (a) property tax abatements for up to ten years on Project Property; and (b) sales tax exemptions on project property and services acquired with the proceeds of IRBs.[582]

7.333. The panel found the tax benefits to Boeing arising from the property and sales tax abatements related to the IRBs issued by the City of Wichita to be a specific subsidy. The Appellate Body considered that the subsidies provided through the property and sales tax exemptions related to the IRBs issued by the City of Wichita were specifically aimed at, and were used for the purpose of, enhancing, Boeing's manufacturing facilities in Wichita, Kansas. It therefore found that

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and that the subsidy values are actually increasing each year. (See European Union's first written submission, para. 447).

[576] International Trade Resources LLC, *Calculating on a Per-Aircraft Basis the Magnitude of the Subsidies Provided to US Large Civil Aircraft*, (20 February 2007), (Original Exhibit EC-13).

[577] In the original proceeding, the evidence upon which the panel relied in calculating the amount of these tax credits suggested that the tax credits were applied in relation to expenses incurred in the production of the 787. (See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1344, fn 2704).

[578] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1341.

[579] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1345, fn 2707.

[580] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1803.

[581] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1170 and 1252.

[582] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 472-474.

the effects of these subsidies complemented and supplemented the price effects of the FSC/ETI subsidies and the Washington State B&O tax rate reduction, causing serious prejudice in the form of significant lost sales in the 100-200 seat LCA product market.[583]

7.5.1.2.2 The Project Gemini measures and Project Emerald measures

7.334. We now describe in greater detail the links between the Project Gemini and Project Emerald measures.

7.335. As previously explained, the **Project Gemini** measures date from 2009 and concern various incentives allegedly provided to Boeing by the State of South Carolina and Charleston County in order to induce Boeing to locate its second 787 final assembly and delivery facility in North Charleston, South Carolina. They involve the alleged provision of land, infrastructure, and facilities, as well as a number of tax incentives implemented at both the state and municipal level.

7.336. The **Project Emerald** measures were initially approved in 2004 and involve various incentives which were provided originally to Vought and Global Aeronautica, in connection with the location of their respective 787 fuselage fabrication and integration operations in South Carolina.[584] The Project Emerald measures involve the alleged provision of land on which Vought and Global Aeronautica constructed their facilities (the same tract of land on which Boeing subsequently located its 787 final assembly and delivery facility as part of Project Gemini), financial assistance in connection with the preparation of the land and the construction of the infrastructure and facilities, and tax incentives that are similar to some of those subsequently provided by South Carolina in connection with Project Gemini.

7.337. There are a number of links between the Project Gemini and Project Emerald measures. The first is that both are location incentives offered by South Carolina in connection with the manufacture of the 787. The Project Gemini measures relate to the 787's final assembly and delivery facility, while the Project Emerald measures, originally provided to Vought and Global Aeronautica, concern the manufacture of sections 47 and 48 of the 787 rear fuselage barrels (by Vought) and the structural integration of the 787 fuselage (by Global Aeronautica).[585]

7.338. Moreover, the facilities for both Project Gemini and Project Emerald are located on the same 240 acre tract of land adjacent to Charleston International Airport in North Charleston (the Project Site). As we explain further in Section 8.2.8.5.1, the right to occupy and use the land in relation to both Project Gemini and Project Emerald is granted under the same ground sublease instrument. The Project Gemini facilities and infrastructure and Project Emerald facilities and infrastructure are both part of the same Charleston-Colleton MCIP.

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[583] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 1348 and 1350(d)(iv)(C). The panel had noted that Boeing had sold its Wichita facilities to Spirit Aerosystems (Spirit), on 16 June 2005. However, for IRBs issued to Boeing prior to the sale of its Wichita facilities to Spirit, where the ten-year tax exemptions period continued beyond 2005, Boeing continued directly to receive the tax benefits deriving from the IRBs because Boeing maintained its leasehold interest in the Project Property and subleased the Project Property to Spirit. The City of Wichita continued to issue IRBs to Boeing following the sale of the Wichita facilities to Spirit in 2005. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.649 and 7.662). In January 2012, Boeing announced that it would close all of its Wichita operations by the end of 2013. (A.G. Sulzberger, "Boeing Departure Shakes Wichita's Identity as Airplane Capital", *New York Times*, 18 January 2012 (Exhibit USA-338)).

[584] Confidential Initial Site Development and Incentive Agreement between Vought Aircraft Industries, Inc. (on behalf of itself and the two entities that comprise Project Emerald), the South Carolina Department of Commerce, South Carolina Public Railways, Charleston County, and the Charleston County Airport District (29 November 2004) (Initial Project Emerald Incentive Agreement), (Exhibit EU-560). The Vought and Global Aeronautica facilities opened in 2006. (R. Bundrett, "Anatomy of an Incentives Deal", *The Nerve*, 25 January 2010, (Exhibit EU-547)). The 2004 Initial Emerald Incentive Agreement was replaced by a 2006 agreement: Project Emerald Confidential Site Development and Incentive Agreement, between Vought Aircraft Industries, Inc. (on behalf of itself and the two entities that comprise Project Emerald), the South Carolina Department of Commerce, South Carolina Public Railways, and Charleston County (2006) (Final Project Emerald Incentive Agreement), (Exhibit EU-550).

[585] M. Mecham, "A visit to Vought and Global Aeronautica", *Aviation Week*, Blog *Things With Wings*, 11 June 2008, (Exhibit EU-549). Boeing acquired Vought's 787 business in South Carolina in July 2009, as explained in further detail in para. 8.706 of this Report.

7.339. There is also evidence indicating that the fact that Vought and Global Aeronautica had established the Project Emerald facilities and infrastructure on the Project Site in 2006 contributed to the formation of an "aviation infrastructure" in South Carolina, and thereby enhanced the attractiveness to Boeing of locating its second 787 final assembly and delivery line (i.e. the Project Gemini facilities and infrastructure) at that same Project Site in 2009, adjacent to the Project Emerald facilities and infrastructure operated by Vought and Global Aeronautica.[586] The Project Gemini measures were, it seems, provided against the particular historical background of the Project Emerald measures, as well as the initial competition in 2003 between Washington State, South Carolina, and certain other U.S. states for the location of Boeing's first 787 assembly facility.

7.340. Given this relationship between the Project Gemini and Project Emerald measures, we consider them together for purposes of evaluating the sufficiency of the links in terms of nature and effects between those measures, on the one hand, and the relevant original measures that we have discussed in Section 7.5.1.2.1 above.

7.5.1.2.3 Whether there is a sufficiently close nexus between the Project Gemini and Project Emerald measures, and the relevant original measures

7.341. As we explain in paragraph 7.323, where a close nexus analysis involves measures that are components of location incentive packages provided to the same recipient in respect of the same product, we see no need for a complaining Member to additionally demonstrate that the incentive packages comprise identical or similar measures.[587] Indeed, one might reasonably expect that states that compete for private investment would do so by offering somewhat different incentive packages, playing to their perceived comparative advantages in terms of availability and location of land and infrastructure, the skills of the workforce, and the taxation regimes in place in the particular state. We therefore consider that, in such circumstances, the closeness of links in terms of nature and effects between the original measures and the measures at issue should be undertaken on a more holistic basis. In other words, differences in the measure-by-measure composition of the Project Olympus and Project Gemini (or Project Emerald) incentive packages do not preclude the possibility that, considered as a whole, the incentive packages (and their constituent measures) are sufficiently closely connected in terms of their nature and effects.[588]

7.342. In our view, the key commonality in terms of *nature* between the Washington State tax measures enacted under HB 2294, and the Project Gemini and Project Emerald measures, is that they are packages of incentives which, despite the differences in the individual measures comprising each package, have been granted by a state of the United States conditional upon the location in that state of *manufacturing facilities related to the same Boeing product*, namely the 787.[589] We reach this conclusion despite the fact that we do not agree with the European Union that the Project Gemini measures are "replacement" measures for the Washington State tax measures enacted under HB 2294. We do not consider there is sufficient evidence before us to

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[586] A. Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9).

[587] Moreover, a similarity in the design and architecture of the measure at issue and the original measure is not indispensable to concluding that the measures are closely connected. For example, in *Australia – Leather II (Article 21.5 – US*) the measure at issue that was found to be closely connected to the original measure was a loan while the original measure was a grant.

[588] To be clear, this does not mean that simply because the measures "come in packages" they are closely connected in terms of nature. Rather, it is the similarity in the overall nature of the incentive packages (e.g. their objectives to induce a recipient to locate its facilities in a particular place, the focus on one or more intended recipients and products of the recipients) that in our view is more relevant to assessing whether the constituent measures are sufficiently closely linked to warrant the inclusion of so-called new measures within the scope of a compliance proceeding, than whether the measures themselves are of the same type as the original measures.

[589] This being so, it logically follows that we do not regard the fact that there is no geographical overlap between the Washington State tax measures enacted under HB 2294 and the measures enacted by South Carolina as part of Project Gemini and Project Emerald as being fatal to finding that the measures are nonetheless closely connected in terms of nature or effects. In our view, the relevance to the close nexus analysis of any overlapping geographical scope of the measures depends very much on the context. For example, when the measures involve import bans, their respective geographical scope of application may be highly relevant to an assessment of whether they are sufficiently closely connected. However, where the measures under consideration are location incentive packages offered by different states in competition with one another, it is much less relevant to whether they are sufficiently closely connected that they apply in different geographical areas.

show that Boeing would necessarily have located its second 787 assembly facility in Washington "but for" the Project Gemini incentives. We therefore do not accept the European Union's arguments that, but for the Project Gemini incentives: (a) Boeing would have decided to locate its second 787 assembly facility in Washington State; (b) the subsidies provided under HB 2294 would have been larger; and (c) this therefore demonstrates a close nexus in terms of nature between the Washington State tax measures and the Project Gemini measures.

7.343. We also find a sufficiently close connection in terms of *effects* of the Project Gemini and Project Emerald measures, on the one hand, and the Washington State tax measures enacted under HB 2294, on the other. The Project Gemini and Project Emerald measures, like the Washington State tax measures enacted under HB 2294, in very general terms induce Boeing to locate manufacturing operations in a particular place by offering tax and other concessions that represent the functional equivalent of additional cash to Boeing.

7.344. In relation to *timing*, we note that the Project Gemini measures took effect on or after 2009, which is subsequent to the European Communities' panel request in the original proceeding. The United States argues that this timing indicates that there is no close nexus because the DSB recommendations and rulings were not adopted until 23 March 2012, meaning that the Project Gemini measures cannot be considered to be "undeclared" measures taken to comply. However, the Appellate Body has considered that the fact that measures are adopted after the original panel request but prior to the DSB recommendations and rulings in the original proceeding does not necessarily sever the close links in terms of nature and effects, and has accordingly found a measure to satisfy the requirements of the close nexus test notwithstanding that it preceded the adoption of DSB recommendations and rulings.[590] We do not see that there is anything about the timing of the Project Gemini measures that weakens the close nexus in terms of nature and effects that we consider exists between the Project Gemini measures and the Washington State tax measures enacted under HB 2294.

7.345. We have had greater difficulty in determining whether the timing of the Project Emerald measures severs the close connection we have found to exist between those measures and the Washington State tax measures enacted under HB 2294. The United States argues that elements of Project Emerald commenced in 2004, and to the extent that the European Union challenges those elements as they related to Boeing in 2004, the European Union could have challenged them in the original dispute, but elected not to.[591] The United States disputes that South Carolina provided any financial contributions to Boeing through the Project Emerald measures, which if anything, were financial contributions provided to Vought, not Boeing.[592] The European Union, on the other hand, asserts that all of its claims relate to subsidies to *Boeing* (as opposed to Vought and Global Aeronautica) that began, at the earliest, in the latter half of 2009; i.e. *following Boeing's assumption of the 787 fuselage fabrication and integration operations from Vought in 2009*.[593]

7.346. We recall that the Project Emerald measures comprise the package of financial incentives related to the 787 fuselage fabrication and integration complex. The Project Emerald measures were originally provided to Vought and Global Aeronautica in connection with their 787 fuselage fabrication and integration operations. As we explain in Section 8.2.8.5.1, owing to unforeseen production difficulties with these suppliers, Boeing subsequently took a series of steps to acquire ownership and control of the production and assembly of the 787 fuselage components (and thus the Project Emerald facilities and infrastructure) in 2008 and 2009. As a result, the Project Emerald facilities and infrastructure have been owned and operated by Boeing South Carolina since late 2009.

[590] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), paras. 224-226.

[591] United States' first written submission, para. 539.

[592] The United States argues, moreover, that in order for financial contributions provided to Vought to involve subsidies to Boeing (from 2009 onwards), the European Union would need to demonstrate that the benefit conferred by those financial contributions to Vought had "passed through" to Boeing. According to the United States, as the European Union has not attempted to demonstrate that such benefits passed through to Boeing, it has failed to demonstrate the existence of any subsidies to Boeing arising out of the Project Emerald measures.

[593] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 80.

7.347. Given the European Union's assertion as to the nature of its claims regarding the Project Emerald measures, i.e. as covering only the period *after* Boeing's assumption of Vought's interests in the Project Emerald measures in 2009, and not the prior period, we do not regard the timing element, of itself, to sufficiently weaken the close nexus in terms of nature and effects that we find to exist between the Project Emerald measures and the Washington State tax measures enacted under HB 2294. The United States' arguments concerning a lack of close nexus in terms of timing in reality go to the question of whether the Project Emerald measures involve subsidies *to Boeing*. This issue is therefore better dealt with in the context of our consideration of whether the European Union has demonstrated that any of the Project Emerald measures are specific subsidies to Boeing, which we address in Section 8.2.8 of this Report.

7.348. In sum, we are satisfied that there are sufficiently close connections, in terms of their *nature* and *effects*, between the Project Gemini and Project Emerald measures, on the one hand, and the Washington State tax measures enacted under HB 2294, on the other, to conclude that the Project Gemini and Project Emerald measures are within the scope of this proceeding. We do not regard any aspects of the *timing* of the Project Gemini or Project Emerald measures as sufficiently negating those close connections in terms of nature or effects, as to warrant a conclusion that the measures in question are outside the scope of this proceeding.

7.349. It remains to note that we are not persuaded of the existence of sufficiently close links, in terms of nature or effects, between the Project Gemini and Project Emerald measures, and the tax abatements related to the City of Wichita IRBs, or between the Project Gemini and Project Emerald measures and the FSC/ETI subsidies. The Project Gemini and Project Emerald measures concern the production of the 787. It may be possible to point to superficial similarities between: (a) the property tax abatements related to the City of Wichita IRBs and the property tax reductions provided through the Boeing and Project Emerald FILOT Agreements; and (b) FSC/ETI's exclusion of certain sales from Boeing's corporate income tax liability and the income sourcing rules for apportioning Boeing's LCA sales under the Income Allocation and Apportionment Agreement that is part of the Project Gemini incentive package. However, the Wichita IRBs were found by the Appellate Body to be linked to the production of the 737[594] and not the 787. Similarly, the European Communities in the original proceeding did not allege that the FSC/ETI subsidies benefited the 787.[595] We therefore consider there is an insufficient basis for finding a close connection in terms of nature or effects between either of those measures and the Project Gemini or Project Emerald measures, which relate to the manufacture of the 787. Put another way, we are not persuaded that, in assessing whether the United States has complied with the DSB recommendations and rulings in respect to the tax abatements related to the City of Wichita IRBs or the FSC/ETI subsidies, it is relevant or necessary for the Panel to consider the Project Gemini measures or Project Emerald measures.

7.350. **We therefore dismiss the United States' request for a ruling that the Project Gemini and Project Emerald measures are outside the scope of this proceeding and rule that these measures are within the scope of this proceeding**.

7.5.2 Whether the Phase II measures are outside the Panel's terms of reference

7.5.2.1 Main arguments of the parties

7.351. The United States argues that the European Union has failed to articulate any valid basis for concluding that the Phase II measures are within the Panel's terms of reference. It further argues that the European Union has failed to establish that the Phase II measures even exist, or to advance sufficient evidence to establish a *prima facie* case for any of its Phase II-related claims.[596]

7.352. The United States considers that the European Union's justification for the inclusion of the Phase II measures within the scope of this proceeding is confined to a footnote in the European Union's second written submission, to the effect that the Phase II measures are a "further expansion and supplement of the previous subsidy packages" to Vought and Boeing.[597]

[594] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1347.
[595] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1802.
[596] United States' second written submission, para. 613.
[597] United States' second written submission, para. 619 (referring to European Union's second written submission, para. 151 and fn 190).

For the United States, such a "simplistic explanation" presumes that any future action taken by South Carolina with regard to Boeing automatically affects the United States' obligations in this dispute. However, a compliance panel's terms of reference extend only to measures that are measures taken to comply, within the meaning of Article 21.5 of the DSU. There are no declared measures taken to comply related to Phase II and the European Union has not argued that there are any "undeclared" measures taken to comply.[598]

7.353. The European Union argues that the Phase II measures are properly within the Panel's terms of reference because they constitute amendments or supplements to or extensions of, the South Carolina measures addressed in the European Union's panel request, and first written submission.[599] The European Union notes that in its panel request, in addition to the measures specifically identified therein, it stated that it considered that "any amendments, supplements, extensions, replacement measures, renewal measures, related measures, or implementing measures", in addition to those specifically listed in section I of the panel request, constitute specific subsidies.[600]

7.354. The European Union argues that the Phase II measures are generally "extensions" of the subsidies provided for Project Gemini and Project Emerald. Thus, the Phase II fee-in-lieu-of taxes agreement is "literally an extension of the FILOT for Project Gemini", provided by means of an amendment to the Boeing FILOT Agreement.[601] Similarly, the Phase II economic development bond issuance "replicates" the earlier bond issuances for Project Gemini and Project Emerald, with the proceeds being used to fund the acquisition and preparation of real property for Boeing's use (including the purchase of land which South Carolina plans to provide to Boeing by means of a long-term ground lease for nominal rent).[602]

7.355. The European Union asserts that the Phase II measures are part of South Carolina's incentive offer to Boeing arising from the "competition" between states to locate production of Boeing's recently launched 777X.[603] According to the European Union, Boeing's decision to locate the 777X in South Carolina and to benefit from the Phase II measures, rather than to locate the 777X in Washington State, would decrease the value of future subsidies in Washington State, while increasing those subsidies in South Carolina. In assessing the close nexus between the various South Carolina measures and the Washington state and local subsidies, the Panel should consider the fact that they are all provided in the context of a competition between various U.S. states, or parts thereof, to secure the location of various Boeing facilities.[604]

7.5.2.2 Evaluation by the Panel

7.356. As we stated in paragraph 7.296 above, the European Union challenges, as "Phase II" measures, an alleged sale of government land adjacent to Boeing's existing Project Site, the funding, acquisition and preparation of that land through the proceeds of USD 120 million in state general obligation economic development bonds and the amendment of the Boeing FILOT Agreement to provide for the reduction or elimination of Boeing's property taxes related to the Phase II expansion.[605]

7.357. As explained in paragraphs 7.294-7.295 above, item I.G of the European Union's panel request identifies a number of measures as "Project Gemini-Related Subsidies" and "Project Emerald-Related Subsidies". The European Union did not identify the "Phase II" measures in its panel request, as these measures had not come into existence at the time of the European Union's panel request in October 2012. The European Union first sought to make claims in respect of the "Phase II measures" in its second written submission, dated 25 July 2013, some nine months after its panel request, based on public reports appearing in the first quarter of 2013 that Boeing

[598] United States' second written submission, para. 619.
[599] European Union's second written submission, para. 743.
[600] European Union's second written submission, para. 743 (referring to para. 27 of the European Union's request for the establishment of a panel).
[601] European Union's response to Panel question No. 8, para. 61. The Boeing FILOT Agreement is the instrument referred to in para. 7.294(c) above.
[602] European Union's response to Panel question No. 8, para. 61.
[603] European Union's response to Panel question No. 8, para. 59.
[604] European Union's response to Panel question No. 8, para. 59.
[605] The Boeing FILOT Agreement is the instrument referred to in para. 7.294(c) above.

planned to make further investments in South Carolina and that the South Carolina legislature had approved a Bill to issue USD 120 million in bonds for site development by Boeing.[606]

7.358. In our view, these circumstances raise a jurisdictional issue; namely, whether the Phase II measures, not having been explicitly identified in the European Union's panel request, and indeed which did not exist at the time of that request, are nonetheless properly within the Panel's terms of reference. As this issue goes to the root of our jurisdiction, we must deal with it, if necessary, on our own motion, in order to satisfy ourselves that we have authority to proceed.[607] This issue raises similar issues to those the Panel considered in a ruling which was issued on 18 September 2014 (the SSB 5952 ruling).[608] In that ruling, we addressed whether the Washington State tax measures, as amended by SSB 5952, were within this Panel's terms of reference although SSB 5952 was not explicitly identified in the European Union's panel request and was neither enacted nor came into effect until over a year after the panel request.

7.359. Article 6.2 of the DSU provides, in relevant part:

> The request for the establishment of a panel shall be made in writing. It shall indicate whether consultations were held, identify the specific measures at issue and provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly.

7.360. In evaluating whether the European Union's panel request meets the requirements of Article 6.2 of the DSU as regards the identification of the Phase II measures, we must also take into account that this is a compliance proceeding brought pursuant to Article 21.5 of the DSU. The Appellate Body has stated that, although Article 6.2 is generally applicable to panel requests under Article 21.5: "the requirements of Article 6.2, as they apply to an original panel request, need to be adapted to a panel request under Article 21.5."[609] As the Appellate Body stated in *US – FSC (Article 21.5 – EC II*), in Article 21.5 proceedings, the "specific measures at issue" are measures "that have a bearing on compliance with the recommendations and rulings of the DSB".[610] This indicates that the "requirements of Article 6.2 of the DSU, as they apply to an Article 21.5 panel request, must be assessed in light of the recommendations and rulings of the DSB in the original … proceedings that dealt with the same dispute."[611]

7.361. In our SSB 5952 ruling, we examined a number of cases in which panels and the Appellate Body considered that measures not explicitly identified in a panel request, which came into existence in whole or in part after the date of the panel request, were nevertheless within a panel's terms of reference.[612] We concluded on the basis of that examination that: (a) the requirements of Article 6.2 of the DSU are such that the measures included in a panel's terms of reference will ordinarily be in existence at the time of the establishment of the panel; and (b) there are particular, limited circumstances in which measures coming into existence subsequent to the panel request are within a panel's terms of reference. These circumstances, in one way or another, involve new measures that amend, modify, supplement, extend, replace, renew, relate to, or implement the measures that were explicitly identified in the panel request *without changing their essence, in light of the claims made by the complaining party*. The Appellate Body has thus

[606] European Union's second written submission, paras. 744 and 745 (referring to M. Tomsic, "State leaders praise Boeing Co. expansion, incentives bill", *Charleston Regional Business Journal*, 9 April 2013, (Exhibit EU-1128); and J. McDermott, "Boeing S.C. confirms North Charleston expansion", *The Post and Courier*, 9 April 2013, (Exhibit EU-1129)).

[607] We note that the Appellate Body has previously referred to the widely accepted rule that an international tribunal is entitled to consider the issue of its own jurisdiction on its own initiative, and to satisfy itself that it has jurisdiction in any case that comes before it. (See Appellate Body Reports, *US – 1916 Act*, para. 54 and fn 30; *Mexico – Corn Syrup (Article 21.5 – US*), para. 36; and *EC and certain member States – Large Civil Aircraft*, para. 791). See also Panel Reports, *US – Anti-Dumping Measures on Oil Country Tubular Goods*, para. 7.20; *EC – IT Products*, para. 7.196; and *China – Broiler Products*, para. 7.515.

[608] See Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952 at Section 7.7.

[609] Appellate Body Reports, *US – FSC (Article 21.5 – EC II*), para. 59; and *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 109.

[610] Appellate Body Report, *US – FSC (Article 21.5 – EC II*), para. 61.

[611] Appellate Body Report, *US – FSC (Article 21.5 – EC II*), para. 61. See also Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 109.

[612] See Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952 at Section 7.7, paras. 7.506-7.526.

interpreted the requirements of Article 6.2 of the DSU in a manner that prevents a measure evading review merely because of amendments or modifications to the legal form of the measure during the course of dispute settlement proceedings that do not change its essence in light of the nature of the claims at issue, while still fully respecting the due process rights of responding parties and potential third parties to be informed of the specific measures at issue and the nature of the claims raised by the complaining party.

7.362. The European Union argues that its panel request, through its references to "any amendments, supplements, extensions, replacement measures, renewal measures, related measures, or implementing measures", in addition to those specifically listed in section I of the panel request encompasses the Phase II measures, which are amendments or supplements to, or extensions of, the South Carolina measures identified in the panel request.

7.363. However, as we have previously explained in the context of our SSB 5952 ruling, the limited circumstances in which measures coming into existence subsequent to the panel request may be considered to be within a panel's terms of reference in conformity with the requirements of Article 6.2 of the DSU cannot be artificially enlarged through the inclusion of very general and extensive "catch-all" phrases in a panel request. Otherwise, a specific and quite limited set of circumstances in which measures coming into existence after the request for the establishment of a panel may be found to be within a panel's terms of reference would be transformed into a situation in which, provided a panel request includes a sufficiently broad catch-all description, any subsequent measures that come into existence during the course of a panel proceeding will be within a panel's terms of reference.

7.364. To the extent that the Phase II measures can be considered to "amend", "supplement", or "extend" the Project Gemini or Project Emerald measures identified in the European Union's panel request, such amendments, supplements, or extensions would change the essence of the Project Gemini measures and Project Emerald measures, and thus fall outside the limited circumstances in which measures coming into existence after the date of a panel request can nevertheless fall within the terms of reference of a panel consistently with the requirements of Article 6.2 of the DSU. The Phase II measures are alleged to involve a new sale of land to Boeing, a new bond issuance, and an amendment to the Boeing FILOT Agreement to cover the new property in relation to corporate activities and objectives extending beyond the manufacture of the 787.[613] We do not regard the Phase II measures as being formal, non-substantive clarifications or amendments that do not change the essence of the Project Gemini and Project Emerald measures.[614] Rather, they appear to be a distinct, additional set of measures, provided in consideration for a further expansion of Boeing's operations in South Carolina. As the European Union recognizes, that expansion appears to cover the creation of a new IT centre in North Charleston, as part of Boeing-wide plans to consolidate its IT operations, the establishment of a Dreamlifter Operations Center and the location of the design and manufacture of composite inlets and nacelle linings for the 737 MAX.[615]

7.365. We therefore consider that paragraph 27 of the European Union's panel request does not provide a basis for including the Phase II measures within the panel's terms of reference, consistently with the requirements of Article 6.2 of the DSU to "identify the specific measures at issue".

7.366. **We conclude that the European Union's panel request does not meet the requirements of Article 6.2 of the DSU, read in the light of Article 21.5 of the DSU, to**

[613] As previously noted, the Boeing FILOT Agreement is the instrument referred to in para. 7.294(c) above.

[614] The Phase II measures can be contrasted in this regard with the new measures in cases such as *Chile – Price Band System*, *Argentina – Footwear (EC)*, *US – Zeroing (Japan) (Article 21.5 – Japan)*, *EC – IT Products*, and *EC – Fasteners (China)*, where the new measures either "clarified" the measure or essentially replicated the explicitly identified measures through new legislative action, and thus concerned the same measure (in a substantive sense) that was either the subject of the panel request or that had been found WTO-inconsistent in the original proceeding.

[615] See European Union's second written submission, para. 745. The European Union also asserts, in response to a question from the Panel, that the Phase II measures are "simply (part) of South Carolina's incentive offer to Boeing as part of the competition to locate production of Boeing's recently launched 777X". (European Union's response to Panel question No. 8, para. 59).

specifically identify the measures at issue, as regards the Phase II measures. We thus find that the Phase II measures are outside the Panel's terms of reference.

7.6 Claims under Articles 3.1(a) and (b) of the SCM Agreement and Article III of the GATT 1994

7.6.1 Conformity of the panel request with Article 6.2 of the DSU

7.367. As previously noted, the European Union argues that the measures at issue in this proceeding (identified in items I.A to I.G of its panel request) demonstrate that the United States has failed to withdraw the subsidy or take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement.

7.368. The European Union additionally makes claims in respect of all of the subsidy measures identified therein (in items I.A to I.G) under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III of the GATT 1994.[616]

7.369. The United States requests a preliminary ruling that the European Union's panel request fails to satisfy the requirements of Article 6.2 of the DSU in respect of the claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III of the GATT 1994.[617]

7.6.1.1 Main arguments of the parties

7.370. The United States argues that the panel request fails to connect the challenged measures with the provisions of the covered agreements claimed to have been breached, in a manner that presents the problem clearly.[618] According to the United States, it is not clear which "problem" is caused by which measure. Rather, the European Union's panel request, in a section entitled "Measures", lists a large number of measures in items I.A through I.G, then in a section entitled "Legal Basis", describes the violation of four groups of treaty provisions, stating that all measures listed in items I.A through I.G are inconsistent with the relevant provisions.[619] The United States says it is not plausible that the European Union is making the dozens of claims implied by the language in the panel request that all measures in items I.A through I.G violate all of the treaty provisions discussed in paragraphs 30-32.[620]

7.371. The United States likens the deficiencies in the European Union's panel request to those in the panel requests in *China – Raw Materials*. In that case, one section of the panel requests (section III) first briefly described, in narrative paragraphs, a number of different allegations of violation relating to different types of restraints, then provided a bullet point list of the legal instruments alleged to reflect the Chinese measures, and concluded with the statement that "these measures" were inconsistent with 13 listed treaty provisions.[621] The Appellate Body concluded that because the complainants had not, in either the narrative paragraphs or in the final listing of the provisions of the covered agreements alleged to have been violated, provided the basis on which the panel and China could determine with sufficient clarity which "problem" or "problems" were alleged to have been caused by which measures, they failed to present the legal basis for their

[616] European Union's request for the establishment of a panel, paras. 30-32. While paragraph 32 of the European Union's panel request alleges that the measures in items I.A through I.G are inconsistent with Articles III:1, III:4, and III:5 of the GATT 1994, in its first and second written submissions, the European Union's claims in relation to Article III of the GATT 1994 are limited to alleged inconsistency with Article III:4 of the GATT 1994. (See European Union's first written submission, paras. 777-788; and second written submission, paras. 851-864). The European Union therefore appears not to pursue its other claims under Article III of the GATT 1994.

[617] United States' request for preliminary rulings, dated 13 November 2012, paras. 45 and 54; first written submission, para. 90; and second written submission, para. 55.

[618] United States' request for preliminary rulings, dated 13 November 2012, para. 45; first written submission, para. 89.

[619] United States' request for preliminary rulings, dated 13 November 2012, para. 47 (referring to European Union's request for the establishment of a panel, paras. 29-32).

[620] United States' request for preliminary rulings, dated 13 November 2012, para. 54; reply to the European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 74.

[621] United States' request for preliminary rulings, dated 13 November 2012, para. 55 (referring to Appellate Body Reports, *China – Raw Materials*, paras. 222-225).

complaints with sufficient clarity to comply with Article 6.2 of the DSU.[622] The United States argues that the Panel should reach the same conclusion with respect to the European Union's panel request in this proceeding, as the European Union's panel request fails to connect the various treaty provisions in paragraphs 30-32 with the long list of measures included in paragraphs 8-26 (items I.A through I.G).[623]

7.372. The European Union argues that the specific basis for the United States' request is the assertion that it is evident that the European Union is not making each claim for each measure, while also acknowledging that the panel request expressly states that the claims are made with respect to *all* of the measures identified in the panel request.[624] The European Union argues that it is clear from the panel request that the European Union makes the claims with respect to all of the measures, and that the United States has understood this to be the case.[625] That being so, there is no basis for the United States' preliminary ruling request.

7.373. In its response to the United States' request for preliminary rulings, the European Union also "confirms" the express wording of its panel request; i.e. that the claims are made with respect to *all* of the measures.[626] In a supplemental submission made by the European Union after filing its first written submission[627], the European Union notes that it did, indeed, make the relevant claims in its first written submission with respect to all of the identified measures.[628] According to the European Union, "by its own terms" there is no longer any basis for the United States' challenge with respect to this matter.[629] The United States' arguments concerning the "implausibility" of the claims in reality go to the merits of those claims.[630]

7.6.1.2 Evaluation by the Panel

7.374. Article 6.2 of the DSU requires that a panel request clearly identify "the specific measures at issue" and provide a "brief summary of the legal basis of the complaint sufficient to present the problem clearly".[631] A panel request forms the basis for the terms of reference of a panel, in accordance with Article 7.1 of the DSU.[632] It also serves the due process objective of notifying the respondent and third parties of the nature of the complainant's case.[633] The identification of the specific measures at issue and the provision of a "brief summary of the legal basis of the complaint sufficient to present the problem clearly" are therefore central to defining the scope of the dispute to be addressed by the panel.[634]

7.375. A panel must carefully scrutinize the language used in a panel request in order to determine whether the panel request is sufficiently precise to comply with Article 6.2 of the DSU. Submissions may be referenced in order to confirm the meaning of words used in a panel request, but the content of those submissions cannot have the effect of curing the failings of a deficient

[622] United States' request for preliminary rulings, dated 13 November 2012, para. 55 (referring to Appellate Body Reports, *China – Raw Materials*, para. 231).
[623] United States' request for preliminary rulings, dated 13 November 2012, para. 57.
[624] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, paras. 92 and 93.
[625] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 96.
[626] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 96.
[627] See para. 7.135.
[628] European Union's supplemental submission on the United States' request for preliminary rulings, para. 34.
[629] European Union's supplemental submission on the United States' request for preliminary rulings, para. 34; second written submission, para. 104.
[630] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 99; supplemental submission on the United States' request for preliminary rulings, para. 34.
[631] Together, these two elements constitute the "matter referred to the DSB" so that if either of them is not properly identified, the matter would not be within the Panel's terms of reference. (See Appellate Body Reports, *China – Raw Materials*, para. 219; and *US – Carbon Steel*, para. 125).
[632] Appellate Body Reports, *China – Raw Materials*, para. 219; *Guatemala – Cement I*, paras. 72 and 73; *US – Carbon Steel*, para. 125; *US – Continued Zeroing*, para. 160; and *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 107.
[633] Appellate Body Reports, *China – Raw Materials*, para. 219; and *EC and certain member States – Large Civil Aircraft*, para. 786.
[634] Appellate Body Reports, *China – Raw Materials*, para. 219.

panel request.[635] In particular, the Appellate Body has explained that whether a panel request challenging a number of measures on the basis of multiple WTO provisions sets out a "brief summary of the legal basis of the complaint sufficient to present the problem clearly" may depend on whether it is sufficiently clear which "problem" is caused by which measure or group of measures.[636]

7.376. The European Union's panel request in this proceeding cites all of the measures listed in items I.A through I.G in relation to *each* of Article 3.1(a) of the SCM Agreement, Article 3.1(b) of the SCM Agreement, and Article III of the GATT 1994. Thus, the European Union requests, in paragraphs 30 through 32 of its panel request, that the panel find that:

a. the measures listed in items 1.A through 1.G of the panel request are inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement;

b. the measures listed in items 1.A through 1.G of the panel request are inconsistent with Articles 3.1(b) and 3.2 of the SCM Agreement; and

c. the measures listed in items 1.A through 1.G of the panel request are inconsistent with Articles III:4 and III:5 of the GATT 1994.[637]

7.377. We see pertinent differences between the European Union's panel request in this proceeding and the complainants' panel requests in *China – Raw Materials*. In *China – Raw Materials*, section III of the complainants' panel requests contained a series of paragraphs setting out in narrative fashion different allegations of violation relating to varied situations in which obligations under the WTO Agreements might not be satisfied, followed by a bullet point list of 37 legal instruments introduced by the phrase: "{the complainant} understands that these Chinese measures are reflected in, among others …" with the listed legal instruments ranging from entire codes or charters to specific administrative measures, without identifying any of the specific sections or provisions of the listed instruments. The final paragraph of section III consisted of a list of 13 treaty provisions with which the measures were alleged to be inconsistent.[638] The Appellate Body concluded that the panel requests did not make clear which allegations of error pertained to which particular measures or sets of measures identified in the panel requests.[639] Moreover, it was unclear whether each of the listed measures related to one specific allegation described in the narrative paragraphs or to several or even all of those allegations, and whether each of the listed measures allegedly violated one specific provision of the covered agreements, or several of them.[640] As a result, the complainants had failed to provide the basis on which the panel and China could determine with sufficient clarity what "problem" or "problems" were alleged to have been caused by which measures, thus failing to present the legal basis for their complaints with sufficient clarity to comply with Article 6.2 of the DSU.[641]

7.378. Items I.A through I.G of the European Union's panel request identify the following measures that are alleged to constitute specific subsidies: (A) "NASA R&D Subsidies"; (B) "Department of Defense R&D Subsidies"; (C) "Federal Aviation Administration R&D Subsidies"; (D) "Washington State and Local Subsidies"; (E) "FSC/ETI Legislation and Successor Acts"; (F) "State of Kansas and City of Wichita Subsidies"; and (G) "South Carolina State and Local Subsidies". On its face, the European Union's panel request alleges in paragraphs 30 through 32 that "the measures listed in items I.A to I.G" are inconsistent with, respectively, Articles 3.1(a) (including footnote 4), 3.1(b), and 3.2 of the SCM Agreement, and Articles III:4, III:5 and III:1 of the GATT 1994.

7.379. The United States argues that it is implausible that the European Union would in reality seek to pursue all of the "hundreds of possible measure-provision combinations" apparent from a

[635] Appellate Body Reports, *China – Raw Materials*, para. 220; and *EC – Fasteners (China)*, para. 562 (referring to Appellate Body Reports *EC and certain member States – Large Civil Aircraft*, para. 642; *EC – Bananas III*, para. 143; and *US – Carbon Steel*, para. 127).
[636] Appellate Body Reports, *China – Raw Materials*, para. 220.
[637] European Union's request for the establishment of a panel, paras. 30-32.
[638] See Appellate Body Reports, *China – Raw Materials*, paras. 221-225.
[639] Appellate Body Reports, *China – Raw Materials*, para. 226.
[640] Appellate Body Reports, *China – Raw Materials*, para. 226.
[641] Appellate Body Reports, *China – Raw Materials*, para. 231.

reading of the panel request at face value.[642] According to the United States, as it is simply implausible that the European Union would actually advance all of the claims in relation to all of the measures, the European Union's panel request therefore fails to "present the problem clearly".[643]

7.380. It appears to us that the United States' argument that the European Union's panel request is insufficiently clear is based on a belief that the European Union could not credibly consider that each of the listed measures is inconsistent with each of the listed WTO provisions.[644] This, however, reflects the United States' assessment of the merits of the European Union's claims, rather than the clarity of their expression for purposes of Article 6.2 of the DSU.

7.381. We recall that the requirement in Article 6.2 of the DSU to provide a "brief summary of the legal basis of the complaint sufficient to present the problem clearly" refers to the description in the panel request of a party's claims, rather than its arguments.[645] A "claim" is an allegation that the respondent party has violated, or nullified or impaired the benefits arising from, an identified provision of a particular covered agreement.[646] An "argument" comprises the statements made in support of a claim to demonstrate that a responding party's measure infringes an identified treaty provision. These are "set out and progressively clarified in the first written submissions, the rebuttal submissions, and the first and second panel meetings with the parties".[647]

7.382. In section VI of its first written submission, the European Union sets forth its claims under Articles 3.1(a) and 3.1(b) of the SCM Agreement and under Article III:4 of the GATT 1994.[648] The United States characterizes the European Union's first written submission as presenting measures comprising a "system of subsidies" which collectively are inconsistent with Articles 3.1(a) and 3.1(b) of the SCM Agreement and Article III of the GATT 1994. For the United States, this "clarification" only confirms that the European Union's panel request fails to "present the problem clearly", as required by Article 6.2 of the DSU, as the phrase "system of subsidies" does not appear in the panel request, nor is it apparent from the panel request how the measures could possibly operate collectively so as to induce export performance, import substitution, or preferential treatment of domestic products.[649] The European Union denies that its claims seek to identify a "system of subsidies" as a measure at issue.[650] It would seem that these arguments go to the merits of the European Union's claims under Articles 3.1(a) and 3.1(b) of the SCM Agreement and Article III of the GATT 1994, rather than to the question of whether those claims are presented sufficiently clearly in the panel request to satisfy the requirements of Article 6.2 of the DSU.

7.383. In conclusion, we consider that the European Union's panel request, in alleging that the measures listed in items I.A through I.G are inconsistent with, respectively, Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and various paragraphs of Article III of the GATT 1994, meets the requirements of Article 6.2 of the DSU in presenting the problem clearly. **The Panel therefore dismisses the United States' request for preliminary rulings that the European Union's panel request fails to satisfy the requirements of Article 6.2 of the DSU with respect to the claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and Article III**

[642] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 73.

[643] United States' reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 72 and 74.

[644] See e.g. United States' request for preliminary rulings, dated 13 November 2012, paras. 49 and 54; and reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 74. We are mindful that Article 3.7 of the DSU requires Members to exercise judgment in deciding whether action under the DSU would be fruitful.

[645] Appellate Body Reports, *Guatemala – Cement I*, para. 72; and *EC – Bananas III*, paras. 141-143.

[646] Appellate Body Report, *Korea – Dairy*, para. 139.

[647] Appellate Body Report, *Korea – Dairy*, para. 139.

[648] While paragraph 32 of the European Union's panel request alleges that the measures in items I.A through I.G are inconsistent with Articles III:1, III:4, and III:5 of the GATT 1994, in its first and second written submissions, the European Union's claims in relation to Article III of the GATT 1994 are limited to alleged inconsistency with Article III:4 of the GATT 1994. (See European Union's first written submission, paras. 777-788; and second written submission, paras. 851-864). The European Union therefore appears not to pursue its other claims under Article III of the GATT 1994.

[649] United States' first written submission, para. 89.

[650] European Union's second written submission, para. 105.

of the GATT 1994. The Panel rules that the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III of the GATT 1994, are within the Panel's terms of reference.[651]

7.6.2 Whether claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III of the GATT 1994, in respect of certain measures, are outside the scope of this proceeding

7.384. The United States additionally requests preliminary rulings that the European Union is precluded from bringing claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III of the GATT 1994 in respect of various original measures.[652] The United States advances different bases for these requests depending on the identity of the original measures and the claims to which they were subject in the original proceeding. In summary, the United States makes the following objections:

a. To the inclusion of claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the original Washington State tax measures enacted under HB 2294 on the basis that they were the subject of claims under Articles 3.1(a) and 3.2 of the SCM Agreement in the original proceeding and those claims were rejected.[653]

b. To the inclusion of claims under Articles 3.1(a) and 3.2 of the SCM Agreement against all other original measures (aside from the original Washington State tax measures enacted under HB 2294 which are the subject of the above objection, and the FSC/ETI measures) on the basis that the European Communities did not make such claims in the original proceeding and thus is precluded from bringing those claims against those same measures at the compliance stage.[654]

c. To the inclusion of claims under Articles 3.1(b) and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994 in relation to all original measures on the basis that the European Communities did not make such claims in the original proceeding and thus is precluded from bringing those claims against those same measures at the compliance stage.[655]

7.385. We consider the objection in (a) above first in Section 7.6.2.1 before considering those in (b) and (c), which raise common legal issues, together in Section 7.6.2.2.

7.6.2.1 Claims under Articles 3.1(a) and 3.2 of the SCM Agreement with respect to original Washington State tax measures enacted under HB 2294

7.386. We first consider the United States' request that the Panel rule that the European Union's claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the following measures are precluded:

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[651] The Panel's ruling that the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III of the GATT 1994, are within its terms of reference is without prejudice to its further rulings, in Section 7.6.2, as to whether these claims in respect of certain measures are nevertheless outside the scope of this compliance proceeding.

[652] United States' request for preliminary rulings, dated 13 November 2012, paras. 16 and 17. While paragraph 32 of the European Union's panel request alleges that the measures in items I.A through I.G are inconsistent with Articles III:1, III:4, and III:5 of the GATT 1994, in its first and second written submissions, the European Union's claims in relation to Article III of the GATT 1994 are limited to alleged inconsistency with Article III:4 of the GATT 1994. (See European Union's first written submission, paras. 777-788; and second written submission, paras. 851-864). The European Union therefore appears not to pursue its other claims under Article III of the GATT 1994. Accordingly, the Panel refers hereafter to the European Union's claims under Article III:4 of the GATT 1994.

[653] United States' request for preliminary rulings, dated 13 November 2012, paras. 5-7 and 60; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 25; first written submission, para. 80; and second written submission, paras. 16 and 35.

[654] United States' request for preliminary rulings, dated 13 November 2012, para. 17; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 25; first written submission, para. 84; and second written submission, para. 44.

[655] United States' request for preliminary rulings, dated 13 November 2012, para. 16; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 16; first written submission, para. 84; and second written submission, paras. 46 and 48.

a. Washington State B&O tax rate reduction;

b. Washington State B&O tax credits for preproduction/aerospace product development;

c. Washington State B&O tax credit for property taxes; and

d. Washington State sales and use tax exemptions for computer hardware, peripherals, and software.

7.6.2.1.1 Main arguments of the parties and third parties

7.387. The United States argues that the European Union "did not appeal" the finding of the original panel that the taxation measures enacted under HB 2294 had not been demonstrated to be inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement, and the European Union should not now be given an "unfair second chance" to make its case.[656] The United States refers to the Appellate Body Reports in *US – Upland Cotton (Article 21.5 – Brazil*) and *EC – Bed Linen (Article 21.5 – India*) as standing for the proposition that a compliance proceeding is not the proper forum for a complaining party to re-litigate the original dispute by repeating unsuccessful claims.[657]

7.388. The United States says that, given that the European Union has not argued that the Washington State B&O tax rate reduction itself is new, or has changed, it is the same measure considered by the original panel. The European Union's Article 3.1(a) and 3.2 claims are therefore not within the compliance panel's terms of reference.[658] Additionally, although the European Union has argued (for the first time in its second written submission) that the Washington State B&O tax credits for preproduction/aerospace product development have been modified, it has failed to demonstrate that these tax credits are a "new measure" or a "measure taken to comply".[659] The United States faults the European Union for attempting to conflate the separate measures and the legislation under which they were enacted (HB 2294) to argue that, because the preproduction tax credits are a "new measure", the Panel must now assess HB 2294 and the associated tax provisions, as revised, in their totality and in an integrated manner. The United States says that the original panel was clear that the measures were the exemptions themselves, not HB 2294. Modification of an individual measure does not authorize a complaining party to re-litigate any claim it wants with respect to distinct measures that may have been enacted under the same legislation.[660]

7.389. The United States argues that the European Union cannot attempt to circumvent this restriction on the scope of Article 21.5 proceedings by asserting "artificial distinctions between a measure and the 'subsequent incidences' of applying that measure".[661] There is no basis for treating "subsequent incidences of application" of a measure as a separate measure. The United States says that the European Union's argument is similar to an argument made by the United States in *US – Upland Cotton (Article 21.5 – Brazil*) – that payments under a subsidy programme could, in a compliance proceeding, be analysed separately from the programme at issue in the original proceeding – an argument rejected by the Appellate Body.[662]

7.390. The European Union observes that the issue raised by the United States is not in truth whether these claims are within the Panel's terms of reference, but rather, whether the European Union is seeking an adjudication of the same matter that was adjudicated by the original panel.[663] As such, this is not an issue for a preliminary ruling but relates to the substantive merits of the European Union's claim. In any case, the European Union submits that it is not seeking an adjudication of the same matter. It argues that claims of *de facto* export contingency must be considered on the basis of all of the facts. It makes the following arguments:

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[656] United States' second written submission, para. 36.
[657] United States' second written submission, para. 36.
[658] United States' second written submission, para. 39.
[659] United States' second written submission, para. 42.
[660] United States' second written submission, para. 43.
[661] United States' second written submission, para. 37.
[662] United States' second written submission, para. 38.
[663] European Union's response to the United States' request for preliminary rulings, dated 23 November 2012, para. 8.

a. The European Union's claim in the original proceeding was that HB 2294 was inconsistent with Articles 3.1(a) and 3.2 owing to five categories of fiscal subsidies. The panel found that four of these (i.e. the four original Washington State tax measures listed in paragraph 7.386 above, which were treated as three by the panel) were subsidies, and assessed the European Union's claim of *de facto* export contingency with respect to those four (three) Washington State tax measures enacted under HB 2294. Some of these measures have since been modified. The Panel should now assess HB 2294 and the associated tax measures, as revised, in their totality and in an integrated manner.[664]

b. The measures before this Panel are not the same as the measures at issue in the original proceeding. Also at issue in this proceeding are the "subsequent incidences of application" of the measures which were not before the original panel.[665] These subsequent incidences of application are actually new measures that have a close nexus to the "overarching measure" of which they are discrete applications.[666]

c. The *de facto* export contingency challenge brought in this proceeding does not relate to the same aspect of the measures challenged in the original proceeding (i.e. that they are contingent upon sales) but rather to the fact that the measures are subsidies, and "in the nature of encouragement or direction and/or reward".[667]

d. The "clarification of relevant WTO law" to be applied by the Panel is different from that followed by the original panel, especially following the "confirmations and clarifications" provided by the Appellate Body Report in *EC and certain member States – Large Civil Aircraft*.[668] These clarifications form part of the WTO *acquis* and subsequent panels, including this compliance Panel, are expected to follow the same interpretations.

e. The evidence and facts on which the European Union relies are different.[669]

7.391. In its second written submission, the European Union sets forth its understanding of concepts such as jurisdiction and terms of reference, and submits that there is no rule of *res judicata* in WTO dispute settlement proceedings or any possibility of *non liquet*. It also discusses what it considers are the limited circumstances in which the Appellate Body Report in *EC – Bed Linen (Article 21.5 – India*) would apply.[670] At several places throughout this discussion, the European Union makes the following argument:

> {O}nce particular measures are properly within the scope of compliance proceedings, because they are declared or undeclared measures taken to comply, any claim may be made against them, whether or not made in the original proceedings, *and the compliance panel must assess and rule on such claim*, such ruling being subject to scrutiny on appeal.[671]

7.392. Certain of the third parties (Brazil, Canada, Japan, and Korea) make general arguments as to the situations in which a complaining party may be precluded from challenging a measure in a compliance proceeding that it had not successfully challenged in the original proceeding. These arguments are summarized in Section 7.2.1.1 of this Report.

7.6.2.1.2 Evaluation by the Panel

7.393. The question before us is whether the European Union can bring prohibited subsidy claims under Articles 3.1(a) and 3.2 of the SCM Agreement in respect of the four Washington State tax measures enacted under HB 2294 which were the subject of unsuccessful claims under Article 3.1(a) of the SCM Agreement in the original proceeding.

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[664] European Union's second written submission, para. 85.
[665] European Union's second written submission, para. 58.
[666] European Union's second written submission, para. 61.
[667] European Union's second written submission, para. 76.
[668] European Union's second written submission, paras. 68-74.
[669] European Union's second written submission, para. 77.
[670] European Union's second written submission, paras. 9-40.
[671] European Union's second written submission, paras. 22, 24, and 26. (emphasis original)

7.394. To recall, in the original proceeding, the European Communities challenged the subsidies granted under HB 2294 (including the above-referenced measures) as being *de facto* export-contingent subsidies inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement.[672] The panel found that the European Communities had not demonstrated the existence of a "tie" between the grant of the subsidies and anticipated exportation or export earnings. Nor had it established that the subsidies were tied to actual exportation. Consequently, the panel found that the European Communities had not demonstrated that the Washington State tax measures enacted under HB 2294 were inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement.[673]

7.395. In its notice of appeal, the European Union appealed the panel's interpretation of Article 3.1(a) and footnote 4 of the SCM Agreement, and also argued that the panel failed to make an objective assessment as required by Article 11 of the DSU, in finding that "the European Union had not demonstrated that HB 2294 and the B&O tax rate reductions and instances of application are subsidies contingent/conditional in fact upon export."[674] The European Union requested the Appellate Body to complete the analysis.[675] However, on 19 May 2011, pursuant to Rule 30(1) of the Appellate Body's Working Procedures, the European Union notified the Appellate Body, as well as the United States and third participants, that it was withdrawing its appeal insofar as it related to subsidies contingent upon export, with immediate effect.[676] Consequently, the panel's findings concerning the Article 3.1(a) and 3.2 claims were not disturbed by the Appellate Body and were adopted as part of the DSB recommendations and rulings. Thus, the DSB recommendations and rulings in the original proceeding included a finding that the European Communities had failed to demonstrate that the challenged Washington State tax measures enacted under HB 2294 were inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement.

7.396. In Section 7.2 of this Report, we dismiss the United States' request for preliminary rulings that the four original Washington tax measures (three of which are the subject of this preliminary rulings request regarding the permissibility of allowing the European Union to reassert claims under Article 3.1(a)) are outside the scope of this proceeding on the grounds that they were original measures not subject to the DSB recommendations and rulings.[677] That issue dealt with the question of whether original measures that did not conclusively result in findings of WTO-inconsistency in the original proceeding may be subsequently challenged in a compliance proceeding.

7.397. The question before us in this Section is whether a complaining party may re-litigate the same claims of WTO-inconsistency in relation to unchanged aspects of original measures in circumstances where those claims were found not to have been established in the original proceeding. In our view, the key consideration is that the panel rejected the European Communities' Article 3.1(a) claims in respect of the original Washington State tax measures, and the European Union did not ultimately appeal that finding. This situation appears to be similar to the situation addressed in *EC – Bed Linen (Article 21.5 – India*), where India did not appeal a finding of the panel and then sought to raise the same claim in relation to an unchanged aspect of the implementation measure. The Appellate Body said that an unappealed finding in a panel report that is adopted by the DSB must be regarded as a final resolution to a dispute between the parties in respect of that particular claim and the specific component of the measure that is the subject of that claim.[678]

7.398. The European Union seeks to narrow the application of the reasoning in *EC – Bed Linen (Article 21.5 – India*) to the particular facts of that case. Thus, it argues that the principle expressed in *EC – Bed Linen (Article 21.5 – India)* is confined to scenarios where one or more of following is present:

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[672] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1465 and 7.1472.
[673] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1590.
[674] European Union's notice of appeal, dated 4 April 2011, WT/DS353/8, para. 4.
[675] European Union's notice of appeal, dated 4 April 2011, WT/DS353/8, para. 4.
[676] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 28.
[677] We take this opportunity to explain that the "original Washington tax measures" the focus of our ruling in Section 7.2.1 overlap with the Washington State tax measures enacted under HB 2294 which are the focus of this ruling, with the exception of the City of Everett B&O tax rate reduction, which is a municipal tax, and therefore is an original Washington tax measure, but not a *Washington State* tax measure enacted under HB 2294.
[678] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 93.

a. the measures or aspects of measures challenged have not changed and the aspect of the measure challenged was "separable" from other aspects of the measure;

b. the facts and evidence are exactly the same as the facts and evidence in the original proceeding; and

c. the law does not change between the original proceeding and the compliance proceeding.[679]

7.399. Moreover, it notes that every subsequent case has distinguished *EC – Bed Linen (Article 21.5 – India*).[680] In short, the European Union's case is that these claims are not the same claims it made in the original proceeding; the measures are different, the applicable law is different, and the facts are different.

7.400. The European Union argues that the Washington State tax measures before this Panel are not the same as those at issue in the original proceeding; rather they are "subsequent incidences of application" of an overarching measure to which both are closely connected. We are not persuaded by the European Union's portrayal of the "subsequent instances of application" of a measure as being a new measure, distinct from the original measure, and for this to affect the question of whether the Article 3.1(a) claims against the original measure can be re-litigated. The Appellate Body was critical of the United States' attempts to distinguish the payments made under a subsidy programme from the subsidy programme itself in the *Upland Cotton* compliance proceeding.[681] The Appellate Body said:

> We have some difficulty accepting the notion that a subsidy programme and the payments provided under that programme can be assessed separately. While the payments may cause adverse effects, the amount of the payments, beneficiaries, and the terms and conditions of eligibility will be provided in the subsidy programme or legislation authorizing those payments.[682]

7.401. The European Union also argues that measures and instances of their application are "inseparable", as are cases involving subsidies that are prohibited and/or actionable, or where subsidies may be cumulated or aggregated for purposes of the serious prejudice analysis.[683] However, the European Union appears to take out of context a reference to "separability" between aspects of a measure that the Appellate Body made in a case subsequent to *EC – Bed Linen (Article 21.5 – India*) to the effect that a complaining party can challenge an aspect of a measure that it did not challenge in the original proceeding in situations where that aspect is an "inseparable" part of the "measure taken to comply".[684] The notion of "inseparability" of aspects of a measure referred to in that case is not relevant to the present discussion.

7.402. We also do not consider the reasoning in *EC – Bed Linen (Article 21.5 – India*) to be confined to cases where there is absolutely no change in the facts or evidence. *EC – Bed Linen (Article 21.5 – India*) concerned a challenge by India to an aspect of a European Commission anti-dumping determination. None of the facts or evidence regarding the investigation changed; it was simply a question of challenging one aspect of the Commission's determination that had not been challenged in the original proceeding because the panel had found that India had not made a *prima facie* case. Nevertheless, we do not see a basis for limiting the reasoning of the Appellate Body in that case to situations in which the claim does not involve any changed facts or evidence. A claim of WTO-inconsistency raised for a second time in a compliance proceeding could be expected to involve different facts, at least in the subsidies context, which presumably would deal with events at a different point in time. It is almost always possible for a complaining party in a compliance proceeding to present new facts and evidence on the record to support a claim. To

[679] European Union's second written submission, paras. 12 and 33-38.
[680] European Union's second written submission, para. 39.
[681] The United States in that case had argued that the DSB recommendations and rulings covered only payments made under marketing loan and counter-cyclical programmes in marking years 1999-2002 and did not extend to payments under those same programmes made in subsequent years. Thus it argued that subsequent payments under those programmes were outside the scope of the compliance proceeding. (See Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, paras. 22-27).
[682] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil*), para. 234.
[683] European Union's second written submission, paras. 12 and 78-80.
[684] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), paras. 432 and 433.

limit the application of the notion of finality of DSB recommendations and rulings expressed in *EC – Bed Linen (Article 21.5 – India*) to situations in which there are no new facts or evidence on the record presented in support of the claim in the compliance proceeding would be to implicitly overrule *EC – Bed Linen (Article 21.5 – India*).

7.403. We are mindful that there is a legitimate question as to whether *de facto* claims relate so inherently to the particular facts on which the claims are argued that whenever the constellation of facts supporting the claim changes, the "claim" of *de facto* export contingency made in a compliance proceeding should be considered to be a new and different claim to that made in the original proceeding. Thus we do not exclude the possibility that, owing to fundamental changes in the factual situation between the original proceeding and compliance proceeding, a measure that was originally found not to be *de facto* export contingent could subsequently become so. In this situation, it may be that the complaining party would not be precluded from demonstrating *de facto* export contingency in a compliance proceeding. However, this is not the present situation. For reasons that we explain below, we regard the individual claims of inconsistency with Articles 3.1(a) and 3.2 that the European Union makes in relation to the Washington State tax measures enacted under HB 2294 in this proceeding as the same claims of *de facto* export contingency that it made in the original proceeding with respect to those measures.

7.404. Comparing the claims of *de facto* export contingency made in the original and compliance proceedings, we see that in the original proceeding, the European Communities' Article 3.1(a) claim concerned "the grant of subsidies under HB 2294" as being contingent in fact upon export performance because the grant is tied to actual or anticipated exportation or export earnings.[685] The contention was that the entering into effect of HB 2294 was explicitly contingent on the siting of a "significant commercial airplane final assembly facility in Washington State" that could produce "at least thirty-six superefficient airplanes {i.e. 787s} per year". The European Communities presented evidence to seek to demonstrate that it was highly unlikely that Boeing could sustain a production rate of 36 787 aircraft per year for the U.S. market alone. The panel described the issue before it as "whether the tax measures under HB 2294 constitute subsidies contingent upon export performance under Article 3.1(a) of the SCM Agreement".[686] It also said that the "European Communities' claim is that HB 2294 is *de facto* contingent upon export performance" before referring to a series of arguments advanced by the European Communities regarding HB 2294 (as opposed to each of the individual taxation measures enacted under it).[687] The panel concluded that the European Communities "has not demonstrated that HB 2294 is contingent upon export performance"[688] and on that basis found that the European Communities had not demonstrated that the taxation measures enacted under HB 2294 are inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement.[689]

7.405. In the present proceeding, the European Union claims that the subsidies (i.e. all measures at issue in this proceeding, including the four Washington State tax measures enacted under HB 2294) are "contingent/conditional, in fact, whether solely or as one of several other conditions, upon export performance, and are prohibited by Articles 3.1(a) and 3.2 and footnote 4 of the SCM Agreement".[690] The European Union argues that Boeing's actual and anticipated sales are "skewed" toward exports, that through its repeated actions over time, the United States has "conditioned Boeing's behaviour so as to induce or incentivise such skewing" and that, "taken as a whole, or in any permutation" the facts and evidence demonstrate that the granting or maintaining of the subsidies, without having been made legally contingent/conditional upon export performance, is nevertheless in fact tied to actual or anticipated exportation or export earnings.[691] The European Union clarified any apparent confusion over the nature of these claims in its second written submission:

> Thus, contrary to the manner in which the United States seeks to reformulate the EU claims, the European Union does not argue that the measures only become

[685] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1465 and 7.1472. See also para. 4.254: "the European Communities argues that the State of Washington's HB 2294 tax incentives are contingent in fact on export performance, within the meaning of Article 3.1(a) of the SCM Agreement".
[686] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1513.
[687] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1514.
[688] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1543 and 7.1589.
[689] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1590.
[690] European Union's first written submission, para. 763.
[691] European Union's first written submission, para. 763.

> inconsistent when considered collectively and does not make a claim that seeks to identify a "system of subsidies" as a measure at issue. Rather, we argue that each of the measures is inconsistent; and we specify, as recalled above, the facts and evidence on which we rely for that purpose. Thus, each subsidy is viewed individually, but not in clinical isolation from the totality of the facts and evidence (including the other subsidies) supporting the claim.[692]

7.406. The European Union does not seek to justify raising its Article 3.1(a) and 3.2 claims against the Washington State tax measures enacted under HB 2294 in the compliance proceeding on the basis of fundamental factual changes that have taken place between the original and compliance proceedings. Rather, the European Union adopts a different underlying theory as to *how* the measures in question are *de facto* export contingent, and seeks to adduce different facts in support of that different theory. In other words, the *arguments* the European Union now relies upon to show *de facto* export contingency are different from those that the European Communities made in the original proceeding. They no longer concern the condition upon which the HB 2294 tax incentives were to become effective, but rather an allegation that the United States has created a state of interdependence and mutual expectation regarding exportation and the receipt of further subsidies.[693]

7.407. Despite the different argumentation, the claims under Articles 3.1(a) and 3.2 of the SCM Agreement in respect of the Washington State tax measures enacted under HB 2294 remain the same. Those Article 3.1(a) and 3.2 claims were resolved in a panel report that was adopted by the DSB and must be regarded as a final resolution of the dispute between the parties in respect of those claims and the measures the subject of those claims. The European Union is not permitted to reassert those claims against those measures in a compliance proceeding based on a new theory of how the measures are *de facto* export contingent.

7.408. We are aware that two of the taxation measures enacted under HB 2294 have been modified: (a) the B&O tax credits for preproduction/aerospace development were amended by SSB 6828 to expand their application beyond preproduction development to include all aerospace product development, as well as to permit non-manufacturing entities to claim the credit for expenditures after 30 June 2014; and (b) the B&O tax credits for property taxes were amended by HB 2466 to extend the availability of the tax credits to leasehold excise taxes and not just property taxes. However, it is not apparent that the nature of these modifications is relevant to the European Union's arguments as to why the measures are now contingent in fact upon export performance when they were not previously so. Accordingly, we do not consider that this factor changes our analysis.[694]

7.409. Finally, it remains to consider the European Union's argument regarding the clarification of relevant WTO law to be applied by the compliance Panel, which will be different from that followed by the original panel, owing to the confirmations and clarifications of the Appellate Body in *EC and certain member States – Large Civil Aircraft*. Specifically, the Appellate Body in *EC and certain member States – Large Civil Aircraft* clarified the interpretation of Article 3.1(a) of the SCM Agreement in a number of respects which differ from the original panel's interpretation of that provision.[695]

7.410. The difficulty we see with the argument that the principle expressed in *EC – Bed Linen (Article 21.5 – India*) does not apply in respect of claims decided on the basis of "outdated" interpretations of the covered agreements is that, in contrast to bringing a new proceeding in which the claim is made against that measure, a reconsideration of the unsuccessful claim at the

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[692] European Union's second written submission, para. 53. (emphasis added, fns omitted)

[693] See European Union's first written submission, para. 758:

> The United States has thus come to associate subsidies with exports, and Boeing has come to associate exports with subsidies, each becoming a reflex to the other, so deeply ingrained that it can no longer be disguised … Boeing has thus been transformed into precisely what US industrial policy was designed to create: a US national champion in a global market, skewed towards exports.

[694] For the reasons explained in our ruling "Reasons for Declining the European Union's Request for Leave to File and Additional Submission Regarding SSB 5952", the text of which may be found in Section 7.7 of this Report, we do not consider in this Report the amendments effected by SSB 5952 to the provisions of the Revised Code of Washington that reflect the Washington State tax measures enacted under HB 2294.

[695] See European Union's second written submission, paras. 68-74.

compliance stage amounts to re-litigating an issue that was conclusively decided on the merits in the original proceeding in a manner that compromises the finality of DSB recommendations and rulings.[696] As the Appellate Body said:

> {A}n *unappealed* finding included in a panel report that is *adopted* by the DSB must be treated as a *final resolution* to a dispute between the parties in respect of the *particular* claim and the *specific* component of a measure that is the subject of that claim.[697]

7.411. Clarifications of interpretations of the covered agreements can be expected to emerge over time. This should not affect the finality of DSB recommendations and rulings. As the Appellate Body in *EC – Bed Linen (Article 21.5 – India*) observed: "{a}t some point, disputes must be viewed as definitely *settled* by the WTO dispute settlement system".[698] Moreover, in the present proceeding, the European Union does not seek to make the same case of export contingency that it tried to make in the original proceeding, but on the basis of a clarified understanding of the interpretation of Article 3.1(a). Rather, the arguments the European Union makes in support of its export contingency claims in this proceeding and the evidence it provides in support of those arguments are altogether different from those in the original proceeding, no longer focusing on the condition on which HB 2294 was enacted, but on the "Pavlovian effect" of the United States' continued subsidization of Boeing in return for increased exports.[699]

7.412. **On the basis of the foregoing considerations, the Panel grants the United States' request and rules that the European Union is precluded from bringing claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the following four original Washington State tax measures enacted under HB 2294:**

a. Washington State B&O tax rate reduction;

b. Washington State B&O tax credits for preproduction/aerospace product development[700];

c. Washington State B&O tax credit for property taxes[701]; and

d. Washington State sales and use tax exemptions for computer hardware, peripherals, and software.

7.6.2.2 Claims under Articles 3.1(a) and 3.2 of the SCM Agreement against certain original measures; and claims under Articles 3.1(b) and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994 against all original measures

7.413. We now consider the United States' request that the Panel rule that the European Union is precluded from making the following claims in respect of the following measures:

a. Claims that all original measures, other than the Washington State tax measures enacted under HB 2294 and the FSC/ETI measures, are inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement.[702]

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[696] The European Union was free to bring a new proceeding alleging violations of Articles 3.1(a) and 3.2 of the SCM Agreement in relation to these measures, and to support the claims based on the interpretation of Article 3.1(a) as clarified by the Appellate Body in *EC and certain member States – Large Civil Aircraft.*

[697] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 93. (emphasis original)

[698] Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 98. (emphasis original)

[699] As noted above, the European Union initially appealed the panel's findings regarding the export contingency of the Washington State tax measures enacted under HB 2294 in the original proceeding but then withdrew its appeal on 19 May 2011, the day after the Appellate Body Report in *EC and certain member States – Large Civil Aircraft* was circulated. It seems to us that if the European Union had wanted to pursue its export contingency claims in relation to the HB 2294 taxation measures on the basis of the newly clarified interpretation of Article 3.1(a) of the SCM Agreement, it could have done so by continuing with its appeal of the panel's findings regarding its 3.1(a) claim in the original proceeding.

[700] Including amendments thereto pursuant to SSB 6828.

[701] Including amendments thereto pursuant to HB 2466.

[702] United States' request for preliminary rulings, dated 13 November 2012, paras. 18 and 60.

b. Claims that all original measures are inconsistent with Articles 3.1(b) and 3.2 of the SCM Agreement.

c. Claims that all original measures are inconsistent with Article III of the GATT 1994.[703]

7.414. The United States objects to the inclusion of these claims in respect of the above categories of original measures on the basis that these claims were not made in the original proceeding with respect to these measures and could have been, such that the European Union is precluded from bringing them in the compliance proceeding.[704]

7.6.2.2.1 Main arguments of the parties and third parties

7.415. The United States argues that the European Union did not make Articles 3.1(a), 3.1(b), and 3.2 claims against the above-referenced measures in the original proceeding and is precluded from making those claims now.[705] Similarly, the European Union could have pursued Article III:4 GATT claims in the original proceeding but it chose not to. Indeed, in its panel request in the original proceeding, the European Communities did make claims under Article III:4 of the GATT 1994 with respect to all of the measures listed in its panel request, but it later abandoned those claims. A party may not invoke Article 21.5 of the DSU to pursue a claim that it could have, but did not, pursue in the original proceeding.[706]

7.416. The United States disputes the European Union's contention that the measures before this Panel are not the measures that were before the original panel, asserting that most of the NASA, DOD, Washington State and Kansas measures covered by the European Union's Article III claim were in fact before the original panel.[707] Although the European Union contends that the facts and evidence have changed significantly, it does not point to any specific facts or evidence that might warrant allowing the European Union to make claims that it could have raised in the original proceeding, but opted not to. The European Union's assertion that the facts and evidence on which the claims are based only came into existence after 17 February 2006 is "demonstrably false" because its Article III claims rest at base on a series of quotations reproduced in Exhibit EU-583, many of which predate 17 February 2006.[708]

7.417. The European Union argues that the claims in question are based on facts and evidence that only came into existence after the date on which the original panel was established (17 February 2006) and that these are not therefore claims that the European Communities could have raised in the original proceeding.[709] The premise on which the United States' objection is based is therefore groundless.

7.418. In addition, the European Union argues, as it did in relation to the United States' objections to the European Union's Article 3.1(a) claims in respect of the Washington State tax measures enacted under HB 2294, (see Section 7.6.2.1.1 above) that the measures before this Panel at the compliance stage are not the same measures that were before the original panel. Rather, these measures are "instances of application" that are different from the original measures. In addition, the law has changed, the measures have been altered, the facts and

[703] While paragraph 32 of the European Union's panel request alleges that the measures in items I.A through I.G are inconsistent with Articles III:1, III:4, and III:5 of the GATT 1994, in its first and second written submissions, the European Union's claims in relation to Article III of the GATT 1994 are limited to alleged inconsistency with Article III:4 of the GATT 1994. (See European Union's first written submission, paras. 777-788; and second written submission, paras. 851-864). The European Union therefore appears not to pursue its other claims under Article III of the GATT 1994.

[704] United States' request for preliminary rulings, dated 13 November 2012, paras. 15-17 and 60; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, paras. 14 and 25; and first written submission, paras. 81 and 84.

[705] United States' first written submission, paras. 82, 84, and 89; request for preliminary rulings, dated 13 November 2012, paras. 16 and 17.

[706] United States' first written submission, paras. 85, 670, and 671; second written submission, para. 48.

[707] United States' second written submission, para. 50.

[708] United States' first written submission, para. 83; second written submission, para. 50.

[709] European Union's second written submission, paras. 95 and 100.

evidence relied upon have changed and the measures are not separable from other measures that are within the scope of this compliance proceeding.[710]

7.419. As regards the claim under Article 3.1(a) of the SCM Agreement, the European Union clarifies also that it is not arguing that each of the identified measures, viewed in isolation from all of the other measures, is prohibited. Rather, taking into account all of the facts, each of the identified measures is prohibited.[711] This is not a claim that could have been made in the original proceedings because a substantial part of the facts relied upon only materialized in the intervening period.[712]

7.420. Brazil argues that a Member cannot invoke Article 21.5 of the DSU to pursue a claim that it could have pursued in the original proceeding, but chose not to raise or otherwise abandoned at some stage in the dispute settlement process. An implementing Member should be entitled to presume that it need not address those unchallenged aspects in attempting to comply with the DSB recommendations and rulings.[713] Brazil therefore considers that the claims made by the European Union under Article III:4 of the GATT 1994 are outside the scope of this proceeding, since allowing a party to invoke Article 21.5 of the DSU to pursue claims that it could have pursued in the original proceeding, but instead chose to abandon, would undermine the dispute settlement system's functioning and predictability.[714] Where the situation involves new claims relating to a measure for which the original panel rejected the complaining Member's claims of inconsistency with a covered agreement, Brazil argues that the measures should be presumed to be consistent with WTO obligations. To include such a measure within the scope of a compliance proceeding would require the complaining Member to demonstrate that the measure has undergone such significant changes that it is a "measure taken to comply" with the adverse WTO decision.[715]

7.421. Canada considers that a complaining party should generally be precluded from raising claims in compliance proceedings that it could have brought in the original proceeding but did not. To allow a complaining party to make a claim that it could have, but did not, raise in the original proceeding would jeopardize fundamental fairness and due process rights since, in the absence of a finding of a violation of its obligations, a respondent should be allowed to assume that its measure is WTO-consistent.[716] Canada considers that this principle applies to the claims advanced under Articles 3.1(a) and 3.1(b) with respect to the Washington State B&O tax rate reduction.[717]

7.422. Japan considers that respect for the due process rights of the responding party requires that a complaining party generally should not be permitted to bring a claim in a compliance proceeding that could have been brought in the original proceeding. If an unchanged measure (or unchanged elements of that measure) were subject to review by a compliance panel pursuant to a claim that could have been, but was not, raised in the original proceeding, this would effectively give the complaining party an unfair "second chance". However, the question of whether a claim could or could not have been brought in the original proceeding is fact-specific and should be addressed on a case-by-case basis.[718]

[710] European Union response to the United States' request for preliminary rulings, dated 23 November 2012, paras. 9, 43, and 44; supplemental submission on the United States' request for preliminary rulings, paras. 21-23; and second written submission, paras. 97 and 102.

[711] European Union's supplemental submission on the United States' request for preliminary rulings, para. 23.

[712] European Union's supplemental submission on the United States' request for preliminary rulings, para. 23; second written submission, paras. 89, 95, and 100.

[713] Brazil's third-party response to Panel question No. 1, paras. 3 and 4. Brazil argues that a complaining Member cannot "present a long list of alleged violations in its panel request, drop some of them during the proceedings, and then decide to reintroduce them in the compliance panel, as the system's functioning and predictability would be undermined." See also Brazil's third-party submission, paras. 39 and 40.

[714] Brazil's third-party submission, paras. 39 and 40.

[715] Brazil's third-party submission, para. 41.

[716] Canada's third-party response to Panel question No. 1, paras. 2 and 3.

[717] Canada's third-party statement, paras. 5-7.

[718] Japan's third-party response to Panel question No. 1, para. 5.

7.423. Korea considers that the United States' objections are based on an expansive concept of "claim preclusion" that applies under U.S. domestic law.[719] However, the WTO's dispute settlement procedures (which do not allow "amendments" to the Panel's terms of reference to incorporate issues that were not addressed in the complaining party's consultation and panel requests) do not appear to permit the flexibility that justifies the broad rule of claim preclusion applied in U.S. law. Moreover, the relevant provisions of the DSU do not support the conclusion that broad rules of claim preclusion should be applied in a compliance proceeding.[720] Korea considers that, as a practical matter, the only claims barred in a compliance proceeding are those that were already decided in the original proceeding.[721]

7.6.2.2.2 Evaluation by the Panel

7.424. The European Union's panel request includes claims that all of the measures identified in items I.A to I.G thereof (i.e. DOD aeronautics R&D measures, NASA aeronautics R&D measures, FAA aeronautics R&D measure, Washington measures, FSC/ETI measures, State of Kansas and City of Wichita measures, and South Carolina measures) are inconsistent with Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III of the GATT 1994.[722] For purposes of our evaluation of whether the European Union is precluded from bringing certain claims in respect of certain measures, based on the claims that the European Communities allegedly either made or failed to make in respect of those measures in the original proceeding, it is helpful to identify four different categories of measures:

a. Original measures that remain unchanged since the original proceeding: Certain of the measures cited in items I.A to I.G of the European Union's panel request are measures that were challenged by the European Communities in the original proceeding which remain unchanged since the original proceeding, such as the Washington State B&O tax rate reduction[723], the Washington State sales and use tax exemptions for computer software, hardware, and peripherals, the City of Everett B&O tax rate reduction, the FSC/ETI measures[724], the tax abatements related to the City of Wichita IRBs, and the pre-2007 NASA Space Act Agreements and pre-2007 DOD procurement contracts.

b. Original measures that have otherwise been amended since the original proceeding: Certain other measures cited in items I.A to I.G of the European Union's panel request are measures that have been amended, but not in purported compliance with the DSB recommendations and rulings: i.e. the Washington State B&O tax credits for aerospace preproduction/aerospace product development and the Washington State B&O tax credit for property taxes, both of which have been amended to expand their scope of application.

c. Original measures that have been amended since the original proceeding in purported compliance with the DSB recommendations and rulings: Certain other measures cited in items I.A to I.G of the panel request are measures that were before the original panel that have been amended in order to comply with the DSB recommendations and rulings in the original proceeding (i.e. the pre-2007 NASA procurement contracts and DOD assistance instruments at issue in the original proceeding, which were amended by the respective Boeing Patent Licence Agreements).

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[719] Korea's third-party submission, para. 6 (referring to *Commissioner v. Sunnen*, 333, U.S. 591, 68 S.Ct. 715, 719, (1947), and *Sea-Land Servs., Inc. v. Gaudet*, 414 U.S. 573, 578-79, 94, S.Ct. 806, 812, reh'g denied, 415 U.S. 986, 94 S.Ct. 1582 (1974)).

[720] Korea's third-party submission, para. 7.

[721] Korea's third-party submission, para. 11.

[722] European Union's request for the establishment of a panel, paras. 30-32; and United States first written submission, para. 85. The United States also requests a preliminary ruling that the European Union's panel request does not satisfy the requirements of Article 6.2 of the DSU in relation to these claims. (See United States' request for preliminary rulings, dated 13 November 2012, para. 45; and Section 7.6.1 of this Report).

[723] Excluding amendments effected by SSB 5952, which are outside the terms of reference of this Panel. See Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952 in Section 7.7 below.

[724] We note that the European Communities had brought claims under Article 3.1(a) against the FSC/ETI measures in the original proceeding and the United States does not object to the European Union bringing Article 3.1(a) claims against these measures in this compliance proceeding.

d. New measures that are within the scope of the compliance proceeding. In addition, there are measures that have come into existence since the original proceeding, which the European Union alleges the United States grants or maintains, and which the European Union therefore challenges as evidencing a failure of the United States to withdraw the subsidy, or take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement. These measures are the South Carolina measures, the FAA aeronautics R&D measure, the JCATI measure, and the post-2006 NASA and DOD aeronautics R&D measures.[725]

7.425. The United States' objections in this part of our findings concern measures in categories (a), (b), and (c) above.[726] There is no dispute between the parties that none of the measures listed in paragraphs (a) or (b) of paragraph 7.424 above was challenged in the original proceeding as being inconsistent with Articles 3.1(b) and 3.2 of the SCM Agreement or with Article III:4 of the GATT 1994. With the exception of the Washington State tax measures enacted under HB 2294 (discussed in Section 7.2 of this Report) and the FSC/ETI measures, none of those measures was challenged in the original proceeding as being inconsistent with Article 3.1(a) of the SCM Agreement.

7.426. The Appellate Body stated in *US – Upland Cotton (Article 21.5 – Brazil*) that a complaining party "ordinarily would not be allowed to raise claims in an Article 21.5 proceeding that it could have pursued in the original proceedings, but did not".[727] At the meeting with the Panel, the European Union sought to emphasize the use of the word "ordinarily" in that statement, and suggested that a reasonable balance needs to be struck. We note that in a subsequent case, the Appellate Body said that the use of "ordinarily" in the *Upland Cotton* compliance case did not mean that such claims could never be brought.[728] In *US – Zeroing (EC) (Article 21.5 – EC*), the Appellate Body, overruling the panel, permitted the European Union to raise in a compliance proceeding a challenge to an "arithmetical error" allegedly committed by the USDOC in a Section 129 Determination that had been carried over from an anti-dumping determination that the European Union had successfully challenged on other grounds in the original proceeding. The Appellate Body considered that the arithmetical error was an "integral" part of the Section 129 Determination because it affected the duty that was to be levied on the imports of that product and allowed the challenge on that basis. It distinguished "inseparable" elements of compliance measures from "separable" aspects which, ordinarily, could not be challenged at the compliance stage if they were not challenged at the original stage.[729] For example, the aspect of the measure that India sought to challenge at the compliance stage in the *Bed Linen* case was considered a "separable" aspect of the compliance measure (a non-attribution analysis that was a distinct and "separable" part of the causation analysis that carried over from the original dumping determination to the compliance measure because India had not successfully challenged it in the original proceeding).[730]

7.427. There are some important differences between original and compliance proceedings. These differences were explained by the Appellate Body in *US – Softwood Lumber IV (Article 21.5 – Canada*):

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[725] In Section 7.2.2, we rule that the JCATI measure is outside the scope of this proceeding.

[726] The United States does not object to the European Union bringing claims under Articles 3.1(a), 3.1(b), 3.2 of the SCM Agreement or Article III:4 of the GATT 1994 in relation to measures in category (d) above on the basis that it should properly have brought these claims against these measures in the original proceeding. However, it does allege that certain of these measures are not within the Panel's terms of reference or are otherwise outside the scope of this proceeding. The Panel has ruled that the Phase II South Carolina measures are outside the Panel's terms of reference (see Section 7.5.2) and that the JCATI measure is outside the scope of this proceeding (see Section 7.2.2).

[727] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil*), para. 211.

[728] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), para. 431.

[729] Appellate Body Report, *US – Zeroing (EC) (Article 21.5 – EC*), paras. 432-435.

[730] See Appellate Body Report, *EC – Bed Linen (Article 21.5 – India*), para. 86:

> Moreover, we do not see why that part of the redetermination that merely incorporates elements of the original determination on "other factors" would constitute an inseparable element of a measure taken to comply with the DSB rulings in the original dispute. Indeed, the investigating authorities of the European Communities were able to treat this element separately. Therefore, we do not agree with India that the redetermination can only be considered "as a whole new measure".

(emphasis added)

> First, the composition of an Article 21.5 panel is, in principle, already determined – wherever possible it is the original panel. These individuals will be familiar with the contours of the dispute, and the experience gained from the original proceedings should enable them to deal more efficiently with matters arising in an Article 21.5 proceeding "against the background of the original proceedings". Secondly, the time-frames are shorter – an Article 21.5 panel has, in principle, 90 days in which to issue its report, as compared to the six to nine months afforded original panels. Thirdly, there are some limits on the claims that can be raised in Article 21.5 proceedings.[731]

7.428. The Appellate Body continued:

> Taken together, these observations underscore the balance that Article 21.5 strikes between competing considerations. On the one hand, it seeks to promote the prompt resolution of disputes, to avoid a complaining member having to initiate dispute settlement proceedings afresh when an original measure found to be inconsistent has not been brought into conformity with the recommendations and rulings of the DSB, and to make efficient use of the original panel and its relevant experience. On the other hand, the applicable time-limits are shorter than those in original proceedings, and there are limitations on the types of claims that may be raised in Article 21.5 proceedings. This balance should be borne in mind in interpreting Article 21.5 and, in particular, in determining the measures that may be evaluated in proceedings pursuant to that provision.[732]

7.429. As to the limitations on claims that can be raised in a compliance proceeding, we begin from the proposition that "ordinarily" a complaining party is not allowed "to raise claims in an Article 21.5 proceeding that it could have pursued in the original proceedings, but did not".[733] We acknowledge, on the other hand, that a complaining party may bring a new claim challenging a *new measure*, which is *different from* the measure at issue in the original proceeding, or a new component of a measure taken to comply that was not part of the original measure.[734]

7.430. In resolving whether the European Union can bring claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994, in respect of measures against which it had not made such claims in the original proceeding, we bear in mind the need to strike a balance between prompt resolution of the dispute from the perspective of the complaining party and the due process concerns that would arise in relation to the responding party if a complaining party were permitted to raise in compliance proceedings claims which, as a legal and practical matter, could have been raised and pursued in the original dispute.[735]

7.431. As is evident from our consideration of other preliminary objections made by the United States, we think it is reasonable that the European Union in this compliance proceeding should be permitted to pursue its claims against original measures that were not definitively resolved on the merits in the original proceeding in the interests of fairly, promptly, and efficiently resolving the dispute between the parties.[736] These considerations have also affected the way in which we have applied the close nexus test for purposes of determining the measures that are within the scope of this compliance proceeding.[737] However, we are equally cognizant of the fact that there *are* limits to the scope of compliance proceedings. The European Communities' panel request in the original proceeding did not include claims under Articles 3.1(a) and 3.2 of the SCM Agreement (other than with respect to the Washington State tax measures enacted under HB 2294 and the FSC/ETI measures), or under Article 3.1(b) and 3.2 of the SCM Agreement, and the

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[731] Appellate Body Report, *US – Softwood Lumber IV (Article 21.5 – Canada)*, para. 71. (fns omitted)
[732] Appellate Body Report, *US – Softwood Lumber IV (Article 21.5 – Canada)*, para. 72.
[733] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 211.
[734] Appellate Body Reports, *Canada – Aircraft (Article 21.5 – Brazil)*, para. 41; *EC – Bed Linen (Article 21.5 – India)*, paras. 88 and 89; and *US – Softwood Lumber IV (Article 21.5 – Canada)*, para. 71 and fn 110.
[735] See Panel Report, *EC – Bed Linen (Article 21.5 – India)*, para. 6.43 and the reference therein to Appellate Body Report, *US – FSC*, para. 166: "{t}he procedural rules of WTO dispute settlement are designed to promote, not the development of litigation techniques, but simply the fair, prompt and effective resolution of trade disputes."
[736] See Sections 7.2.1 and 7.3.2.
[737] See Sections 7.2.2, 7.4, and 7.5.1.

European Communities in its submissions to the original panel elected not to pursue the Article III:4 GATT claims it had raised. In this light, we do not consider that the Panel should consider those claims against those original measures for the first time in this compliance proceeding. To do so would, in our view, amount to an impermissible expansion of the scope of the dispute beyond that defined by the original panel request, and the original proceeding as actually pursued by the complaining party.

7.432. We therefore grant the United States' request in relation to the claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994 in respect of original measures that have remained unchanged since the original proceeding, i.e. those in category (a) of paragraph 7.424 above (other than the claims under Article 3.1(a) of the SCM Agreement concerning the Washington State B&O tax rate reduction and the Washington State sales and use tax exemptions for computer software, hardware, and peripherals, which are the subject of a separate objection that we have addressed in Section 7.6.2.1.2 of this Report, and the FSC/ETI measures).

7.433. The question that next arises is whether we should also grant the United States' request in respect of original measures that have been amended since the original proceeding, i.e. those in categories (b) and (c) of paragraph 7.424 above.

7.434. As regards the *original measures that have otherwise been amended since the original proceeding*, it appears to us, based on the nature of those amendments, that if the European Union were permitted to bring claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994 at the compliance stage, when it had failed to challenge those measures under the relevant provisions of the WTO Agreements in the original proceeding, it would be impermissibly expanding the scope of the dispute beyond that defined by its panel request in the original proceeding. We therefore grant the United States' request in relation to these measures (other than the claims under Article 3.1(a) of the SCM Agreement concerning the Washington State B&O tax credits for aerospace preproduction/aerospace product development, and the Washington State B&O tax credit for property taxes, which are the subject of a separate objection that we have addressed in Section 7.6.2.1.2 of this Report).

7.435. As regards those *original measures that were amended in order to comply with the DSB recommendations and rulings*, namely, the pre-2007 NASA procurement contracts and DOD assistance instruments, which were amended by the respective Boeing Patent Licence Agreements, we see nothing in the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, or under Article III:4 of the GATT 1994, to indicate that the claims concern new components of these declared measures taken to comply which were not part of the original measures. In other words, the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III:4 of the GATT 1994 in respect of the pre-2007 NASA procurement contracts and DOD assistance instruments, as amended by the respective Boeing Patent Licence Agreements, are claims that it could have raised in relation to those measures in the original proceeding. We therefore see the situation before us as different from that in *Canada – Aircraft (Article 21.5 – Brazil*), where Canada had implemented the recommendation of the DSB by adopting a "new and different" measure.[738] We therefore grant the United States' request in relation to this category of original measure.

7.436. **We therefore conclude that the European Union is precluded from making claims under 3.1(b) and 3.2 of the SCM Agreement, and under Article III:4 of the GATT in respect of the following measures**:

a. the Washington State B&O tax rate reduction;

b. the Washington State sales and use tax exemptions for computer software, hardware, and peripherals;

[738] Appellate Body Reports, *Canada – Aircraft (Article 21.5 – Brazil*), para. 36; and *EC – Bed Linen (Article 21.5 – India*) para. 88.

c. the Washington State B&O tax credits for aerospace preproduction/aerospace product development[739];

d. the Washington State B&O tax credit for property taxes[740]; and

e. the FSC/ETI measures.

7.437. **We further conclude that the European Union is precluded from making claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994 in respect of the following measures**:

a. the City of Everett B&O tax rate reduction, the tax abatements related to the City of Wichita IRBs, and the pre-2007 NASA Space Act Agreements and DOD procurement contracts; and

b. the pre-2007 NASA procurement contracts and DOD assistance instruments at issue in the original proceeding, which were amended by the respective Boeing Patent Licence Agreements.

7.438. For the sake of completeness, we note that this ruling means that in this compliance proceeding, the European Union may validly make claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994 in respect of the South Carolina measures that are otherwise within the Panel's terms of reference or otherwise within the scope of this proceeding, the FAA aeronautics R&D measure, and the post-2006 NASA and DOD aeronautics R&D measures, none of which were measures challenged in the original proceeding. The European Union may also validly make claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the FSC/ETI measures.

7.7 Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952

7.439. This Section contains the ruling "Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952", which was issued to the parties on 18 September 2014. The Panel has made changes to the formatting to accommodate its inclusion in this Report. The substance of the ruling is identical to that issued to the parties.

7.7.1 Introduction

7.440. As foreshadowed in our communication of 27 May 2014, we hereby issue the reasons underlying our decision to decline the European Union's request for leave to file an additional submission detailing the legal ramifications of Washington State Legislature Substitute Senate Bill 5952 (SSB 5952).[741]

7.441. Our decision whether to grant leave turns, in the first instance, on whether the measures in question are within this Panel's terms of reference. If they are not, there is no basis for us to consider further submissions from the parties on the implications of SSB 5952 and it is proper to decline the European Union's request. We have concluded that the Washington State tax measures, as amended by SSB 5952, are not within the Panel's terms of reference.

7.442. As we explain in greater detail in these reasons, we understand the requirements of Article 6.2 of the DSU to be such that the measures included in a panel's terms of reference will ordinarily be measures that are in existence at the time of the establishment of the panel. There are, however, particular, limited circumstances in which measures coming into existence subsequent to a panel request are within a panel's terms of reference. Where a panel request is sufficiently broad to cover amendments and modifications to explicitly identified measures, new measures coming into existence after the date of the panel request will be within the panel's terms

[739] As amended by HB 2466 and by SSB 6828, respectively.
[740] As amended by HB 2466 and by SSB 6828, respectively.
[741] Engrossed Substitute Senate Bill 5952, chapter 2, Laws of 2013, 63rd Leg., 3rd Spec. Sess. (Wash. 2013), appendix to the European Union's letter to the Panel, dated 4 March 2014 (hereafter SSB 5952).

of reference only to the extent that they amend or modify explicitly identified measures without changing their essence, in light of the claims made by the complaining party. We consider that the amendments effected by SSB 5952 change the nature of the Washington State measures that will operate from 1 July 2024 in a significant respect in light of the claims made by the European Union. We therefore do not consider that, in the context of the specific claims made in this dispute, the Washington State tax measures can be said to remain essentially unchanged following the enactment of SSB 5952. Moreover, we do not regard the inclusion of the Washington State tax measures as amended by SSB 5952 within the Panel's terms of reference as necessary for the Panel to assess whether there has been compliance, or otherwise consider that the exclusion of the amendments to the Washington State tax measures effected by SSB 5952 from this proceeding will frustrate the function of this compliance Panel.

7.443. In the following sections of these reasons, we first summarize the background to the European Union's request for leave to file a further submission and the basis on which the Panel has reviewed and considered the arguments and factual material submitted by the European Union in support of its request. We then provide an overview of the Washington State tax measures already at issue in this proceeding, as well as an explanation of SSB 5952 and of how, according to the European Union, SSB 5952 affects the nature of the claims made by the European Union in respect of those measures in this proceeding. We then summarize the arguments presented by the parties as to whether the Washington State tax measures, as amended by SSB 5952, are within our terms of reference before setting forth our evaluation of this issue.

7.7.2 Background to the European Union's request

7.444. By letter dated 4 March 2014, the European Union informed the Panel that the Washington State Legislature had recently passed legislation amending "the 2003 legislation subject to findings and recommendations in the original proceedings".[742] The European Union asserted that these "additional measures taken to comply by the United States" have "dramatically increased the level of US non-compliance with its WTO obligations, including with the recommendations and rulings of the DSB".[743]

7.445. The European Union submitted that:

> {A}s part of its effort to induce Boeing to manufacture components locally and use those components in assembly of the 777X in Washington State, the State legislature recently amended the 2003 legislation subject to findings and recommendations in the original proceedings, and significantly extended, in time and value, a string of powerful tax incentives for Boeing.[744]

7.446. Moreover, according to the European Union:

> {T}he extension of these subsidies was conditioned, by law, on a decision by Boeing to manufacture components for the 777X in Washington State, and to use those components in the assembly of the aircraft in Washington State. Following adoption by the State Legislature of the amendments to the 2003 subsidy package in November 2013, Boeing took the decision to meet these conditions in January 2014, and finally announced, on 18 February 2014, that it would locate its new 777X composite wing centre in Everett, Washington.[745]

7.447. The European Union alleges that, as a result of conditions established by these amendments, the Washington State tax measures: (a) constitute prohibited subsidies contingent upon the use of domestic over imported goods, in violation of Article 3.1(b) of the SCM Agreement; and (b) are inconsistent with the national treatment obligation in Article III:4 of the GATT 1994 "in a manner that reiterates and significantly develops the violations of these same provisions" that the European Union has previously raised. The European Union additionally alleges

[742] European Union's letter to the Panel, dated 4 March 2014, para. 1.
[743] European Union's letter to the Panel, dated 4 March 2014, para. 1.
[744] European Union's letter to the Panel, dated 4 March 2014, para. 1.
[745] European Union's letter to the Panel, dated 4 March 2014, para. 2. (fn omitted)

that the extension of the Washington State tax measures strengthens the causal link between the U.S. subsidies and the 777X-, 787- and 737 MAX-related adverse effects.[746]

7.448. The European Union therefore requested leave from the Panel to file an additional submission detailing "the legal ramifications of the 2013 amendments to the Washington State measure".[747]

7.449. In support of its request for leave to file a further submission, the European Union argues that its claims against the Washington State tax measures, as amended by SSB 5952, properly fall within the terms of reference and jurisdiction of this compliance proceeding.[748] According to the European Union, each of the Washington State tax measures, as amended by SSB 5952, is the very same measure and thus remains within the scope of the proceeding.[749] The remainder of the European Union's letter of 4 March 2014 contains a "description of the Washington State measures" and an "overview" of the arguments the European Union would offer in support of its legal claims should the Panel grant its request.

7.450. By a communication dated 11 March 2014, the Panel requested the United States to respond to the European Union's request, addressing the question of whether, and the basis on which, the Panel should proceed to examine in this compliance proceeding the "additional measures taken to comply by the United States" using the phrase that had been used by the European Union to describe SSB 5952 in the first sentence of its request.[750]

7.451. Following an exchange of views on this issue by the United States in a letter dated 21 March 2014, a response by the European Union in a letter dated 31 March 2014, and comments on that response by the United States in a letter dated 9 April 2014, the Panel on 27 May 2014 indicated to the parties that it had decided to decline the European Union's request and would issue the reasons underlying this decision in due course.[751]

7.7.3 The Panel's consideration of the argument and factual material provided in the European Union's request of 4 March 2014

7.452. At the outset, we wish to clarify the basis on which we have considered the argumentation and factual material submitted by the European Union in support of its request for leave, in light of an objection made by the United States.

7.453. As part of its response to the European Union's request for leave, the United States objects to what it considers to be the European Union's "unsolicited submission of new factual evidence and supplemental argumentation" in the European Union's letter of 4 March 2014, which the United States submits is contrary to paragraph 15 of the Panel's Working Procedures.[752]

7.454. According to the United States, the European Union's letter of 4 March 2014 purports to submit a "new exhibit" in the annex to its letter (this being the SSB 5952 legislation) and other allegedly relevant facts cited in its letter of 4 March 2014, well after its first written submission or the time for rebuttals or answers to questions.[753] The United States considers that the European Union has failed to show good cause for the Panel to allow the submission of such facts.[754] The United States argues that, to the extent that any factual information related to the SSB 5952 legislation is relevant to the European Union's existing claims, and relevant to the Panel's questions, it could have submitted the legislation when submitting its responses to the

[746] European Union's letter to the Panel, dated 4 March 2014, para. 1.
[747] European Union's letter to the Panel, dated 4 March 2014, para. 2.
[748] European Union's letter to the Panel, dated 4 March 2014, para. 18.
[749] European Union's letter to the Panel, dated 4 March 2014, para. 18. See also European Union's letter to the Panel, dated 31 March 2014, para. 7.
[750] Communication from the Panel, dated 11 March 2014.
[751] Communication from the Panel, dated 27 May 2014. By letter dated 25 July 2014, the European Union referred to the 27 May 2014 Communication from the Panel and requested the Panel to issue the reasons underlying its decision to decline the European Union's request for leave to file the additional submission concerning the matters raised in the European Union's request of 4 March 2014 as soon as possible. (European Union's letter to the Panel, dated 25 July 2014).
[752] United States' letters to the Panel, dated 21 March 2014, para. 8, and dated 9 April 2014, para. 16.
[753] United States' letter to the Panel, dated 21 March 2014, para. 8.
[754] United States' letter to the Panel, dated 21 March 2014, para. 8.

Panel's first set of questions on 5 December 2013, or when commenting on the United States' responses, to the extent relevant, on 19 December 2013.[755]

7.455. While the United States acknowledges that requesting leave to file a new submission is not, in and of itself, inconsistent with the Panel's Working Procedures, it objects to the "pages and pages of new argumentation and new evidence that the EU grafted onto its request", which it considers are not permitted by the Working Procedures.[756] According to the United States, the "right accorded under those procedures to ask for leave to provide additional information does not imply a right to provide information and arguments in the effective form of an additional submission and then ask for leave".[757] The United States alleges that European Union's request is a "thinly veiled attempt to supplement legal claims that it has thus far failed to articulate coherently" in its submissions.[758] The United States thus requests the Panel to reject the European Union's "unsolicited submission of new factual evidence and supplemental argument", to disregard the European Union's "submission" and to "clarify that the exhibit to that submission will not be considered as part of this proceeding".[759]

7.456. The European Union disagrees that the submission of additional evidence and arguments with its request of 4 March 2014 contravenes the Panel's Working Procedures, and that the European Union could have (and should have) submitted any additional evidence and arguments earlier in this proceeding.[760] The European Union considers that, in seeking leave from the Panel to file an additional submission, including factual evidence, and explaining the reasons for seeking leave, it has demonstrated "good cause" and has fully complied with the Panel's Working Procedures.[761]

7.457. Moreover, the European Union rejects the suggestion that it could have raised the issue of the impact of SSB 5952 on its claims regarding the Washington State tax measures in its responses to the Panel's questions or comments on the United States' responses to the Panel's questions in December 2013. While the European Union did refer to SSB 5952 in one of its answers to the Panel's questions, the legislation did not take effect until February 2014, and until then, it was not clear that the Washington State tax measures would actually be amended and extended.[762]

7.458. Paragraph 15 of the Panel's Working Procedures provides:

> Parties shall submit all factual evidence to the Panel no later than their first written submissions, other than evidence necessary for purposes of rebuttals and answers to questions. Exceptions to this procedure may be granted upon a showing of good cause. In such a case, the other party shall be accorded a period of time for comment on the newly submitted evidence, as the Panel deems appropriate.

7.459. As noted earlier, in support of its request for leave, the European Union submitted as an annex to its letter of 4 March 2014 the text of SSB 5952, as signed into law on 11 November 2013. It also included a number of footnote references to materials not previously submitted as exhibits in this proceeding in support of various assertions it makes in its request for leave.[763]

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[755] United States' letter to the Panel, dated 21 March 2014, para. 9. The United States notes that the European Union did refer to the SSB 5952 legislation in response to Panel question No. 8 but failed to present the Panel with any of the additional information set forth in the European Union's letter to the Panel, dated 4 March 2014.

[756] United States' letter to the Panel, dated 9 April 2014, para. 16.

[757] United States' letter to the Panel, dated 9 April 2014, para. 16.

[758] United States' letters to the Panel, dated 21 March 2014, paras. 10 and 11, and dated 9 April 2014, para. 17.

[759] United States' letters to the Panel, dated 21 March 2014, paras. 8 and 11, and dated 9 April 2014, para. 17.

[760] European Union's letter to the Panel, dated 31 March 2014, para. 25.

[761] European Union's letter to the Panel, dated 31 March 2014, para. 26.

[762] European Union's letter to the Panel, dated 31 March 2014, para. 27.

[763] These footnote references include matters such as the date on which SSB 5952 was signed into law and entered into effect, Boeing's announcement to locate its 777X composite wing centre in Everett, Washington, its estimates of the value of the extension of the Washington State tax incentives, alternative

7.460. This material was submitted by the European Union in support of its request for leave to file a further submission concerning developments subsequent to the normal deadline for submitting factual information provided in the Working Procedures. To the extent that factual information submitted for this limited and specific purpose constitutes "factual evidence" in this proceeding, within the meaning of paragraph 15 of the Working Procedures, we consider there would nevertheless be "good cause" for us to consider it for such a purpose in the particular situation before us. Similarly, we do not consider that the argumentation made in the European Union's letter of 4 March 2014 goes to the merits of the claims before us. Rather, it relates to matters the European Union considers relevant to our consideration of its request for leave; namely, the arguments it would make in relation to claims concerning the Washington State tax measures as amended by SSB 5952 if leave were granted. In short, the purpose of the European Union's request, and the material submitted in support of that request, is to obtain the Panel's leave, in accordance with paragraph 15 of the Working Procedures, to submit additional arguments and evidence at some point in the future.[764]

7.461. We have reviewed the European Union's request for leave to file an additional submission on the basis of the factual information it has provided in support of that request, including its explanations of the arguments it would seek to make in any subsequent submission were the Panel to grant leave. We do not see how we could adequately consider the European Union's request if we did not take this material into account. The United States has not specifically challenged the accuracy or authenticity of the factual information provided by the European Union, or taken issue with the European Union's explanations of the operation of SSB 5952.[765] While we have ultimately decided to decline the European Union's request for leave, owing to our conclusion that the Washington State tax measures as amended by SSB 5952 are outside the Panel's terms of reference, we have done so after fully considering the factual material submitted by the European Union in its letter of 4 March 2014, as well as the arguments of the parties in subsequent exchanges in March and April of 2014. We consider this to be entirely proper and consistent with our Working Procedures.

7.7.4 The Washington State tax measures challenged by the European Union in this proceeding

7.462. The European Union's claims in this proceeding include claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, Article III:4 of the GATT 1994 and Articles 5(c) and 6.3 of the SCM Agreement, against certain tax measures in the Revised Code of Washington that were originally enacted by the State of Washington in 2003 pursuant to HB 2294. These Washington State tax measures are as follows:

a. Washington State B&O tax rate reduction for manufacturers of commercial aircraft[766];

b. Washington State B&O tax credits for preproduction/aerospace product development[767];

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locations that Boeing was considering for the manufacture of the composite wings for the 777X, a recent significant order for the Boeing 777-9X, estimates of development costs for the 777X and an argument made by the United States in another dispute concerning large civil aircraft. (See European Union's letter to the Panel, dated 4 March 2014, fns 2, 5, 8, 13, 19, 20, 29, 30, 42, 46, and 58).

[764] We do not consider that the European Union can be faulted for failing to submit factual information concerning SSB 5952 in its responses to the Panel's questions, or in its comments on the United States' responses, as the contingency on which the legislation was expressed to enter into effect had not then occurred.

[765] We note that the United States has indicated that, should the Panel "accept the EU's submission March 4 and/or grant the EU's request to file a second additional submission", the United States requests sufficient opportunities to respond to the "numerous procedural, terms of reference, factual and substantive legal issues raised by the EU's submission(s)". (United States' letter to the Panel, dated 21 March 2014, para. 11). However, had there been any material factual inaccuracies in the material submitted by the European Union in relation to the enactment and effectiveness or operation of SSB 5952, the United States should properly have alerted the Panel to such inaccuracies in its letters of 21 March 2014 and 9 April 2014.

[766] Codified at Revised Code of Washington (RCW) 82.04.260(1). See European Union's request for the establishment of a panel, para. 17; and first written submission, para. 447.

[767] Codified at RCW 82.04.4461. See European Union's request for the establishment of a panel, para. 17; and first written submission, para. 461. This B&O tax credit for preproduction development was amended through Section 7 of State Substitute Bill 6828 (SSB 6828) to expand its application to all "aerospace product development", effective 30 June 2008, rather than just "preproduction development". SSB 6828 also

c. Washington State B&O tax credit for property taxes and for leasehold excise taxes granted pursuant to HB 2466[768]; and

d. Washington State sales and use tax exemptions for computer software, hardware, and peripherals.[769]

7.463. The European Communities had previously challenged the Washington State tax measures enacted through HB 2294 in the original proceeding, other than the B&O tax credit for leasehold excise taxes, which arose pursuant to a subsequent amendment to that legislation.[770] The United States has requested a number of preliminary rulings concerning, *inter alia*, the Washington State tax measures and the European Union's claims regarding those measures. It is not necessary to explain the precise nature of the United States' request for preliminary rulings in these reasons, other than to note that the parties dispute whether any of the Washington State tax measures other than the B&O tax rate reduction are within the scope of this compliance proceeding, and whether the European Union's claims under Article 3.1(b) and 3.2 of the SCM Agreement as well as under Article III:4 of the GATT 1994 concerning all measures, including the Washington State tax measures, are properly before this compliance Panel.

7.464. As the original panel explained, the Washington State Legislature passed HB 2294 in 2003. The legislation, which implemented a number of amendments to the Revised Code of Washington, was expressed to relate to "retaining and attracting the aerospace industry to Washington State" and to include "comprehensive tax incentives" directed at achieving this aim.[771] HB 2294 entered into effect:

> {O}n the first day of the month in which the governor and a manufacturer of commercial airplanes sign a memorandum of agreement regarding an affirmative final decision to site a significant commercial airplane final assembly facility in Washington state.[772]

7.465. A "significant commercial airplane final assembly facility" was defined in HB 2294 as "a location with the capacity to produce at least thirty-six super-efficient airplanes a year". A "super-efficient airplane" was defined as a "twin aisle airplane that carries between two hundred and three hundred fifty passengers, with a range of more than seven thousand two hundred nautical miles, a cruising speed of approximately mach .85, and that uses fifteen to twenty per cent less fuel than other similar airplanes on the market."[773] Provided that assembly of a super-efficient airplane had begun by 31 December 2007, the Washington State tax measures were to remain in place until 1 July 2024.[774]

7.7.5 SSB 5952 and its implications for the European Union's claims regarding the Washington State tax measures

7.7.5.1 SSB 5952

7.466. SSB 5952 was passed by the Washington State Legislature on 9 November 2013 and signed into law by the Governor on 11 November 2013. The preamble to the Bill describes it as:

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expanded the eligible entities and persons that may claim the credit for expenditures after 30 June 2008 to include non-manufacturing entities. (Substitute Senate Bill 6828, "Aerospace Tax Incentives", Washington Session Laws 365 (2008), (Exhibit EU-434)).

[768] Codified at RCW 82.04.4463. See European Union's request for the establishment of a panel, para. 17; and first written submission, para. 474. The B&O tax credit for leasehold excise taxes measure, while presented in the European Union's first written submission as a measure distinct from the B&O tax credit for property taxes, was enacted under Section 10 of House Bill 2466, 2006 Wash. Sess. Laws 787 (HB 2466) as an amendment to the B&O tax credit on property taxes codified in RCW 82.04.4463. (See European Union's request for the establishment of a panel, para. 17).

[769] Codified at RCW 82.08.975 and 82.12.975. See European Union's request for the establishment of a panel, para. 17; and first written submission, para. 503.

[770] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.42.

[771] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.41.

[772] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.43.

[773] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.44.

[774] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.49 and 7.215.

> AN ACT Relating to incentivizing a long-term commitment to maintain and grow jobs in the aerospace industry in Washington state by extending the expiration date of aerospace tax preferences and expanding the sales and use tax exemption for the construction of new facilities used to manufacture superefficient airplanes to include the construction of new facilities used to manufacture commercial airplanes or the wings or fuselage of commercial airplanes; amending RCW … 82.04.260 … 82.04.4461, 82.04.4463, 82.08.975, 82.12.975 … .

7.467. SSB 5952, *inter alia*, amends the sections of the Revised Code of Washington that reflect the Washington State tax incentives implemented through HB 2294 which are challenged by the European Union in this proceeding. Pursuant to SSB 5952:

a. the expiration date for the Washington State B&O tax rate reduction for manufacturers of commercial aircraft is extended from 1 July 2024 to 1 July 2040[775];

b. the expiration date for the Washington State B&O tax credits for preproduction/aerospace product development is extended from 1 July 2024 to 1 July 2040[776];

c. the expiration date for the Washington State B&O tax credit for property taxes and for leasehold excise taxes granted pursuant to HB 2466 is extended from 1 July 2024 to 1 July 2040[777]; and

d. the expiration date for the Washington State sales and use tax exemptions for computer software, hardware, and peripherals is extended from 1 July 2024 to 1 July 2040.[778]

7.468. Section 2 of SSB 5952 provides that the entire Act takes effect "contingent upon the siting of a significant commercial airplane manufacturing program in the state of Washington" by 30 June 2017.[779] "Siting" means a final decision, made on or after 1 November 2013, by a manufacturer to locate a significant commercial airplane manufacturing program in Washington State.[780] A "significant commercial airplane manufacturing program" is defined as:

> {A}n airplane program in which the following products, including final assembly, will commence manufacture at a new or existing location within Washington state on or after the effective date of this section:
>
> (i) The new model, or any version or variant of an existing model of a commercial airplane; and
>
> (ii) Fuselages and wings of a new model, or any version or variant of an existing model, of a commercial airplane.[781]

7.469. A "new model, or any version or variant of an existing model, of a commercial airplane" means a commercial airplane manufactured with a carbon fiber composite fuselage or carbon fiber composite wings or both.[782]

7.470. The European Union refers to the above condition for the effectiveness of SSB 5952 as the "programme-siting condition" in which the extensions of the tax incentives were made contingent upon Boeing's decision: (a) to locate production of the wings and fuselage for the 777X in Washington State; and (b) to use those wings and fuselages in final assembly of the 777X, also in Washington State. In other words, in order for the Washington State tax incentives to extend

[775] SSB 5952, sections 5(11) and 6(11).
[776] SSB 5952, section 9(8).
[777] SSB 5952, section 10(6).
[778] SSB 5952, sections 11(4) and 12(3).
[779] SSB 5952, section 2(1).
[780] SSB 5952, section 2(2)(d).
[781] SSB 5952, section 2(2)(c).
[782] SSB 5952, section 2(2)(b).

beyond 2024, Boeing was required to commit to use wings and fuselages produced or assembled in Washington State in the final assembly of the 777X in Washington State.[783]

7.471. In addition, sections 5 and 6 of SSB 5952, which concern the B&O tax rate reduction, add the following condition through a new subsection (e)(ii) added to RCW 82.04.260(11):

> With respect to the manufacturing of commercial airplanes or making sales, at retail or wholesale, of commercial airplanes, this subsection (11) does not apply on or after July 1st of the year in which the department makes a determination that any final assembly or wing assembly of any version or variant of a commercial airplane that is the basis of a siting of a significant commercial airplane manufacturing program in the state under section 2 of this act has been sited outside the state of Washington. This subsection (11)(e)(ii) only applies to the manufacturing or sale of commercial airplanes that are the basis of a siting of a significant commercial airplane manufacturing program in the state under section 2 of this act.

7.472. The European Union refers to this condition as the "exclusive-production condition" which applies solely to the availability of the B&O tax rate reduction for revenues in respect of the 777X. Under this condition, the B&O tax rate reduction would not apply to 777X revenues if and when Boeing were to conduct any final assembly or any wing assembly for the 777X outside of Washington State.[784]

7.473. As noted earlier, the European Union claims that each of the measures identified in its panel request, including the Washington State tax measures, is inconsistent with Articles 3.1(b) and 3.2 of the SCM Agreement, Article III:4 of the GATT 1994, and Articles 5(c) and 6.3 of the SCM Agreement. In Sections 7.7.5.2 to 7.7.5.4 below, we summarize the arguments that the European Union makes in support of those claims as they concern the Washington State tax measures, as well as the arguments that the European Union has foreshadowed it would make in relation to the Washington State tax measures as amended by SSB 5952, if leave were granted to file a submission regarding the implications of SSB 5952.

7.7.5.2 The European Union's claims under Articles 3.1(b) and 3.2 of the SCM Agreement with respect to the Washington State tax measures in its written submissions and as foreshadowed in its 4 March 2014 letter, as a result of SSB 5952

7.474. With respect to its claims under Article 3.1(b) and 3.2 of the SCM Agreement, the European Union alleges in its submissions, based on a series of extracts from documents relating to the various measures:

a. that Boeing is to produce certain goods in the United States, which are thus goods of US origin, which are destined to be used in the manufacture of Boeing LCA to the exclusion of imported goods;

b. that Boeing is to maintain certain employment levels in the United States which far exceed anything that would be necessary to produce LCA without any material local value added, and therefore necessarily imply the use of some U.S. domestic goods;

c. that Boeing is to locate substantial development or production activities in the United States that it would be implausible to carry on solely on the basis that all materials would be imported, and thus which necessarily imply the use of some U.S. domestic goods;

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[783] European Union's letter to the Panel, dated 4 March 2014, para. 12. The European Union asserts that Boeing announced its decision to manufacture the fuselage and large composite wing for the 777X in Washington State on 4 January 2014, and because this occurrence satisfied the programme-siting condition, SSB 5952 became effective as of 8 February 2014. (European Union's letter to the Panel, dated 4 March 2014, para. 13 and fns 19 and 20).

[784] European Union's letter to the Panel, dated 4 March 2014, paras. 14-17. According to the European Union, in contrast to the "programme-siting condition" which affects the availability of the Washington State tax measures only after 2024, the "exclusive-production condition" affects the availability of the B&O tax rate reduction for 777X-related revenue realized both before and after 2024.

d. that statements attributable to the United States or Boeing refer expressly to the use of U.S. domestic goods or labour, or a proxy thereof, and are in nature both of encouragement or direction going forward, and at the same time, reward for past performance. Taken as a whole, these frequently reiterated statements have telegraphed a clear signal to Boeing that, should it favour the use of U.S. domestic goods and labour, it will be rewarded through the further granting or maintaining of subsidies, and at the same time, a clear signal back to the United States government that Boeing will continue to favour local goods and labour so long as the United States keeps granting or maintaining subsidies.[785]

7.475. According to the European Union, "through this system of subsidies, the United States has conditioned Boeing's behaviour so as to induce or incentivise the use of domestic over imported goods."[786] These arguments and evidence are applicable to all of the measures challenged in the proceeding, including the Washington State tax measures.

7.476. In its letter of 4 March 2014, the European Union foreshadows that it would, if granted leave to file a further submission, argue that as a result of the "programme-siting condition" and the "exclusive-production condition" contained in SSB 5952, the Washington State tax measures as amended by SSB 5952, constitute prohibited subsidies contingent on the use of domestic over imported goods, within the meaning of Article 3.1(b) of the SCM Agreement.[787]

7.477. More specifically, the European Union would argue that, pursuant to the "programme-siting condition" in Section 2 of SSB 5952, the Washington State tax incentives received by Boeing *after 2024* are conditional on the establishment of a new commercial aircraft manufacturing programme that assembles an aircraft using goods (i.e. fuselages and wings) produced in the United States (i.e. Washington State). The Washington State tax incentives would not have been extended in duration to 2040 had Boeing decided to "use", in the assembly of the 777X, wings and fuselages that were imported.[788] In addition, the European Union would argue that, pursuant to the "exclusive-production condition", the B&O tax rate reduction for the 777X is conditional upon Boeing's use of wings exclusively produced in the United States (i.e. Washington State). Under this condition, Boeing will benefit from the B&O tax rate reduction for the 777X only if it "uses" wings assembled exclusively in Washington State for the 777X or any variant thereof.[789]

7.7.5.3 The European Union's claims under Article III:4 of the GATT 1994 with respect to the Washington State tax measures in its written submissions and as foreshadowed in its 4 March 2014 letter, as a result of SSB 5952

7.478. With respect to its claims under Article III:4 of the GATT 1994, the European Union alleges in its submissions that:

a. the laws, regulations and requirements at issue are the "measures and subsidies", including the Washington State tax measures;

b. the "like products" of U.S. origin are parts and materials capable of being used in the production of Boeing LCA;

c. the measures at issue affect the internal sale, offering for sale, purchase, transportation, distribution or use of the imported product and the like U.S. product, effectively favouring the like U.S. product.[790]

7.479. The European Union argues that the United States is granting or maintaining subsidies to Boeing, and that Boeing is to: produce goods of U.S. domestic origin destined to be used in the manufacture of Boeing LCA to the exclusion of imported goods; maintain employment levels in the

[785] European Union's first written submission, paras. 769-773; second written submission, paras. 840-850; and Illustrative statements relating to *de facto* contingency on the use of domestic over imported goods, (Exhibit EU-583).
[786] European Union's first written submission, para. 774.
[787] European Union's letter to the Panel, dated 4 March 2014, para. 19.
[788] European Union's letter to the Panel, dated 4 March 2014, para. 22.
[789] European Union's letter to the Panel, dated 4 March 2014, para. 23.
[790] European Union's first written submission, paras. 784-787.

United States that cannot be sustained without the use of U.S. domestic products or materials; and locate substantial development and production activities in the United States (which necessarily implies the use of U.S. domestic products or materials). The United States favours the use of U.S. domestic products or materials and labour, and conditions Boeing's behaviour by encouraging and directing Boeing to favour U.S. domestic goods and labour, rewarding Boeing when it complies. The European Union concludes by arguing that, in light of all of the surrounding facts and circumstances, the measures at issue are applied so as to afford protection to domestic production of the U.S. like product and are thus inconsistent with Article III:4 of the GATT 1994.[791]

7.480. In its letter of 4 March 2014, the European Union foreshadows that it would, if granted leave to file a further submission, argue that the imported and domestic "like products" for purposes of the Article III:4 analysis are wings and fuselages in the case of the "programme-siting condition", and wings with respect to the "exclusive-production condition". Each of the two conditions in SSB 5952 affects the sale, purchase or use of the imported and domestic LCA components, as each condition, in differing circumstances, is capable of strongly influencing Boeing's choice between imported components and U.S.-produced components for the 777X, insofar as the choice to utilize components produced outside of Washington State "would result in the loss of billions of US dollars in tax incentives to Boeing".[792] Moreover, each of the conditions that SSB 5952 attaches to the Washington State tax measures "radically changes the conditions of competition between domestic and imported components for the 777X (i.e. wings and fuselages) to the detriment of imported components".[793] The European Union concludes by arguing that the availability of the Washington State tax incentives, conditioned on Boeing's use of domestic inputs, provides an advantage to the use of such domestic input products and introduces non-commercial considerations (i.e. the loss of the tax incentives) into Boeing's choice to use domestic or imported wings and fuselages. Therefore, the "conditional tax incentives" accord less favourable treatment to the imported products.[794]

7.7.5.4 The European Union's adverse effects claims with respect to the Washington State tax measures in its written submissions and as foreshadowed in its 4 March 2014 letter, as a result of SSB 5952

7.481. With respect to its adverse effects claims, the European Union argues that the Washington State B&O tax credits for pre-production development are most closely linked to the 737 MAX and 787-10 as well as the 787-8/-9 in earlier years, the Washington State property tax credits for new investment are most closely linked to the 737NG, 737 MAX, and 787 (production sites for which Boeing has recently made the largest investments in land and facilities), the Washington State B&O tax credit for leasehold excise taxes applies with respect to the Dreamlifter Operations Center, used in Boeing's production of the 787 as well as other Boeing facilities, while the Washington State sales and use tax exemptions for computer software, hardware, and peripherals are most closely linked to the 737NG, 737 MAX, and 787.[795] The European Union considers that the relationship between each of these subsidies and the development and production of the 737NG, 737 MAX, and/or 787 family LCA, particularly in light of the competitive conditions in the relevant LCA markets, is evidence of a "genuine" causal link between these subsidies and the pricing of the relevant Boeing LCA.[796] The Washington State B&O tax rate reduction, as a subsidy tied to sales of LCA, has a close link to the production and sale of every Boeing LCA manufactured in Washington State, which includes the 737NG, 787, and soon, the 737 MAX family of LCA.[797] The Washington State B&O tax rate reduction is said to impact Boeing's LCA pricing in a manner that constitutes a genuine and substantial cause of adverse effects.[798]

7.482. In addition, the European Union in its submissions argues that the imminent launch of the 777X, which benefits from the advanced technologies enabled by the aeronautics R&D subsidies and which is very likely to be offered at aggressive prices in competitive campaigns against the

[791] European Union's first written submission, paras. 787 and 788; second written submission, paras. 859-864.
[792] European Union's letter to the Panel, dated 4 March 2014, para. 31.
[793] European Union's letter to the Panel, dated 4 March 2014, para. 33.
[794] European Union's letter to the Panel, dated 4 March 2014, para. 33.
[795] European Union's first written submission, para. 1160.
[796] European Union's first written submission, para. 1162.
[797] European Union's first written submission, para. 1135.
[798] European Union's first written submission, paras. 1153 and 1154.

A350XWB, causes a threat of significant price suppression[799], as well as a threat of significant lost sales.[800]

7.483. In its letter of 4 March 2014, the European Union foreshadows that it would, if granted leave to file a further submission, argue that the extension of the Washington State tax measures also further strengthens the causal link between the alleged subsidies to Boeing and adverse effects to EU LCA-related interests, including in particular the causal link to 777X-related adverse effects but also for the 787- and 737 MAX-related adverse effects.[801] More specifically, the European Union would argue that its estimates of the amounts of Washington State tax measures to be received by Boeing from 2025 to 2040 is of a sufficiently large magnitude as to provide Boeing with significant pricing flexibility for sales of its 777X, 787, and 737 MAX aircraft.[802]

7.484. In sum, the Washington State tax measures as amended by SSB 5952 would further strengthen the genuine and substantial link that the European Union alleges to exist between the U.S. subsidies to Boeing and present adverse effects.[803] Finally, the European Union expresses the view that the extension of the Washington State tax measures made Boeing's decision to launch the 777X on 17 November 2013 significantly "more likely", as that launch decision and the decision to locate its wing and fuselage production and assembly, as well as its final assembly, in Washington State "unlocked $8.7 billion in subsidies, of which the vast majority is anticipated to go to Boeing".[804]

7.7.5.5 Conclusion

7.485. In sum, we understand that if granted leave to file an additional submission regarding the implications of SSB 5952:

a. The European Union's arguments in support of the claims under Article 3.1(b) of the SCM Agreement in respect of the Washington State tax measures will change from being arguments that certain evidence gives rise to a clear inference that the receipt of the Washington State tax measures, in conjunction with all of the other measures alleged to be subsidies, conditions Boeing's behaviour to use domestic over imported goods; to arguments that the "programme-siting condition" expressly conditions receipt of post-2024 Washington State tax incentives on the use of domestically-produced wings and fuselages in the assembly of the 777X, and the "exclusive-production condition" expressly conditions receipt of the B&O tax rate reduction in respect of 777X revenues on the use of domestically-produced wings assembled exclusively in Washington State.

b. The European Union's arguments in support of the claims under Article III:4 of the GATT 1994 in respect of the Washington State tax measures will change from being arguments that certain evidence gives rise to a clear inference that all of the measures at issue, including the Washington State tax measures, are being applied so as to afford protection to domestic production of the U.S. like products and materials; to arguments that the "programme-siting condition" changes the conditions of competition between domestic and imported wings and fuselages for the 777X in favour of the domestic products, and the "exclusive-production condition" changes the conditions of competition between domestic and imported wings for the 777X in favour of the domestic product. The Washington State tax measures, as amended by SSB 5952, thus provide an advantage to domestic input products by influencing Boeing's choice of domestic compared to imported wings and fuselages in favour of the former, thereby according less favourable treatment to the imported products.

[799] European Union's first written submission, para. 1321.
[800] European Union's first written submission, paras. 1555 and 1566. The European Union also argues in its response to Panel question No. 42 that the launch orders and commitments for the 777X demonstrate that the threat of significant lost sales has now materialized into present significant lost sales. (European Union's response to Panel question No. 42, para. 273).
[801] European Union's letter to the Panel, dated 4 March 2014, paras. 34 and 37.
[802] European Union's letter to the Panel, dated 4 March 2014, paras. 38-42.
[803] European Union's letter to the Panel, dated 4 March 2014, para. 43.
[804] European Union's letter to the Panel, dated 4 March 2014, para. 44.

c. With respect to its arguments pertaining to the effects under Articles 5(c) and 6.3 of the SCM Agreement of the Washington State tax measures, the differences in arguments will relate to the impact of the increased amounts of the subsidies involved (owing to the extension of the Washington State tax measures to 2040) on the causal analysis as well as a new argument that SSB 5952 made Boeing's decision to launch the 777X in November 2013 significantly more likely.

7.486. Based on this understanding, the impact of SSB 5952 on the Washington State tax measures in the context of the European Union's existing arguments concerning the relevant claims appears to us to be significant, particularly in relation to the claims under Article 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994, but also in relation to the adverse effects claims under Articles 5(c) and 6.3 of the SCM Agreement.

7.487. We next turn to the parties' arguments as to whether the Washington State tax measures, as amended by SSB 5952, are within the Panel's terms of reference and our evaluation of that issue.

7.7.6 Whether the Washington State tax measures as amended by SSB 5952 are within the Panel's terms of reference

7.7.6.1 Main arguments of the parties

7.7.6.1.1 United States

7.488. The United States argues that, whether characterized as "additional measures taken to comply" or as "Washington State tax incentives as amended by SSB 5952", the claims in respect of SSB 5952 are not within the Panel's terms of reference.

7.489. First, as "additional measures", the SSB 5952 measures are not within the Panel's terms of reference because SSB 5952 was not identified in the European Union's panel request.[805] The inclusion of the terms "amendments" and "extensions" in the European Union's panel request, coupled with the assertion that SSB 5952 "amends" or "extends" measures that were themselves already identified in the panel request, does not provide a basis for including SSB 5952 with the Panel's terms of reference. To conclude that a new measure is necessarily within a panel's terms of reference provided it can be characterized as an amendment to a measure that is within the terms of reference through the inclusion of the word "amendment" in the panel request, regardless of the timing or nature of the amendment, would enable complaining parties to circumvent the requirements of Article 6.2 of the DSU by including broad "placeholders" in their panel request. This would deny responding parties a full briefing on the issues before the panel and undermine the notice element of a panel request, including as regards potential third parties, who would be prevented from knowing whether the dispute would affect their interests.[806]

7.490. The United States argues that the Appellate Body has cautioned that a measure enacted subsequent to the establishment of a panel only falls within the panel's terms of reference in certain limited circumstances; namely, where the new measure merely amends an original measure and the amendment does not in any way "change the essence" of the original measure.[807] Here, the European Union makes contradictory assertions. On the one hand it argues that the passage of SSB 5952 raises important new matters for the Panel's consideration, particularly through the establishment of the new "program-siting condition" and "exclusive-production condition" which the European Union considers to be inconsistent with Article 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994. On the other hand, it argues at the same time that SSB 5952 is within the Panel's terms of reference because it merely

[805] United States' letter to the Panel, dated 21 March 2014, para. 2.

[806] United States' letter to the Panel, dated 9 April 2014, para. 7. The United States submits that no panel or Appellate Body reports endorse the expansive doctrine advocated by the European Union, according to which a mere reference to "amendments" in the panel request "somehow sweeps all subsequent amendments into a panel's terms of reference, even if they change the essence of the original measure". (United States' letter to the Panel, dated 9 April 2014, para. 10).

[807] United States' letter to the Panel, dated 21 March 2014, para. 4 (referring to Appellate Body Reports *Chile – Price Band System*, para. 137; and *EC – Chicken Cuts*, para. 157). See also United States' letter to the Panel, dated 9 April 2014, para. 7.

amends the Washington State tax measures, without changing their essential character.[808] According to the United States, if the conditions have the implications that the European Union alleges, they cannot leave the Washington State tax measures "essentially unchanged" such that they should be considered within the Panel's terms of reference.[809] Rather, the European Union's arguments raise different claims regarding the tax treatment accorded pursuant to HB 2294 as opposed to the new claims regarding tax treatment allegedly accorded pursuant to SSB 5952.[810] The United States considers that the European Union is in reality seeking to raise new prohibited subsidy and other claims that it did not articulate until March 2014, almost 17 months after its request for the establishment of a panel.[811]

7.491. The United States says that this inherent contradiction in the European Union's position is not addressed by characterizing the European Union's claims as concerning "the continuing flow of Washington State tax incentives".[812] The "continuing flow" of tax incentives cannot be considered in the abstract, divorced from HB 2294, which enacted the tax measures identified in the European Union's panel request and the amendments allegedly embodied in SSB 5952. In any case, it does not obscure the fact that the European Union's own arguments raise different claims regarding the tax treatment accorded under the Washington State tax measures enacted under HB 2294 and tax treatment allegedly accorded under SSB 5952.[813]

7.492. The United States submits that a compliance panel's terms of reference are not open-ended "evolving to capture anything the responding Member does at any point during the panel process".[814] According to the United States, the B&O tax rate reduction enacted under HB 2294 and payments made pursuant to that aspect of HB 2294 are within the Panel's terms of reference, while any modifications to the conditions for receiving subsidies in the future are not.[815] This is an even-handed principle that applies whether the subsequent amendments "increase" or "decrease" the WTO-consistency of a challenged measure. In either case, the subsequent amendment does not change the "matter" before the panel, as set out in the panel request. The United States considers that the systemic and procedural fairness concerns that would arise if the DSU were read to permit compliance panels to examine new measures or modifications during the course of proceedings, which were identified by the United States and the Appellate Body in *US – Zeroing (Japan) (Article 21.5 – Japan*), cannot be brushed aside in this case. The United States' interests in knowing the case alleged against it and presenting a full defence would be prejudiced if the Panel were to allow the European Union to raise claims against the United States under Articles 3.1 and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994, or if the Panel allows the European Union to introduce new claims and measures at this late stage of the dispute, after the European Union has already made its case in chief and the United States has already presented its defences, and after the Panel has already met with the parties.[816]

7.493. Finally, the United States refers to its request for preliminary rulings that the European Union's panel request fails to meet the requirements of Article 6.2 of the DSU with respect to claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Articles III:1, III:4, and III:5 of the GATT 1994 because it fails to provide a brief summary of the

[808] United States' letters to the Panel, dated 21 March 2014, para. 5, and dated 9 April 2014, paras. 4 and 5.

[809] United States' letters to the Panel, dated 21 March 2014, para. 5, and dated 9 April 2014, paras. 4 and 11. The United States considers that the European Union's assertion that the "tax incentives that are the subject of its additional claims are the very same tax incentives" listed in the European Union's panel request suffers from the same contradiction: the European Union cannot make this assertion consistently with an argument that the Washington State tax measures, as amended by SSB 5952, give rise to new legal claims, because in that case, the measures cannot be the same measures as were identified in the European Union's panel request. (United States' letter to the Panel, dated 9 April 2014, para. 5).

[810] United States' letter to the Panel, dated 9 April 2014, para. 6. Moreover, the United States argues that the European Union cannot characterize the new claims as concerning the "continuing flow" of Washington State tax incentives, divorced from HB 2294, which enacted the Washington State tax measures, and amendments to those measures allegedly embodied in SSB 5952.

[811] United States' letter to the Panel, dated 9 April 2014, para. 9.

[812] United States' letter to the Panel, dated 9 April 2014, para. 6 (referring to European Union's letter to the Panel, dated 31 March 2014, paras. 6-8).

[813] United States' letter to the Panel, dated 9 April 2014, para. 6.

[814] United States' letter to the Panel, dated 9 April 2014, para. 9.

[815] United States' letter to the Panel, dated 9 April 2014, para. 9.

[816] United States' letter to the Panel, dated 9 April 2014, para. 15.

complaint sufficient to present the problem clearly.[817] In this regard, it submits that the section of the European Union's panel request discussing the challenged Washington State tax measures does not mention Article 3.1(b) of the SCM Agreement or Article III:4 of the GATT 1994, and accordingly, the European Union's claims under those provisions are not within the panel's terms of reference.[818]

7.7.6.1.2 European Union

7.494. The European Union considers the United States' arguments incorrectly reduce the subject of the European Union's claims to SSB 5952 as a single measure, whereas it is evident from the European Union's request for leave that the measures at issue are the "Washington State tax incentives, as amended by SSB 5952" and not simply SSB 5952.[819]

7.495. Furthermore, the European Union asserts that the measures at issue include "all instances of application of the Washington State tax incentives", irrespective of any amendments to the subsidy programme itself.[820] The European Union's claims demonstrate that it is the "continuing flow of these tax incentives, and the attendant conditions established by SSB 5952" which are subject to the claims under Article 3 of the SCM Agreement, Article III:4 of the GATT 1994 and which contribute to adverse effects.[821] According to the European Union, the United States does not, and cannot, contest that the "continuing flow of Washington State tax incentives" is clearly identified in the European Union's panel request.[822] This being so, there is no basis for the United States to argue that those Washington State tax measures are outside the Panel's terms of reference.[823] As the United States' objection relates only to the amendments to the Washington State law made by SSB 5952 and not the continuing flow of the tax incentives pursuant to that law, the United States has only purported to address one of two alternative reasons why the measures are within the scope of this proceeding.[824]

7.496. In any event, the European Union notes that its panel request explicitly identified the measures at issue as encompassing "any amendments" and "extensions" of the challenged measures it had specifically identified. SSB 5952 merely "amends" or "extends" the Washington State tax measures already at issue in this proceeding.[825] The United States does not explain why listing "amendments" and "extensions" in the European Union's panel request is insufficient to "identify the specific measures" and consequently bring those measures within the Panel's terms of reference.[826] The European Union refers in this regard to statements by the Appellate Body that the text of Article 6.2 of the DSU does not require that a measure be referred to individually in order to be properly identified for purposes of Article 6.2; rather, there may be circumstances in which a party describes a measure in a more generic way, which nonetheless allows the measure to be discerned.[827] According to the European Union, a panel request can identify measures or a category of measures with some breadth while still meeting the requirement of Article 6.2 of the DSU to identify the specific measures at issue. In the present case, the references to "amendments" and "extensions" in the European Union's panel request are broad enough to make it possible to discern that the challenged measures included SSB 5952 and put the United States on notice that the amendments to the Washington State tax measures embodied in SSB 5952 were covered by the European Union's panel request.[828]

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[817] United States' letters to the Panel, dated 21 March 2014, para. 6, and dated 9 April 2014, para. 14 (referring to United States' request for preliminary rulings, dated 13 November 2012, paras. 45-57).
[818] United States' letters to the Panel, dated 21 March 2014, para. 6, and dated 9 April 2014, para. 14.
[819] European Union's letter to the Panel, dated 31 March 2014, para. 6 (referring to European Union's letter to the Panel, dated 4 March 2014, para. 18).
[820] European Union's letter to the Panel, dated 31 March 2014, para. 6.
[821] European Union's letter to the Panel, dated 31 March 2014, para. 6. (emphasis original)
[822] European Union's letter to the Panel, dated 31 March 2014, para. 7 (referring to European Union's request for the establishment of a panel, para. 17; and United States' second written submission, para. 457).
[823] European Union's letter to the Panel, dated 31 March 2014, para. 7.
[824] European Union's letter to the Panel, dated 31 March 2014, para. 8.
[825] European Union's letter to the Panel, dated 4 March 2014, para. 18.
[826] European Union's letter to the Panel, dated 31 March 2014, para. 9.
[827] European Union's letter to the Panel, dated 31 March 2014, para. 9 (referring to Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 116).
[828] European Union's letter to the Panel, dated 31 March 2014, para. 10.

7.497. The European Union also disagrees with the United States that a measure which is amended subsequent to the establishment of a panel cannot fall within the panel's terms of reference unless it remains "essentially unchanged".[829] Article 6.2 of the DSU does not categorically prohibit the inclusion within a panel's terms of reference of measures that come into existence or are completed after the panel request is submitted.[830] The United States has sought to rely on brief quotations from the Appellate Body Reports in *Chile – Price Band System* and *EC – Chicken Cuts* in support of its position. However, these reports to not provide support for such a rule and in fact support the contrary conclusion.[831]

7.498. The European Union argues that, even if there were a rule that a measure which is amended subsequent to the establishment of a panel is outside the panel's terms of reference unless the amendments leave the measure "essentially unchanged", SSB 5952 did not "change the essence" of the Washington State tax measures and thereby "shield" the amended measures from scrutiny by this Panel. In this regard, the European Union disputes that the two new conditions for the extension of the tax measures are the "essence" of the amended measures. Rather, the "essence" of the amended measures continues to be the nature of those measures as tax incentives, the conditions attendant to an outcome being merely ancillary to that outcome.[832]

7.499. Moreover, the United States' position ignores the Appellate Body's clarification that the requirements of Article 6.2 must be adapted to a panel request under Article 21.5, and its caution that the *a priori* exclusion from a compliance panel's terms of reference of measures that were not fully in place at the time of the panel request would frustrate the compliance panel's function because the disagreement as to the existence or consistency with a covered agreement of measures taken to comply could not be fully resolved by the panel.[833] Failure to do so, the European Union argues, would frustrate the compliance panel's function and would hinder the ability to achieve prompt settlement and to secure a positive solution to the dispute as reflected in Articles 3.3 and 3.7 of the DSU.[834]

7.500. As to the United States' argument that the European Union's panel request does not sufficiently connect the challenged measures with the European Union's claims under Articles 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994, the European Union notes that paragraphs 30 and 32 of the European Union's panel request specifically relate those claims to the subsidy measures listed in section I.D of the panel request, which lists all of the Washington State tax measures, as amended and extended by SSB 5952, including their instances of application.[835] The European Union considers that the United States' complaint is not so much that the claims were not precisely linked with the measures, but that the arguments supporting those claims had not been summarized in the panel request. However, Article 6.2 of the DSU does not require a party to set out arguments or evidence in support of its claims in its panel request. Moreover, the United States has not shown that it suffered any prejudice from the alleged shortcomings in the panel request, based on the objective of Article 6.2 of the DSU of providing notice to the responding party regarding the nature of the dispute, in order to satisfy due process concerns.[836]

7.7.6.2 Evaluation

7.501. In this compliance proceeding, the European Union claims that the Washington State tax measures constitute prohibited export subsidies inconsistent with Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and specific subsidies that cause adverse effects, within the meaning of Article 5(c) and 6.3 of the SCM Agreement, as well as measures that are inconsistent with Article III:4 of the GATT 1994. As originally enacted pursuant to HB 2294, and as identified in the European Union's panel request, the Washington State tax measures continue in effect until 1 July 2024.

[829] European Union's letter to the Panel, dated 31 March 2014, para. 11.
[830] European Union's letter to the Panel, dated 31 March 2014, para. 16.
[831] European Union's letter to the Panel, dated 31 March 2014, paras. 11-16.
[832] European Union's letter to the Panel, dated 31 March 2014, para. 11, fn 26.
[833] European Union's letter to the Panel, dated 31 March 2014, para. 17 (referring to Appellate Body Reports, *US – FSC (Article 21.5 – EC II)*, para. 59; and *US – Zeroing (Japan) (Article 21.5 – Japan)*, paras. 109, 122, and 124).
[834] European Union's letter to the Panel, dated 31 March 2014, para. 17.
[835] European Union's letter to the Panel, dated 31 March 2014, para. 19.
[836] European Union's letter to the Panel, dated 31 March 2014, paras. 21-23.

7.502. As explained in Section 7.7.5.1, SSB 5952 alters the future availability of the Washington State tax measures by extending their expiration date from 1 July 2024 to 1 July 2040, subject to a new condition, and imposes a new condition on eligibility for the B&O tax rate reduction in respect of certain revenues that Boeing will recognize in the future. SSB 5952 was enacted on 11 November 2013, more than a year after the European Union's panel request, and several months after the meeting of the Panel.[837] Consequently, SSB 5952 was not explicitly identified by the European Union in its panel request.

7.503. The question before us is whether the Washington State tax measures, as amended by SSB 5952, are within our terms of reference, although SSB 5952 was not explicitly identified in the European Union's panel request, and was neither enacted nor came into effect until over a year after the panel request. In answering this question, we must determine whether the references in the European Union's panel request to "amendments" and "extensions" of the explicitly identified measures sufficiently identify the specific Washington State tax measures, as amended by SSB 5952, for purposes of Article 6.2 of the DSU.

7.504. Article 6.2 of the DSU provides, in relevant part:

> The request for the establishment of a panel shall be made in writing. It shall indicate whether consultations were held, identify the specific measures at issue and provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly.

7.505. A panel request must therefore: (a) identify the specific measures at issue; and (b) provide a brief summary of the legal basis of the complaint sufficient to present the problem clearly. Together, these two elements constitute the "matter referred to the DSB", which forms the basis of a panel's terms of reference under Article 7.1 of the DSU.[838] The panel request thus defines the jurisdiction of the panel, since only the matter(s) raised in the panel request fall within the panel's terms of reference. In addition, the panel request serves the due process objective of notifying the parties and potential third parties of the nature of the dispute and the parameters of the case to which they must begin preparing a response.[839]

7.506. In evaluating whether the European Union's panel request meets the requirements of Article 6.2 of the DSU in relation to the identification of the Washington State tax measures as amended by SSB 5952, we must also take into account that this is a compliance proceeding brought pursuant to Article 21.5 of the DSU. The Appellate Body has stated that, although Article 6.2 is generally applicable to panel requests under Article 21.5 "the requirements of Article 6.2, as they apply to an original panel request, need to be adapted to a panel request under Article 21.5."[840] As the Appellate Body stated in *US – FSC (Article 21.5 – EC II)*, in Article 21.5 proceedings, the "specific measures at issue" are measures "that have a bearing on compliance with the recommendations and rulings of the DSB".[841] This indicates that the "requirements of Article 6.2 of the DSU, as they apply to an Article 21.5 panel request, must be assessed in the light of the recommendations and rulings of the DSB in the original … proceedings that dealt with the same dispute."[842]

7.507. The parties have directed the Panel to several cases in which panels and the Appellate Body have considered that measures not explicitly identified in a panel request, which came into

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[837] The European Union's panel request is dated 12 October 2012. The parties filed their first and second written submissions by August 2013 and the Panel held its meeting with the parties and third parties in October 2013. The parties additionally responded to a first set of Panel questions and commented on each other's responses to those questions by December 2013. According to the European Union, SSB 5952 did not enter into effect until February 2014, owing to the fact that Boeing did not announce its decision to locate the 777X facilities in Washington State until January 2014.

[838] Appellate Body Reports, *Guatemala – Cement I*, para. 72; *US – Carbon Steel*, para. 125; and *US – Continued Zeroing*, para. 160.

[839] Appellate Body Reports, *US – Carbon Steel*, para. 126; *Brazil – Desiccated Coconut*, para. 186; *EC – Bananas III*, para. 142; and *US – Continued Zeroing*, para. 161.

[840] Appellate Body Reports, *US – FSC (Article 21.5 – EC II)*, para. 59; and *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 109.

[841] Appellate Body Report, *US – FSC (Article 21.5 – EC II)*, para. 61.

[842] Appellate Body Report, *US – FSC (Article 21.5 – EC II)*, para. 61. See also Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 109.

existence in whole or in part after the date of the panel request, were nevertheless within the panel's terms of reference. We have reviewed these cases and set forth below our understanding of those issues and the manner in which they were resolved.

7.508. We begin with *Chile – Price Band System*, in which Chile, by enacting Law 19.772, amended the law setting out the methodology for calculating the upper and lower thresholds of the price band system that had been challenged by Argentina.[843] Chile informed the panel of this amendment at the second substantive meeting with the parties. The facts regarding this amendment to Chile's price band system are worth recounting in some detail. Law 19.772 amended the law setting forth the methodology for calculating the upper and lower thresholds for the price band system by adding a paragraph to make explicit that there was a cap on the amount of the total tariff that could be applied under the system at the tariff rate at which Chile was bound in its Schedule. Chile explained to the Appellate Body that Law 19.772 was "merely declaratory in nature" because the total amount of duties that could be applied on products subject to the price band system had been subject to a tariff binding since the Tokyo Round.[844] According to Chile, Law 19.772 did not change this tariff binding, but merely "reinforced" Chile's existing obligations, serving to "reassure" Chile's trading partners that there would be no recurrence of previous breaches of its tariff binding.[845]

7.509. The Appellate Body considered that it was first necessary to identify whether the measure before it on appeal was Chile's price band system as amended by Law 19.722, or Chile's price band system as it existed before the entry into force of Law 19.722.[846] The Appellate Body recalled that Argentina's panel request referred to the measure at issue as the price band system under the relevant laws, "as well as the regulations and complementary provisions and/or amendments". The Appellate Body considered that such amendments included Law 19.722 and that "the broad scope of the Panel request suggests that Argentina intended the request to cover the measure even as amended". The Appellate Body thus concluded that Law 19.772 fell within the panel's terms of reference.[847]

7.510. The Appellate Body then went on to address the issue of the "identity of the measure" in situations where there are subsequent regulatory changes relevant to a measure. In this context, the Appellate Body explained that Law 19.772 "clarified" the legislation that established Chile's price band system, but did not change the price band system into a measure that was different from the price band system that was in force before the amendment.[848] In short, Chile's price band system remained essentially the same after the enactment of Law 19.772, and the measure was not "in its essence" any different because of that amendment. The Appellate Body therefore concluded that the measure before it included Law 19.772 "because that law amends Chile's price band system without *changing its essence*".[849] Moreover, it noted that the participants did not object to the Appellate Body ruling on the price band system as currently in force in Chile; namely, as amended by Law 19.772.[850]

7.511. The Appellate Body referred with approval to the approach taken by the panel in *Argentina – Footwear (EC)* in examining modifications to a safeguard measure during the course of panel

[843] Chile had explained to the Appellate Body that, recognizing that Chile had breached its WTO commitments, it passed Law 19.772 to avoid the possibility of a recurrence of a breach of the tariff binding. (Appellate Body Report, *Chile – Price Band System*, para. 126).

[844] Appellate Body Report, *Chile – Price Band System*, para. 131.

[845] Appellate Body Report, *Chile – Price Band System*, para. 131. Chile had argued before the panel that the amendment "eliminated the measures" that Argentina had challenged because, even if Argentina were correct in respect of its claims that Chile's price band system violated Article II of the GATT 1994, there was a "positive solution" to the dispute through the enactment of legislation assuring that the tariff binding would not be breached in future. (See Appellate Body Report, *Chile – Price Band System*, para. 128 and fn 108 (quoting from Chile's oral statement at the Panel's second meeting with the parties, para. 6)).

[846] Appellate Body Report, *Chile – Price Band System*, para. 127. This issue did not arise because of a challenge by either party to the consideration of the price band system as amended by Law 19.772 as within the panel's terms of reference, but rather, was the result of a question raised by the Appellate Body, of its own motion, as to the identity of the measure on appeal given the lack of clarity in the parties' submissions on that issue and the fact that the panel appeared to have ruled on the price band system as it stood both before and after the amendment by Law 19.772. (See Appellate Body Report, *Chile – Price Band System*, paras. 131-133).

[847] Appellate Body Report, *Chile – Price Band System*, para. 135.

[848] Appellate Body Report, *Chile – Price Band System*, para. 137.

[849] Appellate Body Report, *Chile – Price Band System*, para. 139. (emphasis original)

[850] Appellate Body Report, *Chile – Price Band System*, para. 143.

proceedings on the ground that the modifications simply altered the legal form of the original definitive measure which remained in force in substance and which was the subject of the complaint.[851] It then stated:

> We emphasize that we do not mean to condone a practice of amending measures during dispute settlement proceedings if such changes are made with a view to shielding a measure from scrutiny by a panel or by us. We do not suggest that this occurred in this case. However, generally speaking, the demands of due process are such that a complaining party should not have to adjust its pleadings throughout dispute settlement proceedings in order to deal with a disputed measure as a "moving target". If the terms of reference in a dispute are broad enough to include amendments to a measure – as they are in this case – and if it is necessary to consider an amendment in order to secure a positive solution to a dispute – as it is here – then it is appropriate to consider the measure *as amended* in coming to a decision in a dispute.[852]

7.512. It is not entirely clear whether the Appellate Body considered Law 19.772 to be properly before it on appeal because of the "broad scope" of Argentina's panel request in referring also to "amendments" to the price band system[853], or because Law 19.772 amended the price band system without "changing its essence"[854], and indeed whether these grounds were cumulative or each independent and sufficient bases for the Appellate Body's decision the consider the measure, as amended, to be the measure before it on appeal. The European Union relies on the last sentence of the above quotation from the Appellate Body Report in *Chile – Price Band System*, arguing that similar reasoning applies in this case.[855]

7.513. However, the Appellate Body's subsequent discussions of *Chile – Price Band System* in cases such as *EC – Chicken Cuts* and *US – Zeroing (Japan) (Article 21.5 – Japan*) indicate that the Appellate Body was not suggesting that, simply because a new measure could be said to "amend" or "extend" the operation or application of a measure that is identified in a complainant's panel request, and the panel request specifies that the challenged measures include any "amendments" to or "extensions" of identified measures, the new measure will thereby necessarily fall within a panel's terms of reference. Rather, as the Appellate Body has made clear in subsequent cases, where the measure at issue comes into existence after the date of the panel request, the primary consideration, assuming that the wording of the panel request is "sufficiently broad" so as not to preclude the identification of the new measure, is whether the explicitly identified measure could be said to remain "essentially unchanged" following the enactment of the subsequent measure. Thus, the focus is on the relationship between the original, explicitly identified measure, and the subsequent measure.

7.514. In *EC – Chicken Cuts*, the panel and Appellate Body both concluded that two new measures could not be considered to be identified in the complaining parties' panel requests consistently with Article 6.2 of the DSU.[856] It was undisputed that the two "original" measures, EC Regulation 1223/2002 and EC Decision 2003/97/EC, were within the panel's terms of reference as

[851] Appellate Body Report, *Chile – Price Band System*, para. 138 (referring to Panel Report, *Argentina – Footwear (EC*), para. 8.45). In *Argentina – Footwear (EC*), the panel interpreted the European Communities' panel request as clearly identifying the provisional and definitive safeguard measures (rather than simply the cited resolutions and promulgations in Argentina's Official Journal that imposed the provisional and definitive measures). Because it was the provisional and definitive safeguard measures in their substance, rather than the legal acts in their original or modified legal forms, that were relevant to the panel's terms of reference, the panel concluded that its terms of reference included subsequent resolutions that modified the definitive safeguard and were not explicitly mentioned in the European Communities' panel request. (Panel Report, *Argentina – Footwear (EC*), paras. 8.40-8.46).

[852] Appellate Body Report, *Chile – Price Band System*, para. 144. (emphasis original)

[853] Appellate Body Report, *Chile – Price Band System*, para. 135.

[854] Appellate Body Report, *Chile – Price Band System*, paras. 137-139.

[855] European Union's letter to the Panel, dated 31 March 2014, para. 13.

[856] One of the new measures was published and entered into force after both Brazil and Thailand's respective requests for establishment of a panel. The other new measure (1871/2003) was published on 23 October 2003 and entered into force on the twentieth day following its publication. Brazil's panel request was dated 22 September 2003 and Thailand's 28 October 2003. (Appellate Body Report, *EC – Chicken Cuts*, para. 151 and fn 304).

having been explicitly identified in the complaining parties' panel requests.[857] The question was whether two "subsequent" measures; EC Regulations 1871/2003 and 2344/2003, which had not been explicitly identified, were also within the panel's terms of reference. The panel had concluded that the two subsequent measures did not purport to be "amendments" to the two original measures and that, in contrast to other cases, the panel requests in this proceeding were not sufficiently broad to include the two subsequent measures.[858] The Appellate Body took a different approach to the issue. It began by observing:

> The term "specific measures at issue" in Article 6.2 suggests that, as a *general rule*, the measures included in a panel's terms of reference must be measures that are in existence at the time of the establishment of the panel. However, measures enacted subsequent to the establishment of the panel may, *in certain limited circumstances*, fall within a panel's terms of reference.[859]

7.515. The Appellate Body recalled that it had addressed such a situation in *Chile – Price Band System*, in which it had examined the relationship between the original measure and the subsequent amendment to that measure, finding that the original measure (Chile's price band system) remained "essentially unchanged" following the enactment of the subsequent measure (Law 19.772). The Appellate Body described its decision in *Chile – Price Band System* in the following way:

> Thus, the Appellate Body found that, where an original measure had *merely been amended* by a subsequent measure and the amendment *did not, in any way, change the essence* of the original measure, the measure in its amended form could constitute the "specific measure{} at issue" identified in the panel request.[860]

7.516. Turning to consider the relationship between the two original measures and the two subsequent measures before it, the Appellate Body noted that: (a) the two subsequent measures made no explicit reference to the two original measures, which remained in force; and (b) the two subsequent measures had "legal implications" different from those of the two original measures.[861]

7.517. The Appellate Body was not persuaded that the two subsequent measures could be considered "amendments" to the two original measures in the way that Law 19.772 was considered an "amendment" to Chile's price band system, or that the two sets of measures were "in essence, the same".[862] Moreover, it did not consider that an argument that the two subsequent measures nevertheless had the same effect as the two original measures (i.e. the reclassification of the products at issue) was a sufficient basis for finding the two subsequent measures fell within the panel's terms of reference, when it would undermine the requirement of specificity and the due process objective enshrined in Article 6.2 of the DSU.[863]

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[857] The first of these measures, EC Regulation 1223/2003, specified a certain classification for frozen boneless chicken cuts with a salt content of 1.2 to 1.9%. The second, EC Decision 2003/97/EC, required the withdrawal of binding tariff information (BTIs) providing for a different classification of a product considered to be a similar product, namely, frozen boneless chicken cuts with a salt content of 1.9 to 3%.

[858] Panel Report, *EC – Chicken Cuts*, para. 7.27 (comparing at fn 61, the panel requests in *Chile – Price Band System*, *EC – Bananas III*, *Argentina – Textiles and Apparel*, and *Australia – Salmon*).

[859] Appellate Body Report, *EC – Chicken Cuts*, para. 156. (emphasis added, fn omitted)

[860] Appellate Body Report, *EC – Chicken Cuts*, para. 157. (emphasis added)

[861] More specifically, one of the original measures specified a certain classification for a particular product (i.e. frozen boneless chicken cuts with a salt content of 1.2 to 1.9%), while the other required the withdrawal of BTIs providing for a different classification of a product considered to be a similar product (i.e. frozen boneless chicken cuts with a salt content of 1.9 to 3%). By contrast, the two subsequent measures amended the European Communities' Combined Nomenclature and covered all types of salted meat falling under a particular heading of the Combined Nomenclature. (Appellate Body Report, *EC – Chicken Cuts*, para. 158).

[862] Appellate Body Report, *EC – Chicken Cuts*, para. 159.

[863] The Appellate Body similarly considered that the objective of securing a positive resolution to the dispute reflected in Articles 3.3 and 3.7 of the DSU could not be pursued at the expense of complying with the specific requirements and obligations of Article 6.2. (Appellate Body Report, *EC – Chicken Cuts*, paras. 160 and 161). Subsequently, in *EC – Selected Customs Matters*, the Appellate Body explained the principles it had articulated in *Chile – Price Band System* and *EC – Chicken Cuts* in the following manner. First, it began by recalling from *EC – Chicken Cuts* that the term "specific measures at issue" in Article 6.2 suggests that as a

7.518. In *US – Zeroing (Japan) (Article 21.5 – Japan*), the issue before the panel and the Appellate Body was whether a periodic review of an anti-dumping duty order on imports of ball bearings from Japan that had been initiated prior to commencement of the compliance proceeding, but not completed until the compliance proceeding was underway (Review 9), was within the compliance panel's terms of reference. Japan's panel request had not specifically identified Review 9, although it had identified prior completed periodic reviews of the same anti-dumping duty order (all of which were alleged to have involved the use of zeroing, contrary to the DSB recommendations and rulings in the original proceeding). Japan's panel request also purported to cover any amendments to the identified periodic reviews, and closely connected instructions and notices, as well as "any subsequent closely connected measures".[864] Japan had not referred to or made any claims with respect to Review 9 in its first or second written submissions to the Panel, which had been filed prior to the USDOC's publication of the final results of Review 9.[865]

7.519. Shortly after the USDOC's publication of the final results of Review 9, Japan requested and obtained leave from the panel to file a supplemental submission in which it argued that Review 9 was inconsistent with Articles 2.4 and 9.3 of the Anti-Dumping Agreement and Article VI:2 of the GATT 1994 by virtue of the application of zeroing in that review. The United States objected: (a) that the phrase "subsequent closely connected measures" in Japan's panel request did not cover Review 9; and (b) that in any event, Review 9 was a "future measure" not in existence at the time of the panel request and therefore could not fall within the panel's jurisdiction.[866]

7.520. The Appellate Body rejected the United States' first objection, concluding that *in the particular circumstances before it*, the phrase "subsequent closely connected measures" was not too broad or vague for purposes of Article 6.2 of the DSU. Analysing the text of Japan's panel request, the Appellate Body noted that the term "subsequent closely connected measures" appeared in paragraph 12 of Japan's panel request, which was the sub-section entitled "Periodic Reviews". Paragraph 12 identified five of the 11 periodic reviews that were challenged in the original proceeding plus three periodic reviews that the United States had argued superseded the original reviews. The periodic reviews themselves were listed in an annex to the panel request. The panel request alleged that the United States had used zeroing in each of these periodic reviews, and had omitted to eliminate zeroing with respect to any of them. It also stated that these periodic reviews stemmed from three separate anti-dumping duty orders. In the last line of paragraph 12, Japan stated that the request concerned "any amendments to the eight periodic reviews and the closely connected instructions and notices, as well as *any subsequent closely connected measures*".[867] The Appellate Body considered that the plain meaning of the phrase "subsequent closely connected measures" as it appeared in paragraph 12 of Japan's panel request indicated that the measures being referred to would have to be enacted after the eight periodic reviews identified by Japan and would have to relate to those eight periodic reviews. The eight periodic reviews related to three anti-dumping duty orders that had been identified in Japan's panel request, however two of those anti-dumping duty orders had been revoked by the USDOC at the time of Japan's panel request. Therefore, "any subsequent periodic review could *only* relate to the anti-dumping duty order on ball bearings".[868] For this reason, the Appellate Body disagreed with the United States that the phrase "subsequent closely connected measures" was too broad and vague for purposes of identifying the measure at issue under Article 6.2 of the DSU.

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general rule, the measures included in a panel's terms of reference must be measures that are in existence at the time of the establishment of the panel. It then said:

> This general rule, however, is qualified by at least two exceptions. First, in Chile – Price Band System, the Appellate Body held that a panel has the authority to examine a legal instrument enacted after the establishment of the panel that amends a measure identified in the panel request, provided that the amendment does not change the essence of the identified measure. Secondly, in US – Upland Cotton, the Appellate Body held that panels are allowed to examine a measure "whose legislative basis has expired, but whose effects are alleged to be impairing the benefits accruing to the requesting Member under a covered agreement" at the time of the establishment of the panel.

(Appellate Body Report, *EC – Selected Customs Matters*, para. 184 (emphasis added, fn omitted))

[864] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 97.

[865] Japan filed its first and second written submission to the panel on 30 June and 27 August 2008, respectively. The USDOC published the final results of Review 9 on 11 September 2008.

[866] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 99.

[867] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 111. (emphasis added)

[868] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 112. (emphasis added)

7.521. The Appellate Body recalled that in the original proceeding, the United States was found to have acted inconsistently with Articles 2.4 and 9.3 of the Anti-Dumping Agreement and Article VI:2 of the GATT 1994 by: (a) maintaining zeroing procedures in periodic reviews; and (b) applying zeroing procedures in the 11 periodic reviews at issue. The Appellate Body stated that if zeroing were used in Review 9, it would mean that the United States *had not ceased the practice of using zeroing procedures in periodic reviews*, contrary to the DSB recommendations and rulings.[869] Thus, the Appellate Body considered that Review 9 was a measure that had a bearing on compliance, which also should be taken into account in assessing whether Japan's panel request met the requirements of Article 6.2, read in the light of Article 21.5.[870] The Appellate Body considered that, in this case, the phrase "closely connected measures" was sufficiently precise to identify Review 9, given that it was a periodic review of the same anti-dumping duty order on imports of ball bearings from Japan and immediately followed Reviews 1 through 6.[871] This analysis was sufficient to establish that Japan's panel request met the requirement of Article 6.2 to "identify the specific measures at issue".[872]

7.522. The Appellate Body also rejected the United States' second objection that Review 9 was a "future measure" that did not exist at the time of Japan's panel request and therefore could not be within the panel's terms of reference. It noted that aside from the reference in the present tense to the fact that the complainant must identify the measures "at issue", Article 6.2 does not set out an express temporal condition or limitation on the measures that can be identified in a panel request.[873] Moreover, it recalled its statement in *EC – Chicken Cuts* that measures enacted subsequent to the establishment of a panel may, *in certain limited circumstances*, fall within a panel's terms of reference.[874] The Appellate Body considered that the proceeding before it presented circumstances in which the inclusion of Review 9 was *necessary* for the panel to assess whether there had been compliance.[875] In this regard, the Appellate Body noted the following factors:

a. Review 9 was *initiated before recourse to the compliance proceeding*, and was completed during the course of that compliance proceeding[876];

b. Review 9 was *identical in nature and effect* to Reviews 4, 5, and 6 (which had been specifically identified in Japan's panel request) and superseded those measures, and related to the same anti-dumping duty order as Reviews 1, 2, and 3, which were found to be WTO-inconsistent in the original proceeding. Thus, Review 9 was the latest link in a chain of assessment incorporating those measures.[877]

c. Review 9 was alleged to incorporate the use of zeroing, i.e. the *same conduct* that was found WTO-inconsistent in the original proceeding.[878]

7.523. The Appellate Body did not consider that the systemic concerns identified by the United States[879] arose in the particular situation as the United States and third parties were given adequate notice and opportunities to respond to Japan's allegations concerning Review 9. Nor did it agree with the United States that inclusion of Review 9 would lead to "asymmetry" in the

[869] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 114.
[870] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 114.
[871] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 116.
[872] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 117.
[873] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 121.
[874] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, paras. 121 and 125 (referring to Appellate Body Report, *EC – Chicken Cuts*, para. 156).
[875] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 125.
[876] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, paras. 122, 124, and 127.
[877] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, paras. 123, 124, and 127.
[878] Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, paras. 122, 124, and 127.
[879] The United States had identified the following concerns: (a) that Members would be obliged to make legal claims and undertake an analysis of new or modified measures on short notice, without a meaningful opportunity to review the measures; and (b) that compliance panels would have to react to such changes after some or all of the written submissions had been filed and the meetings with the parties had been completed, placing panels in the position of having to decide whether to restart the proceedings, or make findings without the full benefit of the views of the parties and third parties. (Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan)*, para. 128 and fn 346).

treatment of complainants and respondents as regards the inclusion of subsequent measures that exacerbate or mitigate non-compliance.[880]

7.524. We read the Appellate Body Reports in *Chile – Price Band System*, *EC – Chicken Cuts*, and *US – Zeroing (Japan) (Article 21.5 – Japan*) as clarifying: (a) that the requirements of Article 6.2 of the DSU are such that the measures included in a panel's terms of reference will ordinarily be in existence at the time of the establishment of the panel; and (b) that there are particular, limited circumstances in which measures coming into existence subsequent to the panel request are within a panel's terms of reference. These circumstances, in one way or another, involve new measures that amend, modify, supplement, extend, replace, renew, relate to, or implement the measures that were explicitly identified in the panel request *without changing their essence, in light of the claims made by the complaining party*. The Appellate Body has thus interpreted the requirements of Article 6.2 of the DSU in a manner that prevents a measure evading review merely because of amendments or modifications to the legal form of the measure during the course of dispute settlement proceedings that do not change its essence in light of the nature of the claims at issue, while still fully respecting the due process rights of responding parties and potential third parties to be informed of the specific measures at issue and the nature of the claims raised by the complaining party.

7.525. This is also borne out by the approach taken by a number of panels. For example, in *EC – IT Products*, the complaining parties had identified a number of measures imposing duties on flat panel displays, including Council Regulation No. 2658/87, as amended. Footnote 4 of the panel request noted that the Council Regulation included amendments adopted pursuant to Commission Regulation No. 1214/2007, which contained the CN2008. In addition, the panel request identified as part of the measures at issue "any amendments or extensions and any related or implementing measures".[881] The panel explained that the Commission adopted a complete updated version of the CN each year, as an amendment to annex I of Council Regulation No. 2658/87. The CN had been updated twice, by CN2009 and CN2010, since the complaining parties had filed their panel request.[882] The panel noted that the subsequent amendments to the Council Regulation No. 2658/87 strictly prolonged its period of application without modifying any of the terms or headings at issue in the dispute. Thus, the subsequent amendments, including the 2008-2010 versions, did not change the essence of the CN2007 version set forth in Council Regulation No. 2658/87 that was identified in the panel request.[883] The panel said:

> While we do not consider that the mere incantation of the phrase "any amendments or extensions and any related or implementing measures" in a panel request will permit Members to bring in measures that were clearly not contemplated in the Panel request, it may be used to refer to measures not yet in force or concluded on the date of the panel request, or measures that the complainants were not yet aware of, such as government procedures not yet published that have the same essential effect as the measures that were specifically identified. This is to prevent the possibility that the procedural requirements of WTO dispute settlement result in a situation where measures could completely evade review. This is especially true with the type of measures we have before us, which are amended annually.[884]

7.526. The panel concluded that Council Regulation No. 2658/87, as amended, which included in annex I the currently applicable CN, was the specific measure at issue and was properly identified in the panel request.[885]

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[880] The United States had argued that accepting the panel's approach would mean that complaining parties would be allowed to challenge subsequent measures while similar requests by respondents have been rejected by panels. (Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), para. 129).

[881] Panel Report, *EC – IT Products*, para. 7.130.

[882] Panel Report, *EC – IT Products*, para. 7.128.

[883] Panel Report, *EC – IT Products*, para. 7.142.

[884] Panel Report, *EC – IT Products*, para. 7.140. (fns omitted)

[885] Panel Report, *EC – IT Products*, para. 7.146. The panel took a similar approach with respect to Council Regulation No. 301/2007, which simply prolonged the period of application a tariff duty suspension initially provided in an explicitly identified measure (Council Regulation No. 493/2005) without modifying the scope of applicability of the duty suspension. (See ibid. para. 7.182). It also reached a similar conclusion in respect of a subsequent measure (Council Regulation No. 179/2009) that not only prolonged the duration of the initial duty suspension under Council Regulation No. 493/2005, but also expanded the terms of the

7.527. A similar approach was adopted in *EC – Fasteners (China*), where the panel was required to determine whether a subsequent Council Regulation, which repealed and replaced the Council Regulation that had been explicitly identified in China's panel request, was within the panel's terms of reference, in circumstances where the repeal of the original measure and entry into effect of the new measure occurred after the establishment of the panel.[886] The panel noted that it was undisputed that the new measure was almost identical to the explicitly identified measure it had repealed and replaced.[887] Thus, while the Council Regulation that China had explicitly identified in its panel request was subsequently repealed, it was immediately replaced by a new Council Regulation that contained, in almost identical terms and substance, the same provision that China had identified in its panel request.[888] The panel concluded that the new measure was within the panel's terms of reference, and that to sustain the European Union's objection to the inclusion of the new measure (which the panel considered to be formalistic rather than substantive) would "not be consistent with the effective functioning of the WTO dispute settlement system, as it might lead to inappropriate legal manoeuvres to avoid dispute settlement, inconsistent with the obligation of Members to engage in dispute settlement 'in good faith in an effort to resolve the dispute'".[889]

7.528. The European Union has argued that, in assessing whether to include measures that have come into existence during panel proceedings as falling within the panel's terms of reference, panels and the Appellate Body have assessed whether the panel request was "broad enough" to include such a measure, noting that a panel request may identify measures or a category of measures with some breadth while still meeting the requirement of Article 6.2 of the DSU to "identify the specific measures at issue". In the present case, according to the European Union, the panel request, through its references to "amendments" and "extensions" as challenged measures in paragraph 27, is broad enough to encompass the amendments to the Washington State tax measures effected by SSB 5952. Moreover, the "essence" of the Washington State measures as amended by SSB 5952, i.e. as tax incentives, remains essentially the same.

7.529. We note that the European Union's panel request in this proceeding consists of two sections. Section I, entitled "Measures", contains a listing of all of the measures that the European Union considers to be specific subsidies that cause present adverse effects in the form of serious prejudice, and a threat thereof, are prohibited subsidies, and are measures inconsistent with national treatment obligations, as detailed in section II, entitled "Legal Basis", which purports to detail the specific claims made against the measures identified in section I. Section I consists of Parts A through G, which identify distinct categories of measures and list the individual measures within each such category. Section I.D, entitled "Washington State and Local Subsidies", lists at paragraph 17 the Washington State tax incentives enacted pursuant to HB 2294, described in paragraph 7.462 of these reasons, along with a tax measure maintained by the City of Everett. Paragraph 17 concludes with the following statement:

> Through these measures, the State of Washington and its political subdivisions provide financial contributions within the meaning of Article 1.1(a)(1)(i)-(ii) of the SCM Agreement, that confer a benefit to Boeing within the meaning of Article 1.1(b) of the SCM Agreement. These subsidies are specific within the meaning of Articles 1.2, 2.1, and 2.3 of the SCM Agreement.

7.530. Paragraph 27 appears as the last paragraph of Section I.G entitled "South Carolina State and Local Subsidies". It states:

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suspension to include a broader category of products on the basis that, despite the enlarged coverage, the suspension operated in a near identical manner and with similar legal implications to the explicitly identified measure, and did not change the essence of its predecessor measures in prolonging the duty suspension. (See ibid. para. 7.186).

[886] Panel Report, *EC – Fasteners (China)*, paras. 7.32 and 7.33.

[887] Panel Report, *EC – Fasteners (China)*, para. 7.32.

[888] Panel Report, *EC – Fasteners (China)*, para. 7.34.

[889] Panel Report, *EC – Fasteners (China)*, para. 7.34 (fn omitted). See also the Panel Reports, *US – Customs Bond Directive*, para. 7.22, and *US – Shrimp (Thailand*), para. 7.48, where the panels emphasized that the new measure sought to "clarify" the legislation that established the measure at issue and did not "change the essence" of the original measure into something different from what was in force before its issuance. Similarly, in the Panel Report in *Dominican Republic – Import and Sale of Cigarettes*, where the explicitly identified measure had been replaced by a subsequent measure that did not "change the essence" of the original measure, the panel determined that it would examine the new legal instrument for purposes of resolving Honduras' complaint. (See ibid. paras. 7.19-7.21).

> In addition to the measures specifically listed above in Section I of this request, the European Union also considers that any amendments, supplements, extensions, replacement measures, renewal measures, related measures, or implementing measures constitute specific subsidies.[890]

7.531. At first sight, paragraph 27 of the European Union's panel request appears as part of the section of the panel request identifying the South Carolina State and Local measures that are alleged to constitute specific subsidies. However, paragraph 27 refers to "the measures specifically listed above in Section I of this request" suggesting that it is intended to mean that any amendments, supplements, extensions, replacement measures, renewal measures, related measures or implementing measures in relation to any of the measures specifically identified in sections I.A through I.G of the panel request are also included in the European Union's panel request.

7.532. Paragraph 27 thus purports to identify practically every conceivable change to any of the measures under any of the fourteen listed NASA aeronautics R&D programmes in section I.A, the DOD RDT&E program elements listed in 34 dot points in section I.B, the FAA CLEEN Program identified in section I.C, Washington state and local measures listed in seven dot points in section I.D, FSC/ETI legislation and successor acts identified in section I.E, state and local property and sales tax abatements maintained by the State of Kansas and the City of Wichita identified in I.F. and the South Carolina state and local measures listed in 12 dot points in section I.G, regardless of the nature of such change or how it relates to the explicitly identified measure.

7.533. The European Union's panel request is undoubtedly "broad enough" to include amendments to measures of the nature of the amendments to the Washington State tax measures effected by SSB 5952.[891] However, the relevant question is whether paragraph 27 is not *too broadly drafted* to satisfy the requirement of Article 6.2 to identify the specific measures at issue in the context of the SSB 5952 amendments to the Washington State tax measures identified in paragraph 17 of the panel request.

7.534. As we have explained, panels and the Appellate Body have sought to address a concern that the requirement of Article 6.2 of the DSU to "identify the specific measures at issue" not lead to measures evading review through subsequent amendments or modifications which do not change the essence of the measure, merely because those subsequent measures were not explicitly identified in the complaining party's panel request. However, in addressing this particular concern, panels and the Appellate Body should not be considered to have invited complaining parties to include very general and extensive "catch-all" phrases in their panel request as a protection against the requirement of Article 6.2 of the DSU to identify the specific measures at issue. Otherwise, a specific and quite limited set of circumstances in which measures coming into existence after the request for the establishment of a panel may be found to be within a panel's terms of reference would be transformed into a situation in which, provided a panel request includes a sufficiently broad catch-all description, any subsequent measures that come into existence during the course of a panel proceeding will be within a panel's terms of reference. We do not consider that such a permissive approach to the requirements of Article 6.2 of the DSU finds support in the panel and Appellate Body reports we have examined, or as a matter of principle, given the plain meaning and objectives of Article 6.2 of the DSU.[892]

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[890] European Union's request for the establishment of a panel, para. 27.

[891] See Appellate Body Report, *Chile – Price Band System*, para. 144. While the panel in *EC – Chicken Cuts* attached some importance to the fact that the panel request was not as broadly drafted as the panel request in *Chile – Price Band System*, this did not appear to form a central part of the Appellate Body's reasoning in concluding that the two subsequent measures in that case were outside the panel's terms of reference. We note that the panel in *EC – Fasteners (China)* found the subsequent measure to be within its terms of reference despite the absence of any reference to "amendments" in the panel request. (See Panel Report, *EC – Fasteners (China*), para. 7.38).

[892] The only case in which a panel has clearly adopted a less restrictive approach to the requirement of Article 6.2 of the DSU to identify the specific measures at issue when a new measure has arisen subsequent to the panel request is *Australia – Salmon (Article 21.5 – Canada*). In that case, the panel found that Canada's panel request covered a Tasmanian import ban on salmonid products introduced subsequent to the establishment of the panel even though the panel request only referred explicitly to a decision of the Australian Quarantine and Inspection Service (AQPM 1999/51) regarding policies for non-viable salmonid products. (See Panel Report, *Australia – Salmon (Article 21.5 – Canada*), para. 7.10, at paras. 24-29 therein). It is difficult to

7.535. This is clear from the approach taken by the panel and Appellate Body in *US – Zeroing (Japan) (Article 21.5 – Japan*) to construing the phrase "subsequent closely connected measures" in Japan's panel request. The panel and Appellate Body each undertook a detailed analysis of the text of Japan's panel request before concluding that, *in the particular context*, including the location of the phrase in the sub-section of the panel request entitled "periodic reviews", any "subsequent closely connected measures" could *only* refer to periodic reviews of the anti-dumping duty on ball bearings, and Review 9 was a periodic review of the same anti-dumping duty on ball bearings from Japan which immediately followed Reviews 1 through 6 and which was already on-going and therefore clearly identifiable at the time of Japan's panel request. If a basic reference to generic terms such as "subsequent closely connected measures" in a panel request were sufficient to satisfy the requirements of Article 6.2 of the DSU, such an analysis would not have been necessary.

7.536. When we examine the relationship between the Washington State tax measures explicitly identified in the European Union's panel request, and those measures as amended by SSB 5952, we are unable to conclude that, in the context of the specific claims made in this dispute, the Washington State tax measures remain "essentially unchanged" following the enactment of SSB 5952.

7.537. In the original proceeding, the Washington State tax measures enacted under HB 2294 were part of a package of measures designed to retain and attract the aerospace industry to Washington State, specifically by providing tax incentives conditioned on Boeing assembling the 787 in Washington State. SSB 5952 extends the availability of those tax incentives later in time, conditioned, however, on Boeing producing wings and fuselages for a different aircraft, the 777X, in Washington State and using them in the final assembly of the 777X in Washington State. In addition, Boeing will only be entitled to claim the B&O tax rate reduction in respect of future revenues related to the 777X for so long as it conducts wing assembly and final assembly of the 777X exclusively in Washington State.[893] As we explain in Section 7.7.5.5, the amendments effected by SSB 5952 change the nature of the Washington State tax measures that will operate from 1 July 2024 in a significant respect, in that their availability post 1 July 2024 is subject to a contingency that does not condition their availability prior to 1 July 2024. Moreover, the availability of the B&O tax rate reduction in respect of future 777X revenues is now subject to a condition that did not previously apply.[894] This is in marked contrast to the new measures in cases such as *Chile – Price Band System*, *Argentina – Footwear (EC*), *US – Zeroing (Japan) (Article 21.5 – Japan*), *EC – IT Products,* and *EC – Fasteners (China*), where the new measures either "clarified" the measure or essentially replicated the explicitly identified measures through new legislative action, and thus

reconcile the panel's approach to the requirements of Article 6.2 of the DSU in that case with the approach of panels and the Appellate Body in the other cases we have discussed. Indeed, the Appellate Body in *Chile – Price Band System* referred with approval to the reasoning adopted by the panel in the earlier case of *Argentina – Footwear (EC*) but did not mention the panel report in *Australia – Salmon (Article 21.5 – Canada*). Significantly, the Appellate Body in *US – Zeroing (Japan) (Article 21.5 – Japan*) also did not refer to the panel report in *Australia – Salmon (Article 21.5 – Canada*) notwithstanding its discussion of the requirements of Article 6.2 in the light of compliance proceedings under Article 21.5 of the DSU and the fact that Japan and one of the third parties had referred to this panel report in support of their respective arguments. (See Appellate Body Report, *US – Zeroing (Japan) (Article 21.5 – Japan*), paras. 47, 49, 91, and 104). From this we conclude that the approach taken by the panel in *Australia – Salmon (Article 21.5 – Canada*) to the requirement of Article 6.2 of the DSU to identify the specific measures in the context of new measures coming into existence in the course of a proceeding is something of an outlier.

[893] See Section 7.7.5.1. The 777X was launched in November 2013, and although Boeing has already received orders and commitments for the aircraft, production is not scheduled to begin until 2017 and first deliveries are targeted only for 2020, meaning that it is likely to be some time in the future before Boeing is in a position to claim B&O tax rate reductions related to 777X revenues. (See Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299)).

[894] Indeed, it is because of the ways in which SSB 5952 conditions the availability of the Washington State tax measures after 1 July 2024, and the availability of the B&O tax rate reduction in respect of future revenues related to the 777X, that the European Union considers the Washington State tax measures, as amended or extended by SSB 5952, are prohibited subsidies contingent on the use of domestic over imported goods, and accord less favourable treatment to imported wings and fuselages over domestically produced wings and fuselages *in a different manner* to the way in which those claims against the Washington State tax measures were presented in its submissions and at the meeting with the Panel. In addition, the overall amount of the tax incentives is said to be significantly larger, thus further strengthening the causal link between the Washington State tax measures and the alleged serious prejudice, as well as making Boeing's 777X launch decision in November 2013 significantly more likely.

concerned the same measure (in a substantive sense) that was either the subject of panel request or that had been found WTO-inconsistent in the original proceeding.[895]

7.538. We therefore consider that, in the circumstances, paragraph 27 of the European Union's panel request does not provide a basis for including the Washington State tax measures, as amended by SSB 5952, within the panel's terms of reference, consistently with the requirements of Article 6.2 of the DSU to "identify the specific measures at issue".

7.539. As already explained in paragraph 7.506 we are mindful of the importance, in the context of a compliance proceeding, of interpreting the requirements of Article 6.2 in light of Article 21.5 of the DSU. In that regard, we note that in the original proceeding, the Washington State B&O tax rate reduction was found to be a specific subsidy that caused adverse effects.[896] There were no adverse effects findings in relation to the other Washington State tax measures.[897] The panel found that the European Communities had not demonstrated that the Washington State tax measures enacted under HB 2294 were inconsistent with Articles 3.1(a) and 3.2 of the SCM Agreement[898] and the European Union did not pursue this finding on appeal.[899] Finally, the European Communities did not pursue any claims under Article 3.1(b) of the SCM Agreement or Article III:4 of the GATT in the original proceeding.[900] This situation is therefore starkly different from the situation before the Appellate Body in *US – Zeroing (Japan) (Article 21.5 – Japan*). In that case, the United States was found to have acted inconsistently with Articles 2.4 and 9.3 of the Anti-Dumping Agreement and Article VI:2 of the GATT 1994 by maintaining zeroing procedures in periodic reviews and by applying zeroing procedures in specifically identified periodic reviews.[901] The new measure, Review 9, was a subsequent periodic review of the same anti-dumping duty order on which the periodic reviews in the original proceeding had been based and allegedly employed the same zeroing procedure that was found to be WTO-inconsistent in the original proceeding. Review 9 was thus considered to have a direct bearing on compliance, because if zeroing were used in Review 9, it would mean that the United States, by maintaining zeroing procedures in periodic reviews, had not complied with the DSB recommendations and rulings.

7.540. In the case before us, by contrast, there were no findings (or claims) of WTO-inconsistency in the original proceeding in relation to Articles 3.1(b) of the SCM Agreement or Article III:4 of the GATT 1994. In relation to the adverse effects claims, the Washington State tax measures as presently enacted under HB 2294 will continue for almost another ten years in any event, and (subject to our resolution of the preliminary objections to the various claims concerning the Washington State tax measures and to the inclusion of the Washington State tax measures, other than the B&O tax rate reduction, within the scope of this proceeding) can be adjudicated upon in this compliance proceeding.[902] In other words, the inclusion of the Washington State tax measures as amended by SSB 5952 in the Panel's terms of reference is not *necessary* to enable the Panel to assess whether there has been compliance with the DSB recommendations and rulings as regards

[895] The European Union is correct that, both before and after the entry into effect of SSB 5952, the Washington State tax measures remain tax incentives. However, in the context of the claims made in this proceeding, the conditions to which the Washington State tax measures as amended by SSB 5952 are subject are of central importance to the nature of the measures. These conditions are significantly different from the conditions on which the Washington State tax measures were made available under HB 2294. Indeed, it is these different conditions the European Union has indicated are key to its theory as to why these modified measures are inconsistent with Article 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994. As a result, the "legal implications" of the Washington State tax measures as amended by SSB 5952 are different from the legal implications of those measures prior to their amendment. (See Appellate Body Report, *EC – Chicken Cuts*, para. 158).

[896] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1274.

[897] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 1341 and 1344-1346.

[898] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1590.

[899] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 28.

[900] The United States has objected to inclusion within the scope of the compliance proceeding of the European Union's claims under Article 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994 with respect to all original measures, on the basis that the European Union did not bring such claims in the original proceeding. (United States' request for preliminary rulings, dated 13 November 2012, paras. 15-17 and 60; reply to the European Union's response to the United States' request for preliminary rulings, dated 3 December 2012, para. 25; first written submission, para. 84; and second written submission, para. 46).

[901] Appellate Body Report, *US – Zeroing (Japan*), para. 190.

[902] We recall that the United States has requested preliminary rulings that the Washington State tax measures other than the B&O tax rate reduction are outside the scope of this proceeding. The Panel has not yet ruled whether the challenged measures are within the scope of this proceeding and does not make any ruling in that regard in these reasons.

the Washington State tax measures in the way that the inclusion of Review 9 was necessary for the panel to assess whether there had been compliance in *US – Zeroing (Japan) (Article 21.5 – Japan*).[903] We do not consider that our function under Article 21.5 of the DSU would be frustrated if the Washington State tax measures as amended by SSB 5952 were excluded from our terms of reference.

7.541. The European Union has also argued that it challenges "all instances of application of the Washington State tax incentives", regardless of any amendments to the subsidy programme itself. Even assuming this were the case, we do not see that this changes our conclusion. The fact remains that the "instances of application" of the Washington State tax measures explicitly identified in the European Union's panel request cease to operate as of 1 July 2024. To the extent that such tax measures are applied after that date, it is by virtue of SSB 5952, which is not explicitly identified in the panel request as it only became effective in February 2014.[904] The European Union suggests that failure to treat the instances of application of the Washington State tax measures, as amended by SSB 5952 would "make it impossible to sustain a claim against a subsidy programme and its instances of application, since by simply amending the programme the defending Member could remove the continuing flow of subsidies from the scope of the proceedings".[905] We find this reasoning difficult to understand, as the issue is not whether SSB 5952 *removes* the continuing flow of subsidies from the scope of the proceeding, but rather, whether the continuing flow of the Washington State tax measures *includes* the flow that will continue beyond 1 July 2024 by virtue of the SSB 5952 amendments, given that SSB 5952 was not explicitly identified in the panel request and only came into effect at a late stage of the proceeding.

7.542. We are mindful that our conclusion that SSB 5952 is outside this Panel's terms of reference means that the European Union would need to commence another proceeding in order to pursue its claims regarding the Washington State tax measures as amended by SSB 5952. We have considered carefully whether it would be more expedient to resolve the claims regarding those measures in this proceeding, especially in light of the principles of satisfactory settlement of a matter and securing a positive solution to the dispute, reflected in Articles 3.4 and 3.7 of the DSU, respectively. However, while a positive and effective resolution of a dispute is one of the key objectives of the WTO dispute settlement system, this objective cannot be pursued at the expense of complying with the specific requirements and obligations of Article 6.2[906], which are not discretionary in nature but rather go to the issue of a panel's jurisdiction, and additionally reflect the important due process objective of notifying the parties and potential third parties of the nature of the dispute.

7.543. Given that we have concluded that the Washington State tax measures, as amended by SSB 5952, are not within our terms of reference, we do not have to address the issue of whether, in any case, we would have granted leave to present arguments on the amended measures, given the very late stage of the proceeding at which this request for leave arose and the significant delays that would undoubtedly arise in an already extremely complex and protracted proceeding if the Panel were to grant leave and open the issue to full briefing by the parties and third parties.[907] Nor is it necessary to address in these reasons the United States' argument, first raised in its request for preliminary rulings, that the European Union's claims regarding Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Articles III:1, III:4, and III:5 of the GATT 1994 fail to meet the threshold set by Article 6.2 of the DSU and are therefore outside the Panel's terms of reference, in order to resolve the question of whether the Washington State tax measures, as

[903] This is the case irrespective of whether the Panel allows or declines the United States' request for various preliminary rulings concerning the inclusion of the Washington State tax measures other than SSB 5952, and claims under Articles 3.1(b) of the SCM Agreement and Article III:4 of the GATT 1994 within the scope of the compliance proceeding.

[904] To the extent that SSB 5952 changes the conditions according to which Boeing would expect to be eligible for the B&O tax rate reduction in respect of revenues from the 777X, we note that first deliveries for this aircraft are targeted only for 2020, meaning that it is likely to be some time in the future before Boeing is in a position to claim B&O tax rate reductions related to 777X revenues. (See Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299)).

[905] European Union's letter to the Panel, dated 31 March 2014, para. 7.

[906] See Appellate Body Report, *EC – Chicken Cuts*, paras. 155 and 161.

[907] We note that the United States reserved its right to present its case orally to the "new affirmative case that the EU has attempted to raise at this late stage of the proceeding". (United States' letters to the Panel, dated 21 March 2014, para. 11, and dated 9 April 2014, para. 18).

amended by SSB 5952, are within our terms of reference, and whether the European Union should be granted leave to file an additional submission regarding SSB 5952. We recognize, however, that these and other preliminary objections remain before us.

7.7.6.3 Conclusion

7.544. We have concluded for the above reasons that the European Union's panel request does not meet the requirements of Article 6.2 of the DSU, read in the light of Article 21.5 of the DSU, to specifically identify the measures at issue, as regards the Washington State tax measures, as amended by SSB 5952. We thus find that the Washington State tax measures, as amended by SSB 5952, are outside the Panel's terms of reference. As explained earlier, for this reason, we decided to decline the European Union's request for leave to file an additional submission regarding SSB 5952.

7.8 Summary of the Panel's conclusions as to whether certain measures and claims are outside the Panel's terms of reference or are otherwise outside the scope of this proceeding

7.545. In respect of the Panel's rulings as to whether certain measures, or claims with respect to certain measures, are within our terms of reference for purposes of Article 6.2 of the DSU, we make the following rulings:

a. The European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994, are within the Panel's terms of reference.[908]

b. The South Carolina Phase II measures are outside the Panel's terms of reference, owing to the failure of the European Union's panel request to meet the requirements of Article 6.2 of the DSU in respect of such measures.

c. The Washington State tax measures, as amended by SSB 5952, are outside the Panel's terms of reference, owing to the failure of the European Union's panel request to meet the requirements of Article 6.2 of the DSU in respect of such measures.

7.546. The United States disputes that it has a compliance obligation *with respect to certain measures* that the European Communities unsuccessfully challenged in the original proceeding, and considers that other measures are not sufficiently closely connected to measures for which it has a compliance obligation as to warrant their inclusion within the scope of this compliance proceeding. As regards the particular categories of measures challenged by the European Union in this proceeding for which the United States has sought rulings that these measures are outside the scope of this proceeding because they are not original measures in respect of which the United States has a compliance obligation, nor are they measures taken to comply, within the meaning of Article 21.5 DSU, we have made the following rulings:

7.547. As to the Washington state and local measures:

a. The following measures are within the scope of this proceeding:

   i. Washington State B&O tax credits for preproduction/aerospace product development;

   ii. Washington State B&O tax credit for property taxes and leasehold excise taxes;

   iii. Washington State sales and use tax exemptions for computer software, hardware, and peripherals; and

[908] The Panel's ruling that the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III of the GATT 1994, are within its terms of reference is without prejudice to its further rulings, in Sections 7.6.2, as to whether these claims in respect of certain measures are nevertheless outside the scope of this compliance proceeding.

iv. City of Everett B&O tax rate reduction.

b. The JCATI measure is outside the scope of this proceeding.

7.548. As to the DOD aeronautics R&D measures:

a. The following measures are within the scope of this proceeding:

i. DOD procurement contracts funded through the 23 original RDT&E program elements; and

ii. Procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 SOW and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001 funded through the Materials Processing Technology Project of the Materials and Biological Technology program element.

b. The following measures the subject of the European Union's claims in respect of certain "additional" RDT&E program elements are outside the scope of this proceeding:

i. Air Force Contract F19628-01-D-0016 funded under the DRAGON Project of the Airborne Warning and Control System (AWACS) (PE 0207417F) program element;

ii. Air Force Contract FA8625-11-C-6600 funded under the KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element; and

iii. Measures funded under the Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element, including Navy contracts N00019-04-C-3146, N00019-09-C-0022, and N00019-12-C-0112.

c. In addition, measures funded under the Technology Transfer (PE 0604317F) program element, the Defense Logistics Agency IP ManTech (PE 0708011S) program element and the Long Range Strike Bomber (PE 0604015F) program element are not further considered in this proceeding because the Panel is not satisfied of the existence of any procurement contracts or assistance instruments with Boeing which the European Union identifies as relevant to its claims, and which are funded under these program elements.

d. The provision of access to DOD equipment and employees is within the scope of this proceeding with respect to the post-2006 procurement contracts and assistance instruments funded under the 23 original RDT&E program elements and the "additional" program elements that we have found to be within the scope of this proceeding. The provision of access to DOD equipment and employees is outside the scope of this proceeding with respect to the pre-2007 procurement contracts and assistance instruments funded under the 23 original RDT&E program elements.

7.549. The FAA aeronautics R&D measure is within the scope of this proceeding.

7.550. As to the South Carolina state and local measures, the Project Gemini measures and the Project Emerald measures are within the scope of this proceeding.

7.551. The aforementioned findings as to the measures that are within the scope of this proceeding are without prejudice to the independent issue of whether certain *claims relating to certain measures* are nevertheless outside the scope of this proceeding.

7.552. In addition, the United States has requested rulings that certain *claims relating to certain measures* are nevertheless outside the scope of this proceeding. On this separate question of the *claims that may be made against certain measures in this proceeding*, we have additionally ruled that:

a. The European Union is precluded from bringing claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the following four original Washington State tax measures enacted under HB 2294: the Washington State B&O tax rate reduction; the Washington

State B&O tax credits for preproduction/aerospace product development[909], the Washington State B&O tax credit for property taxes[910], and the Washington State sales and use tax exemptions for computer hardware, peripherals, and software.

b. The European Union is precluded from bringing claims under Article 3.1(b) and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994, in respect of the following four original Washington State tax measures enacted under HB 2294: the Washington State B&O tax rate reduction; the Washington State B&O tax credits for preproduction/aerospace product development[911], the Washington State B&O tax credit for property taxes[912], and the Washington State sales and use tax exemptions for computer hardware, peripherals, and software; as well as the FSC/ETI measures.

c. The European Union is precluded from bringing claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994 in respect of:

   i. the City of Everett B&O tax rate reduction, the tax abatements related to the City of Wichita IRBs, and the pre-2007 NASA Space Act Agreements and DOD procurement contracts as original measures; and

   ii. the pre-2007 NASA procurement contracts and DOD assistance instruments at issue in the original proceeding, as amended by the respective Boeing Patent Licence Agreements.

7.553. In Section 8 of this Report, we consider whether the European Union has demonstrated that the United States has failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement.

8 WHETHER THE UNITED STATES HAS FAILED TO WITHDRAW THE SUBSIDY, WITHIN THE MEANING OF ARTICLE 7.8 OF THE SCM AGREEMENT

8.1. As explained above[913], in this Section of the Report we examine, first, whether the United States has failed to withdraw the subsidy through the modifications it made to the particular pre-2007 NASA and DOD aeronautics R&D subsidies the subject of the DSB recommendations and rulings (Section 8.1) and, second, whether the United States has failed to withdraw the subsidy by granting or maintaining seven types of post-2006 measures alleged to constitute specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement (Section 8.2).

8.1 Whether the United States has failed to withdraw the subsidy by modifying the terms of the NASA and DOD aeronautics R&D subsidies the subject of the DSB recommendations and rulings

8.1.1 Introduction

8.2. In this Section of the Report, we evaluate whether the United States has failed to withdraw the subsidy, within the meaning of Article 7.8, by amending the pre-2007 NASA procurement contracts and DOD assistance instruments the subject of the DSB recommendations and rulings to grant a commercial use licence to NASA and DOD in respect of Boeing-owned patents developed under those instruments.

8.3. In the original proceeding, three categories of NASA and DOD aeronautics R&D measures were found to be specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement:

[909] Including amendments thereto pursuant to SSB 6828.
[910] Including amendments thereto pursuant to HB 2466.
[911] Including amendments thereto pursuant to SSB 6828.
[912] Including amendments thereto pursuant to HB 2466.
[913] See Section 6.4 above.

a. payments and access to NASA facilities, equipment, and employees provided to Boeing pursuant to NASA procurement contracts[914] funded under eight NASA aeronautics R&D programmes[915] related to R&D applicable to the development, design, and production of large civil aircraft;

b. access to facilities, equipment, and employees provided to Boeing under Space Act Agreements[916] entered into under these programmes; and

c. payments and access to DOD facilities provided to Boeing under assistance instruments[917] entered into between DOD and Boeing under 23 RDT&E programmes.[918]

8.4. The Appellate Body based its finding that the financial contributions provided through the NASA procurement contracts and DOD assistance instruments before it conferred a benefit, on a comparison of the allocation of intellectual property rights, and more specifically, rights in respect of patents, under the NASA procurement contracts and DOD assistance instruments, with corresponding allocations in transactions between two market actors.[919]

8.5. In its Compliance Communication, the United States advises that:

> The National Aeronautics and Space Administration ("NASA") has modified the rights accorded to the parties under the contracts listed in Annex A so as to make them consistent with commercial practice. These modifications apply to all of the NASA contracts covered by the recommendations and rulings of the DSB. NASA has made identical modifications, as necessary, with regard to contracts subsequent to those covered by the recommendations and rulings of the DSB, without prejudice to the U.S. view that those contracts were not subsidies causing adverse effects to EU interests. These contracts are also listed in Annex A.[920]
>
> The U.S. Department of Defense ("DoD") has modified the rights accorded to the parties under the cooperative agreements, technology investment agreements, and other Transactions listed in Annex B so as to make them consistent with commercial practice. The modifications apply to all of the DoD assistance instruments covered by the recommendations and rulings of the DSB. DoD made identical modifications with regard to contracts subsequent to those covered by the recommendations and rulings of the DSB, without prejudice to the U.S. view that those contracts were not subsidies causing adverse effects to EU interests. These contracts are also listed in Annex B.[921]

8.6. The modifications referred to in the Compliance Communication were effected through a Subject Invention and Patent License Agreement concluded between NASA and Boeing on

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[914] See para. 8.74 below. The panel in the original proceeding observed that there were only three cooperative agreements between Boeing and NASA, totalling less than USD 5 million, and appears not to have specifically addressed them in its evaluation of whether the NASA procurement contracts and Space Act Agreements were specific subsidies. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.945 and fn 2408). The Appellate Body similarly did not refer to any cooperative agreements in its assessment of the aeronautics R&D measures. We note, however, that the United States included three cooperative agreements (designated by the identifiers NNC10AA02A, NNC10AA03A, and NNL07AA03A) in Annex A to its Compliance Communication. We address in Section 8.2.2 below the European Union's argument that post-2006 NASA cooperative agreements confer specific subsidies.

[915] The eight NASA aeronautics R&D programmes at issue in the original proceeding were the Advanced Composites Technology, High Speed Research, Advanced Subsonic Technology, High Performance Computing and Communications, Aviation Safety, Quiet Aircraft Technology, Vehicle Systems, and Research and Technology Base programmes. For a description of these programmes, see Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1709-7.1739.

[916] See para. 8.78 below.

[917] See para. 8.298 below.

[918] By contrast, the original panel and Appellate Body rejected the European Communities' claim that the allocation of patent rights or data rights under NASA/DOD contracts and agreements constituted a specific subsidy independently from the payments and access to facilities, equipment, and employees provided under those contracts and agreements. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1294 and 7.1311, Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 789).

[919] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 650-666.

[920] United States' Compliance Communication, para. 3.

[921] United States' Compliance Communication, para. 5.

23 September 2012 (NASA-Boeing Patent Licence Agreement)[922] and a Supplemental Subject Invention and Patent License Agreement concluded between DOD and Boeing on 21 September 2012 (DOD-Boeing Patent Licence Agreement).[923]

8.7. In its request for the establishment of a panel in this proceeding, the European Union asserts that NASA maintains its subsidies *inter alia* "by entering into and following the terms of the contracts and other agreements (as modified) with Boeing listed in annex A of the United States' 23 September 2012 notification. Annex A of the 23 September 2012 notification is attached to this request, and the contracts listed therein are incorporated into this request".[924] Similarly, the European Union's panel request states that "DoD also maintains its subsidies to US LCA producers by entering into and following the terms of the contracts and other agreements (as modified) with Boeing listed in annex B of the United States' 23 September 2012 notification. Annex B of the 23 September 2012 notification is attached to this request, and the contracts listed therein are incorporated into this request".[925]

8.1.2 Main arguments of the parties and third parties

8.8. The European Union argues that the NASA-Boeing Patent Licence Agreement and the DOD-Boeing Patent Licence Agreement, (the Boeing Patent Licence Agreements), which grant NASA and DOD a commercial use licence in respect of Boeing patents arising under the pre-2007 NASA procurement contracts and the pre-2007 DOD assistance instruments, are of no value and do not constitute a meaningful withdrawal of the subsidies.[926] The European Union submits that the U.S. Government cannot make practical use of the commercial use licences because the U.S. Government "is not in the business of making or selling aircraft-related products for commercial sale"[927], and cannot produce or sell commercial aircraft, or otherwise use the licences for commercial purposes, without express statutory authorization from the U.S. Congress, which is not part of the United States' compliance measure. Moreover, the restrictions set forth in the two Agreements on NASA's or DOD's ability to sublicense to, or otherwise exercise the commercial use rights in connection with, third parties demonstrate that in reality, Boeing has given up nothing of value for itself through these Agreements, and NASA/DOD has obtained nothing of value for itself. The Boeing Patent Licence Agreements are effectively "sham" transactions that have no effect on the benefit analysis.[928] The European Union contends that the Boeing Patent Licence Agreements have not changed what Boeing and NASA/DOD receive in real terms under the procurement contracts and assistance instruments and thus, there is no need for the Panel to question the benefit analysis that was previously undertaken.[929]

8.9. The European Union recalls the original proceeding, in which the Appellate Body found that the terms of each of Contracts A through F (four of which had been submitted by the United States), confirmed that the NASA procurement contracts and DOD assistance instruments provided a benefit to Boeing due to the fact that, in relevant transactions in the market in which one entity pays another entity to conduct R&D, the party commissioning research obtains the full rights to the resulting technology.[930] The European Union submits that the United States cannot rely on a comparison of the modified terms of these NASA procurement contracts and DOD assistance instruments with only Contract D in order to rebut the European Union's demonstration

[922] NASA-Boeing Subject Invention and Patent License Agreement (September 2012) (formerly Exhibit US-13-9) (NASA-Boeing Patent Licence Agreement), (Exhibit EU-251) (BCI).
[923] DOD-Boeing Supplemental Subject Invention and Patent License Agreement (21 September 2012) (formerly Exhibit US-13-10) (DOD-Boeing Patent Licence Agreement), (Exhibit EU-401) (BCI).
[924] European Union's request for the establishment of a panel, para. 9.
[925] European Union's request for the establishment of a panel, para. 13.
[926] European Union's first written submission, paras. 186-190 and 380-384.
[927] European Union's first written submission, paras. 187 and 381; second written submission, paras. 279 and 485.
[928] European Union's first written submission, paras. 189, 190, and 383-384. In addition, the European Union argues that the United States' admission that the U.S. Government does not plan to engage in purely commercial businesses confirms that the Boeing Licence Agreements have no value, as they cannot currently be used, and the U.S. Government does not plan to use them, as they provide only for the use of the patents for a "commercial purpose". (European Union's comments on the United States' response to Panel question No. 67, para. 12).
[929] European Union's second written submission, paras. 293 and 496.
[930] European Union's first written submission, paras. 180-185; second written submission, paras. 271, 275, 290-298, and 307-309.

in this proceeding that the NASA procurement contracts and agreements and DOD assistance instruments confer a benefit.

8.10. First, the European Union considers that Contract D is an "outlier" when compared to the other five contracts before the Appellate Body and different from what the European Union would consider a market transaction. In the absence of any further contextual information concerning the negotiation of Contract D, it should not be considered a legitimate market transaction.[931] Second, even if Contract D were considered as a benchmark for the benefit analysis, the European Union disputes that the Boeing Patent Licence Agreements amend the allocation of patent rights and related licence rights under the subject NASA procurement contracts and DOD assistance instruments to bring it into line with the allocation of patent rights and related licence rights under Contract D. This is because, while the Boeing Patent Licence Agreements provide for NASA or DOD to receive a non-exclusive, royalty-free licence to the specified patent rights for commercial purposes, neither NASA nor DOD can make practical use of that commercial licence because they do not make or sell aircraft-related products for commercial sale. Moreover, **[***]**.[932]

8.11. The European Union notes that in concluding that the NASA procurement contracts and DOD assistance instruments conferred a benefit in the original proceeding, the Appellate Body found that **[***]**.[933] This conclusion is not affected by the Boeing Patent Licence Agreements, even if they have the effect claimed by the United States because the Boeing Patent Licence Agreements do not affect such **[***]**.[934] A similar analysis applies in respect of the Appellate Body's finding concerning Contract E.[935] Finally, the European Union notes that the Appellate Body found that under Contract F **[***]**.[936] In short, the United States' focus on only Contract D should be taken as a concession that a comparison of the terms of the procurement contracts and assistance instruments with Contracts A-C, E, and F that were before the Appellate Body demonstrates the existence of benefit.[937]

8.12. The European Union refers also to a 2002 contract concluded between Boeing as commissioning party and the National Institute for Aviation Research (NIAR) at Wichita State University that was submitted to the original panel as evidence of a market benchmark.[938] The European Union rejects the assertion by the United States that this contract represents a deviation from NIAR policy.[939] With reference to the 2002 NIAR Contract and the 2013 NIAR standard contract terms submitted by the United States as evidence of NIAR's current contractual practice, the European Union argues that in both instances, when inventions are made jointly or in collaboration by the commissioning and commissioned parties, the inventions are jointly owned. By contrast, under the NASA procurement contracts and agreements and the DOD assistance instruments, inventions made jointly between NASA and Boeing or DOD and Boeing are owned solely by Boeing as commissioned party.[940] In other words, **[***]**.[941]

8.13. The European Union also refers to a recent declaration by the Head of Intellectual Property for Airbus SAS[942] with respect to the distribution of intellectual property rights, articles on intellectual property rights and stem cell research, an article on collaborative research and

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[931] European Union's second written submission, paras. 297 and 504. The European Union submits that **[***]** (European Union's second written submission, paras. 298 and 505).

[932] European Union's second written submission, paras. 304-306 and 511-513.

[933] European Union's second written submission, paras. 293 and 500 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 655).

[934] European Union's second written submission, paras. 293 and 500.

[935] European Union's second written submission, paras. 294 and 501 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 658).

[936] European Union's second written submission, paras. 295 and 502 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 659).

[937] European Union's second written submission, paras. 290 and 497.

[938] European Union's first written submission, para. 184; second written submission, paras. 274 and 307-309. See Contract between Boeing Commercial Airplane Group Wichita Division and Wichita State University, Contract No. 000051728 (4 November 2002) (Original Exhibit EC-1231), (Exhibit EU-243).

[939] European Union's second written submission, para. 308 (referring to United States' first written submission, para. 240).

[940] European Union's second written submission, para. 309.

[941] European Union's second written submission, para. 309.

[942] Airbus SAS is a *société par actions simplifiée* (a joint stock or limited liability company) incorporated under French law. (See Panel Report, *EC and certain member States – Large Civil Aircraft*, fn 2060).

exclusivity of ownership over inventions and WIPO training materials advising companies to acquire intellectual property rights when outsourcing R&D.[943]

8.14. In response to the expert opinion of the United States' technology licensing expert, Louis Berneman, the European Union submits the expert opinion of its technology licensing expert, Richard Razgaitis, as to contracting practices between an R&D commissioning party and a commissioned party with respect to ownership of intellectual property and commercial use rights.[944] Mr Razgaitis concludes, contrary to the view expressed by Mr Berneman, that the rights granted to the commissioned party under the NASA procurement contracts and DOD assistance instruments (as well as the other aeronautics R&D agreements at issue in this proceeding) are materially greater than those granted to the commissioned parties in the non-U.S. Government R&D contracts discussed in Mr Razgaitis' declaration, in which the commissioning party is a company.

8.15. Finally, with regard to non-reimbursable and partially-reimbursable pre-2007 Space Act Agreements, the European Union contends that the original Panel found that the pre-2007 Space Act Agreements provided financial contributions that conferred a benefit, and this finding was not reversed by the Appellate Body. Thus, it argues that the United States "appears to be challenging the DSB rulings and recommendations for the same Space Act Agreements already covered by those rulings and recommendations, without any allegation that those Space Act Agreements have been modified in any way", which it considers is "impermissible".[945] In any event, the European Union argues that Space Act Agreements confer a benefit for the same reasons as NASA procurement contracts.[946]

8.16. The United States argues that the commercial use licence granted to NASA and DOD under the Boeing Patent Licence Agreements was a compliance step "tailored to close the narrow gap between commercial practice and government contracts identified by the Appellate Body in this dispute".[947] Accordingly, the amended allocation of intellectual property rights effected by the Boeing Patent Licence Agreements withdrew the subsidy previously conferred by the pre-2007 NASA procurement contracts and DOD assistance instrument, respectively.[948] The United States considers that the European Union bears the burden to establish that the U.S. measures taken to comply are insufficient. The European Union must therefore show that the pre-2007 NASA procurement contracts and DOD assistance instruments, as amended by the Boeing Patent Licence Agreements, are more favourable to Boeing than comparable commercial joint venture agreements are to the party being commissioned to perform the research. According to the United States, the European Union "must take account of all of the potential benchmarks, identifying which are relevant, and demonstrate that the pre-2007 NASA procurement contracts and DOD assistance instruments, as amended, are more favorable to the non-government party than all of the valid benchmarks".[949]

8.17. The United States argues that the European Union misreads the Appellate Body's findings on benefit as a mandate for a particular approach to the benefit determination, when in fact the Appellate Body was completing the analysis "based on a set of findings and evidence with which it expressed no small discomfort".[950] While the benchmarks in original proceeding "contained valid observations as to the intellectual property term of certain transactions"[951], the United States contends that the benchmarks proposed by the European Union in this proceeding are not valid comparators because they involve a commitment of resources by only one party in exchange for which the other party receives access to all of the fruits of the research.[952] Even if the Panel were to consider these benchmarks, the United States submits that the NASA procurement contracts

[943] European Union's first written submission, paras. 182-184; second written submission, paras. 272-274.
[944] Declaration of R. A. Razgaitis, Sr., Ph.D., CLP, 23 October 2013 (Razgaitis Declaration), (Exhibit EU-1262) (BCI).
[945] European Union's second written submission, para. 314.
[946] European Union's second written submission, para. 314.
[947] United States' second written submission, paras. 177, 179, and 194.
[948] United States' second written submission, para. 177.
[949] United States' second written submission, para. 178.
[950] United States' first written submission, para. 236.
[951] United States' first written submission, para. 238.
[952] United States' second written submission, para. 180. See also United States' first written submission, paras. 95, 96, and 236.

and agreements and DOD assistance instruments subject to the Boeing Patent Licence Agreements have eliminated the gap with the benchmark contracts evaluated by the Appellate Body in the original proceeding, and thus, the modified NASA procurement contracts and agreements and DOD assistance instruments are no more favourable to Boeing as commissioned party than commercial transactions.

8.18. The United States argues that the analysis of benefit should start with benchmarks reflecting the types of collaborative relationships that characterize the pre-2007 NASA procurement contracts and DOD assistance instruments, with particular emphasis on joint ventures.[953] One such joint venture created to conduct research with results of interest to both parties is the arrangement in Contract D examined by the Appellate Body in the original proceeding.[954] The United States rejects the suggestion by the European Union that Contract D is an "outlier" and unrepresentative of prevailing market practices regarding arm's-length collaborative R&D arrangements.

8.19. The United States argues that the amendments to the pre-2007 NASA procurement contracts and DOD assistance instruments effected by NASA- and DOD-Boeing Patent Licence Agreements bring the allocation of intellectual property rights under those contracts and instruments into line with the corresponding terms in Contract D. **[***]**.[955] The only salient difference between the NASA procurement contracts and DOD assistance instruments (as amended by the applicable Boeing Patent Licence Agreement) and Contract D is that **[***]**.[956]

8.20. The United States argues in addition that the allocation of intellectual property rights under the pre-2007 NASA procurement contracts and DOD assistance instruments, as amended by the Boeing Patent Licence Agreements, is consistent also with Contracts A, B, and C considered by the Appellate Body, as well as with the intellectual property allocation terms in the 2013 NIAR standard contract terms.[957] **[***]**.[958] The United States contends that the European Union incorrectly states that NASA and DOD do not obtain ownership rights over inventions developed under NASA procurement contracts or DOD assistance instruments. According to the United States, under U.S. law, NASA and DOD obtain ownership over inventions made solely by their employees during work under a procurement contract or assistance instrument and joint ownership over inventions jointly made with Boeing employees.[959] **[***]**.

8.21. The United States submits that statements regarding the allocation of intellectual property rights under Airbus contracts are irrelevant to transactions that entail a joint venture arrangement, and instead reflect transactions where one party walks away with all of the fruits of the research.[960] Moreover, a 2002 contract between Boeing and NIAR, submitted as evidence in the original proceeding, is irrelevant as a benchmark, as it represents "a deviation from NIAR policy", whereas NIAR's current standard contract terms confirm that Contract D is an example of a

[953] United States' first written submission, paras. 242 and 280.
[954] United States' first written submission, paras. 244 and 282.
[955] United States' first written submission, paras. 249 and 287. The "field of use" refers to the range of activities within which the commissioning party can practice its non-exclusive, royalty-free licence to use the research results. The United States argues that **[***]** (United States' second written submission, paras. 189 and 190).
[956] United States' first written submission, paras. 251 and 289.
[957] United States' second written submission, paras. 195-202 (referring to Statement of J. Tomblin, Executive Director of the National Institute for Aviation Research, (Exhibit USA-263)). Mr Tomblin explains at paragraph 1 of this statement that NIAR is the largest university aviation R&D institution in the United States, which provides research, design, testing and certification services to the aviation manufacturing agencies, government agencies, educational entities, and other entities. The United States submits that NIAR's intellectual property allocation terms reflect the prevailing intellectual property allocation terms of collaborative R&D contracts with the largest aviation R&D institution in the United States. (United States' second written submission, para. 200).
[958] See also United States' response to Panel question No. 67, paras. 20-22, where the United States takes note of Mr Razgaitis' view that the most prevalent allocation of intellectual property rights is for each party to own any patents for inventions developed solely by its employees, and to own jointly patents for inventions developed jointly by the commissioning party and commissioned party. The United States says that by this standard, Boeing's ownership of patents for inventions invented by its employees while working under DOD and NASA procurement contracts is consistent with commercial practice in the United States.
[959] United States' second written submission, para. 195 (referring to European Union's second written submission, paras. 293 and 500); response to Panel question No. 85, paras. 117-124 and 138-143.
[960] United States' first written submission, para. 239.

market-based transaction.[961] In addition, the United States argues that articles cited by the European Union on intellectual property rights and stem cell research, and on collaborative research and the importance of exclusivity of ownership over inventions, as well as a WIPO training course advising companies to acquire rights over intellectual property when they outsource R&D, are not proper benchmarks for the type of joint ventures described by the Appellate Body in its assessment of the NASA procurement contracts and DOD assistance instruments in the original proceeding.[962]

8.22. The United States supports these arguments with the opinion of its technology licensing expert, Louis Berneman, who opines that the pre-2007 NASA procurement contracts and DOD assistance instruments, as amended by the applicable Boeing Patent Licence Agreement, are consistent with prevailing market practices for collaborative R&D arrangements, such as the arrangement in Contract D considered by the Appellate Body in the original proceeding.[963] The United States submits that evidence of "prevailing market practices" submitted by Mr Berneman, such as sample contracts drawn from the pharmaceutical and biomedical research sectors, confirms that Contract D exemplifies but one type of private, market-based transaction for collaborative research efforts, and that there are otherwise a "range of commercial market outcomes" that can be "fair and reasonable", including those that are different from the amended NASA and DOD contracts and agreements.[964] Mr Berneman additionally emphasizes that the pre-2007 NASA procurement contracts and DOD assistance instruments were open to bidding by multiple contractors, and as a result are priced consistently with commercial practices. Mr Berneman also explains that the absence of compensation for commercialization of technologies under NASA procurement contracts and DOD assistance instruments is consistent with market practice, considering the difficulties faced in estimating potential returns from early-stage technologies.[965]

8.23. Finally, in respect of Space Act Agreements, the United States argues that the European Union fails to identify any relevant benchmark to explain how Space Act Agreements achieve an equilibrium that is more favourable to Boeing than comparable commercial transactions. The United States argues that the European Union fails to take into account that Space Act Agreements do not involve any payments by the U.S. Government and sometimes involve payments by Boeing to NASA, as well as the fact that the intellectual property terms of Space Act Agreements are not the same as those under the NASA procurement contracts. Accordingly, there is no basis for the European Union's argument that Space Act Agreements provide a benefit for the same reason as NASA procurement contracts and cooperative agreements. As Boeing contributes its own resources under Space Act Agreements, without receiving any funding from NASA, the United States contends that there is a relationship between the level of patent rights and the level of contribution to the research effort. Accordingly, a separate comparison with the relevant benchmark is necessary in order to determine whether Space Act Agreements confer a benefit.[966]

8.24. Brazil does not consider that the SCM Agreement imposes any particular method for determining whether a benefit has been conferred, but provides general guidance in Article 14 precisely to enable the inevitable case-by-case approach.[967]

8.25. Japan submits that the panel in *Japan – DRAMs* identified two potential approaches to assessing the existence of benefit. Under one approach, a panel may seek to determine the

[961] United States' first written submission, paras. 240 and 241; second written submission, paras. 183 and 197-202.

[962] United States' second written submission, para. 184.

[963] Declaration of L. P. Berneman, Ed D, CLP, RTTP, 22 August 2013 (Berneman Declaration), (Exhibit USA-322) (BCI); and United States' second written submission, paras. 179 and 204-208.

[964] United States' second written submission, paras. 179 and 204-208. The United States considers that the evidence of commercial collaborative R&D arrangements before the Panel shows that, except of the issue of ownership of patent rights "where NASA and DOD contracts mirror the most prevalent commercial practice", there is no "standard" division of intellectual property rights. Rather, parties to commercial research contracts delineate patent rights in a variety of ways to suit their interests and objectives. The only "normal market practice" is for the parties to pay for the intellectual property rights that they require, and not to pay for the rights they do not require. (United States' response to Panel question No. 67, para. 28).

[965] United States' second written submission, para. 207.

[966] United States' first written submission, para. 257; second written submission, paras. 239-244.

[967] Brazil's third-party response to Panel question No. 7.

existence of a benefit based on available evidence demonstrating the terms that the market would have offered, and compare those terms with the terms of the financial contribution in question. As a second approach, a panel may examine whether the financial contribution was provided on the basis of commercial considerations. Under this approach, evidence of reliance on non-commercial considerations would indicate terms more favourable than those available on the market.[968] Japan considers that price-discovery mechanisms, such as the use of competitive bidding or negotiated prices, may not always prove helpful in determining the terms that would be available to the recipient in the market, such as in situations in which government procurement involves monopoly suppliers or suppliers exercising significant market power.[969]

8.26. Korea argues that ordinarily the identification of a benefit under Articles 1.1(b) and 14 of the SCM Agreement is measured by comparing: (a) the cost incurred by the recipient to obtain the financing with the government support; and (b) the cost the recipient would have incurred to obtain equivalent financing from the market, if there had been no government support. Because the subsidy consists of a financial contribution, the benefit of a subsidy is necessarily equal to a reduction of the financing costs caused by the government action.[970] While Korea considers that it might be theoretically possible to define benefit in a different manner, based on the returns to the recipient from the use of the financial contribution, such an approach does not appear to have any textual support in the SCM Agreement or in past decisions by panels and the Appellate Body. The European Union's "multiple benefit" theory appears to be based on this faulty approach to benefit by looking at what the recipient would have done with the governmental financial contribution. This approach appears to require that financial contributions that are "wasted" confer no benefit, while financial contributions that happen to generate outsized returns confer a benefit that is multiple times the amount of the actual financial contribution.[971] Korea suggests that, before accepting such a theory, the Panel should at a minimum require that its proponents demonstrate how it would be consistent with the relevant provisions of the SCM Agreement.

8.1.3 Evaluation by the Panel

8.27. The issue before the Panel is whether the modifications to the pre-2007 NASA procurement contracts[972] and DOD assistance instruments the subject of the DSB recommendations and rulings, effected by the Boeing Patent Licence Agreements, have failed to remove the benefit conferred by the financial contributions provided through these contracts and instruments, and whether the United States has thus failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement.

8.28. In the original proceeding, in the context of completing the analysis of whether the provision of funding and other support to Boeing under NASA procurement contracts and DOD assistance instruments at issue conferred a benefit, the Appellate Body treated six contracts in which Boeing had commissioned universities or educational research institutes to conduct R&D, as though they were market benchmarks.[973] Those contracts had been submitted by the United States as BCI and were designated as Contracts A through F.[974] Based on a comparison of the allocation of the ownership of inventions (and thus rights to obtain patents) and related licence rights to NASA or DOD as commissioning party, and to Boeing as commissioned party, in the NASA procurement contracts and DOD assistance instruments, with the corresponding allocations to commissioning and commissioned parties under Contracts A through F, the Appellate Body

[968] Japan's third-party response to Panel question No. 6, paras. 17-22.
[969] Japan's third-party response to Panel question No. 7, para. 23
[970] Korea's third-party submission, para. 22.
[971] Korea's third-party submission, paras. 23 and 24.
[972] The United States has included three cooperative agreements (designated by the identifiers NNC10AA02A, NNC10AA03A, and NNL07AA03A) in annex A to its Compliance Communication, in addition to identifying NASA procurement contracts. These cooperative agreements are also identified in the NASA-Boeing Patent Licence Agreement. Although the panel and Appellate Body both acknowledged that certain of the transactions under the challenged programmes took the form of cooperative agreements, neither refer to cooperative agreements in their specific findings regarding whether the NASA aeronautics R&D measures are subsidies.
[973] In the original proceeding, the parties had agreed before the panel that, with respect to the financial contribution that Boeing had received through the NASA procurement contracts and DOD assistance instruments, the "relevant market benchmark would be the terms of a commercial transaction in which one entity pays another entity to conduct R&D". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1039 and 7.1184).
[974] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fns 1364-1367 and 1374.

concluded that the NASA procurement contracts and DOD assistance instruments conferred a benefit.[975]

8.29. The United States argues that the grant of a commercial use licence to NASA and DOD under the Boeing Patent Licence Agreements concluded in September 2012 modifies the allocation of rights granted to NASA and DOD under the pre-2007 NASA procurement contracts and DOD assistance instruments, respectively, in such a way that they are now consistent with prevailing market practices for collaborative R&D arrangements and no longer confer a benefit.

8.30. Given that this is a compliance proceeding, and that the United States' compliance actions are based on the Appellate Body's benefit determinations in the original proceeding in respect of those pre-2007 NASA procurement contracts and DOD assistance instruments, we will evaluate whether the commercial use licence in respect of Boeing-owned patents granted to NASA pursuant to the NASA-Boeing Patent Licence Agreement, and to DOD pursuant to the DOD-Boeing Patent Licence Agreement, results in an allocation of patent rights and related licence rights under the procurement contracts and assistance instruments to which these Agreements apply that is consistent with corresponding allocations in market-based R&D collaborative agreements.

8.31. First, we recall how rights in respect of patents (in terms of ownership of inventions and licences to practice any resulting patents), as well as data rights, are generally allocated under NASA procurement contracts and DOD assistance instruments. Given that the legal allocation of rights in respect of patents arising from work performed under DOD procurement contracts is the same as for DOD assistance instruments, we include the DOD procurement contracts in the general summary below for the sake of completeness, although we do not evaluate whether these measures involve specific subsidies until Section 8.2.3.5 of this Report.

8.1.3.1 The allocation of intellectual property rights and data rights under NASA procurement contracts and under DOD assistance instruments and procurement contracts

8.32. In the original proceeding the panel observed that the allocation of patents is uniform across all U.S. Government R&D contracts and agreements.[976] Prior to 1980, the United States had a general policy of taking all rights to patents over inventions produced by contractors under federally-funded R&D contracts and granting nonexclusive licenses to any applicant, including the contractor, that wished to use the subject invention.[977] In 1980, the U.S. Government changed this policy and began granting certain categories of government contractors ownership of any inventions made by the contractor under federally-funded R&D contracts. The U.S. Government would receive a "government use" license which enabled it to use the subject invention without having to pay the contractor any royalties.[978] This revised policy, implemented through the Bayh-Dole Act, originally applied only to non-profit organizations and small business firms. It was subsequently extended to accord the same treatment to all government contractors that, regardless of size and profit/non-profit status, engaged in work under federally-funded R&D contracts.[979]

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[975] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 654-662.
[976] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1149.
[977] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1277 et seq.
[978] The Bayh-Dole Act implemented this policy in 1980. It is codified in Patent Rights in Inventions Made with Federal Assistance. (*United States Code*, chapter 35, sections 200-212, (Exhibit EU-220)). Under the Bayh-Dole Act, a university, other non-profit organization or small business is entitled to retain title to any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement. (Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220), sections 201(c), (e), and (i), and 202(a)). A "funding agreement" includes any contract, grant or cooperative agreement entered into between any federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental or research work funded in whole or in part by the U.S. federal government. (Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220), section 201(b)).
[979] A 1983 Presidential Memorandum instructed all executive branch agencies to extend Bayh-Dole treatment to all contractors to the extent permitted by law. (U.S. White House, Memorandum to the Heads of Executive Departments and Agencies on Government Patent Policy, 18 February 1983 (Memorandum on Government Patent Policy), (Exhibit EU-1062)). A 1987 Executive Order subsequently incorporated the 1983 policy. (Executive Order 12591, "Facilitating access to science and technology", 10 April 1987, (Exhibit EU-238)). The Bayh-Dole Act and associated legislative instruments and implementing regulations also require

8.33. As the original panel explained, pursuant to the National Aeronautics and Space Act of 1958 (Space Act), any invention that is patentable made pursuant to a contract with NASA shall be issued to the U.S. Government, unless this right is waived by NASA. To comply with the Bayh-Dole Act and subsequent related policies, NASA established regulations under which it generally waives its rights to inventions that are developed pursuant to NASA-funded research to large companies.[980] As in the case of patents retained by contractors pursuant to U.S. patent law, patent rights waived by NASA pursuant to NASA-specific regulations are not unlimited, as NASA retains the right to use the patented technology for government purposes.[981] The United States has indicated that NASA has granted such waivers "essentially every time a contractor requested to retain title to an invention" by its employees working under a NASA contact.[982]

8.34. As a result of the foregoing, where NASA or DOD employees and Boeing employees work together under a NASA procurement contract[983] or under a DOD assistance instrument or procurement contract on a research effort that results in an invention, the allocation of ownership of patent rights is as follows:

a. Where a NASA (or DOD) employee makes an invention in the course of work under a NASA procurement contract (or under a DOD assistance instrument or procurement contract), the U.S. Government will have sole ownership of the patent. This is because the U.S. Government employee who made the invention would be recognized as the inventor, and his or her interest in the patent that would issue in that employee's name would pass to the U.S. Government.[984]

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that federal agencies include certain standard clauses in all such funding agreements. These clauses require: (a) the contractor to notify the U.S. Government of each invention to which it intends to retain title, and to file a patent application within the time provided by statute, as well as an authorization for the government to receive title if the contractor fails to follow those procedures; (b) the provision to the U.S. Government of a "nonexclusive, non-transferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world"; and (c) an authorization for the U.S. Government to file a patent application on behalf of the inventor anywhere in the world that the contractor fails to do so.

[980] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1287-7.1290 (referring to *United States Code*, chapter 42, section 2457(a); and *United States Code of Federal Regulations*, chapter 14, section 1245.100 et seq.). NASA regulations require that procurement contracts contain a standardized clause regarding retention of patent rights upon grant of a waiver request in contracts with medium and large contractors. (National Aeronautics and Space Administration, *United States Code of Federal Regulations*, chapter 48, sections 1852.227-70, (Exhibit USA-468), and 1852.227-71, (Exhibit USA-472)). The regulations do not apply to small business firms or non-profit organizations, which are governed by the U.S. patent law provisions on government transfer of patents. (See Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220)).

[981] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2914. See National and Commercial Space Programs, *United States Code*, Title 51, chapter 201, section 20135, (Exhibit EU-1038), section 20135(f). This section provides in relevant part that NASA "may waive all or any part of the rights of the United States … with respect to any invention or class of inventions made or which may be made by an person or class of persons in the performance of any work required by any contract … if {NASA} determines that the interests of the United States will be served thereby". This section explains that "{e}ach waiver made with respect to any invention shall be subject to the reservation … of an irrevocable, nonexclusive, non-transferable, royalty-free license for the practice of such invention throughout the world by or on behalf of the United States or any foreign government pursuant to any treaty or agreement with the United States". See also *United States Code of Federal Regulations*, chapter 14, sections 1245.103, (Exhibit USA-470), and 1245.107, (Exhibit USA-471).

[982] United States' response to Panel question No. 85, para. 126. The United States notes several occasions on which NASA denied or partially denied a small number of waiver applications. (See United States' response to Panel question No. 85, fn 178).

[983] The allocation of patent rights under NASA cooperative agreements is the same as the allocation of patent rights under NASA procurement contracts.

[984] *United States Code of Federal Regulations*, chapter 37, section 501.6, (Exhibit USA-310) provides that:

> (1) The Government shall obtain, except as herein otherwise provided, the entire right, title and interest in and to any invention made by any Government employee:
> (i) During working hours, or
> (ii) With a contribution by the Government of facilities, equipment, materials, funds or information, or of time or services of other Government employees on official duty, or
> (iii) Which bears a direct relation to or is made in consequence of the official duties of the inventor.

b. Where a Boeing employee makes an invention in the course of work under a NASA procurement contract (or under a DOD assistance instrument or procurement contract), Boeing has title to the invention and thus the right to ownership of the patent.[985] This results from the application of the U.S. federal laws and regulations and NASA-specific waiver provisions discussed above. The U.S. Government receives a government use license in Boeing inventions made in the performance of a NASA procurement contract or a DOD assistance instrument and procurement contract.[986]

c. Where a NASA employee (or DOD employee) and a Boeing employee jointly make an invention in the course of work under a NASA procurement contract (or under a DOD assistance instrument or procurement contract), the resulting patent would issue jointly in the names of the NASA (or DOD) and Boeing employees, and by operation of the U.S. federal laws and regulations and NASA-specific waiver provisions discussed above, NASA (or DOD) and Boeing would each own an undivided share in rights under the patent.[987]

8.35. As explained by the original panel and highlighted above, under the Bayh-Dole Act, its related legislative instruments and NASA-specific regulations, the U.S. Government's rights to patents in respect of inventions developed by Boeing employees in the course of work under a U.S. Government R&D contract or agreement consist of a "nonexclusive, non-transferable, irrevocable paid-up licence to practice or have practiced for or on behalf of the United States any subject invention throughout the world".[988] This government use licence in practice provides the U.S. Government with the following rights:

a. to use the invention without payment of royalties or other fees, in all future contracts between Boeing and any agency of the U.S. Government anywhere in the world; and

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[985] *United States Code of Federal Regulations*, chapter 14, section 1245.107, (Exhibit USA-471). As Razgaitis explains, in the United States, patent ownership generally vests with the party whose employees are its inventors. (Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 24).

[986] See National and Commercial Space Programs, *United States Code*, Title 51, chapter 201, section 20135, (Exhibit EU-1038), section 20135(f); and *United States Code of Federal Regulations*, chapter 14, section 1245.107, (Exhibit USA-471). The original panel explained that U.S. Government possesses certain "march-in" rights, which enable the relevant federal agency to compel the contractor in certain circumstances to grant a license to applicants on terms that are reasonable under the circumstances, or to grant the license itself. The panel explained that no federal entity has ever exercised these march-in rights. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1286). See also *United States Code of Federal Regulations*, chapter 14, section 1245.107, (Exhibit USA-471), section 1245.107(b); and United States' response to Panel question No. 85, para. 127.

[987] In the case of an invention jointly made by a NASA employee and a Boeing employee in the course of work under a NASA procurement contract, the resulting patent would issue in the name of the NASA employee, and by operation of 37 CFR § 501.6, the U.S. Government would have title to the patent. The patent would also list the Boeing employee as one of the inventors and the U.S. Government would take title to the patent under section 305(a) of the Space Act. However, Boeing would, pursuant to section 305(g) of the Space Act, request the NASA Administrator to waive title acquired by the Administrator under section 305(g) of the Space Act. Accordingly, where a waiver is granted pursuant to the NASA waiver provisions, the U.S. Government (by virtue of the operation of the United States Code of Federal Regulations, chapter 37, section 501.6), and Boeing (by virtue of the operation of the NASA waiver provisions), jointly take title to the invention. (See *United States Code of Federal Regulations*, chapter 37, section 501.6, (Exhibit USA-310); Inventions Patentable, *United States Code*, chapter 35, section 101, (Exhibit USA-466); Inventors, *United States Code*, chapter 35, section 116, (Exhibit USA-467); Space Act section 305; and National and Commercial Space Programs, *United States Code*, Title 51, chapter 201, section 20135,(Exhibit EU-1038)). In the case of an invention jointly made by a DOD employee and a Boeing employee in the course of work under a DOD assistance instrument or procurement contract, the resulting patent would issue in the name of the DOD employee, and by operation of the United States Code of Federal Regulations, chapter 37, section 501.6, the U.S. Government would have title to the patent. The patent would also list the Boeing employee as one of the inventors and by virtue of the Bayh-Dole Act and associated legislative instruments and implementing regulations, ownership of the patent would also vest in Boeing. (See *United States Code of Federal Regulations*, chapter 37, section 501.6, (Exhibit USA-310); Inventions Patentable, *United States Code*, chapter 35, section 101, (Exhibit USA-466); Inventors, *United States Code*, chapter 35, section 116, (Exhibit USA-467); Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220); Memorandum on Government Patent Policy, (Exhibit EU-1062); and Executive Order 12591, "Facilitating access to science and technology", 10 April 1987, (Exhibit EU-238)).

[988] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1286 and fn 2914. See also *United States Code of Federal Regulations*, chapter 14, section 1245.103, (Exhibit USA-470), section 1245.103(a).

b. to authorize other contractors to use the invention, without an obligation to pay royalties or additional fees, in all future contracts between that contractor and any agency of the U.S. Government anywhere in the world.[989]

8.36. As the panel explained in the original proceeding, contractors own all technical data produced with U.S. Government funding, as a general rule, and may use data for their own commercial purposes. In exchange, the U.S. Government receives a royalty-free license to use data produced in the performance of research.[990] In cases of R&D contracts funded solely by the U.S. Government (e.g. NASA procurement contracts and DOD procurement contracts) the U.S. Government receives "unlimited rights data", which enables it to use data for its own purposes, both inside and outside government. Where a contractor also contributes funding toward research (e.g. DOD assistance instruments), the U.S. Government may agree to forego certain rights to data, i.e. the U.S. Government obtains only "limited rights" in data. These limited rights may apply to data that embody trade secrets or are commercial or financial and confidential or privileged, to the extent such data pertains to items, components or processes developed at private expense. Where the U.S. Government acquires "limited rights" data, it may use data for its own internal purposes, but may not disseminate data outside of government without express consent.[991]

8.1.3.2 The commercial use licence granted under the Boeing Patent Licence Agreements

8.37. The NASA-Boeing Patent Licence Agreement is dated effective as of 23 September 2012. It is expressed to apply to "large civil aircraft-related aeronautics research and development contracts and agreements" previously entered into between NASA and Boeing, as listed in Attachment A to the NASA-Boeing Patent Licence Agreement.[992] Attachment A also sets forth the U.S. patents covering inventions made under the listed NASA "contracts and agreements" in which Boeing has title and NASA has a non-exclusive government use licence. Under the NASA-Boeing Patent Licence Agreement, Boeing as licensor grants to NASA as licensee:

> {A}n irrevocable, non-exclusive, non-transferable, royalty-free license under the Patent Rights to use, make, offer for sale, sell, and import each Subject Invention for commercial purposes, without the right to: (A) sublicense this right; (B) exercise this right in a commercial venture of any type with a third party; or (C) have the Subject Invention made or sold by a third party for a commercial purpose.[993]

8.38. The "Subject Invention" covered by the above-referenced grant of additional licence rights is expressed as:

> {A}ny Invention, present or future, conceived or first actually reduced to practice by Boeing in the performance of work under one of the Agreements, and for which a waiver of the rights of the Government of the United States was, or will be, granted in accordance with 14 CFR Section 1245, Subpart 1.[994]

8.39. The DOD-Boeing Patent Licence Agreement is dated 21 September 2012. It is expressed to apply to assistance instruments previously entered into between DOD and Boeing, as listed in Attachment A to the DOD-Boeing Patent Licence Agreement.[995] Attachment A also sets forth the

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[989] Third-party contractors are thereby provided with a licence defence against an infringement proceeding covering the contractor's use of the patented invention in the performance of a contract for the U.S. Government.

[990] This includes data of a scientific or technical nature. See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1296-7.1299. See also fn 1173 below.

[991] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1300 and 7.1301.

[992] NASA-Boeing Patent Licence Agreement, (Exhibit EU-251) (BCI), section 1.a. Section 7.i. of the NASA-Boeing Patent Licence Agreement permits NASA and Boeing by mutual agreement to modify Attachment A to include other agreements entered into by the parties prior to 23 September 2012 that had been inadvertently omitted from Attachment A.

[993] NASA-Boeing Patent Licence Agreement, (Exhibit EU-251) (BCI), section 2.a.

[994] NASA-Boeing Patent Licence Agreement, (Exhibit EU-251) (BCI), section 1.d.

[995] In response to a question from the Panel, the United States confirms that the DOD-Boeing Patent Licence Agreement applies only to the agreements listed in Attachment A thereto and does not affect the allocation of intellectual property rights in respect of any other DOD assistance instruments.

U.S. patents covering inventions made under the listed DOD assistance instruments in which Boeing has title, and DOD has a non-exclusive government use licence. Under the DOD-Boeing Patent Licence Agreement, Boeing as licensor grants to DOD as licensee:

> {A}n irrevocable, non-exclusive, non-transferable, paid-up licence under the Licensed Intellectual Property to use, make, offer for sale, sell, and import each Subject Invention Made under the Agreements for commercial purposes, without the right to: (i) sublicense this right; (ii) exercise this right in a commercial venture of any type with a third party; or (iii) have the Subject Invention made or sold by a third party for a commercial purpose.[996]

8.40. The "Licensed Intellectual Property" covered by the above-referenced grant of additional licence rights is expressed as:

> All Subject Inventions and all U.S. patents and/or patent applications that cover or may cover the Subject Inventions, past and future, Made under an Agreement listed in Attachment A, including the U.S. patents or patent applications listed in Attachment A to this License, and any re-examined or reissued version of same, and including any patent issuing from any continuation, continuation-in-part or divisional application claiming priority from the application that issued as such U.S. patent or patent application, and any foreign counterpart … .[997]

8.41. Thus, the Boeing Patent Licence Agreements grant to NASA and DOD additional rights beyond the government use licence in respect of Boeing inventions made under the NASA procurement contracts and DOD assistance instruments listed in the annexes to the Agreements. The non-exclusive, commercial use licence granted to each of NASA and DOD does not permit NASA or DOD to sublicense this right, exercise this right in a commercial venture with a third party, or have the subject invention made or sold by a third party for a commercial purpose.

8.42. As a result of the commercial use licence granted to each of NASA and DOD in respect of Boeing-owned patents, Boeing's rights to exploit patents developed by its employees in the course of work under a relevant NASA procurement contract or DOD assistance instrument are subject not just to NASA/DOD's government use rights[998], but also to NASA/DOD's commercial use rights. NASA/DOD's rights under both the government use licence and the commercial use licence are non-exclusive, and NASA/DOD as licensee is relieved of the obligation to pay royalties to the patent owner in relation to the government uses and commercial uses, respectively. However, Boeing retains the right to grant licences to third parties to practice its patents and to receive royalties therefrom.

8.43. The parties have each submitted to the Panel a number of R&D contracts which they consider serve as relevant market benchmarks for the allocation of rights to own and use patents in collaborative R&D arrangements. These private R&D agreements include Contracts A through F, which were also submitted in the original proceeding. We review and explain the rights granted to the commissioning and commissioned parties in respect of "project" intellectual property under those agreements, in light of their evaluations by the parties' respective technology licensing experts, in a BCI Appendix to this Report.[999]

(United States' response to Panel question No. 87, para. 158). Section 4.e. of the DOD-Boeing Patent Licence Agreement permits DOD and Boeing by mutual agreement to modify Attachment A to include other funding instruments or other transaction agreements entered into by the parties prior to 23 September 2012 that had been inadvertently omitted from Attachment A.

[996] DOD-Boeing Patent Licence Agreement, (Exhibit EU-401) (BCI), article 1.a. (emphasis original)

[997] DOD-Boeing Patent Licence Agreement, (Exhibit EU-401) (BCI), article 2.a. (emphasis original)

[998] See para. 8.35 above.

[999] See Appendix 1. Our evaluation in the BCI Appendix covers: (a) the six BCI contracts between Boeing as commissioning party and research institutes and for-profit entities as commissioned parties that were submitted in the original proceeding (designated by the Appellate Body as Contracts A through F); (b) 18 private commercial collaborative R&D agreements; (c) two private collaborative agreements in which the commissioning party is not a commercial actor but a for-profit foundation; (d) the standard terms and conditions of the Wichita State University National Institute for Aviation Research (NIAR); and (e) a research and technology framework agreement between Airbus SAS and an unnamed university in which Airbus is the commissioning party.

8.44. As we explain in the BCI Appendix[1000], **[***[1001]]**.

8.45. Although the Boeing Patent Licence Agreements grant NASA and DOD limited commercial use licences in respect of Boeing-owned patents obtained in the course of work under a relevant NASA procurement contract or DOD assistance instrument (which is in addition to the government use licence NASA and DOD already possess by virtue of the Bayh-Dole Act and associated legislative instruments and implementing regulations and NASA-specific waiver provisions discussed above), the fundamental balance remains one in which NASA and DOD lack the right to obtain an *exclusive* licence to practice Boeing-owned patents. Boeing's ability to commercially exploit its patents is not contingent on NASA's or DOD's election not to exercise exclusive rights to licence those patents for itself. In this respect, the allocation of patent rights and related licence rights under the amended procurement contracts and assistance instruments remains more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel.

8.46. Even if we were to compare the rights granted to NASA and DOD in respect of inventions resulting from work performed under the NASA procurement contracts and DOD assistance instruments, as modified by the applicable Boeing Patent Licence Agreements, with the rights granted to commissioning parties with respect to inventions as the result of work under Contract D, we would conclude that the allocation under the former grouping is more favourable to Boeing as commissioned party than the allocation to the commissioned party under Contract D, based on the differences in the scope of the commercial use licences granted to the commissioning parties under the respective instruments.

8.47. The commercial use licence granted to NASA and DOD by the Boeing Patent Licence Agreements **[***]**. It appears to us that the commissioning party under Contract D is granted more extensive rights to use the commissioned party's patents than NASA and DOD are granted under the modified NASA procurement contracts and DOD assistance instruments, notwithstanding the grant of the limited commercial use licence to NASA and DOD by virtue of the Boeing Patent Licence Agreements. As a corollary, the rights in respect of patents retained by the commissioned party under Contract D are less extensive in a commercial sense than those retained by Boeing under the modified NASA procurement contracts and the DOD assistance instruments.

8.48. The United States argues that, in granting the commercial use licence to NASA and DOD, Boeing has effectively assumed the risk that U.S. Government policy may change in such a way as would permit DOD and NASA to produce commercial aircraft in competition with Boeing.[1002] We do not discount the possibility that, in particular contexts, the assumption of the risk of a future occurrence could have a meaningful impact on the balance of rights between parties. However, in the present context, we consider the possibility that NASA or DOD would at some time in the near future decide to embark on the production of large civil aircraft in competition with Boeing to be quite remote, and we therefore do not consider that Boeing's assumption of this theoretical risk has any meaningful practical impact on its rights under the NASA procurement contracts and DOD assistance instruments Moreover, the United States acknowledges that it does not engage in "purely commercial businesses" and does not plan to do so.[1003]

8.49. In conclusion, we do not consider that the grant to NASA and DOD of commercial use rights in respect of Boeing-owned patents under the pre-2007 NASA procurement contracts and DOD assistance instruments, effected by the Boeing Patent Licence Agreements, brings those contracts and instruments into line with prevailing market practices for collaborative R&D arrangements in such a way as to remove the benefit that the Appellate Body had found was conferred through the pre-2007 contracts and instruments in the original proceeding.

8.50. **We therefore find that the European Union has established that the amendments made by the United States through the Boeing Patent Licence Agreements to the terms of the pre-2007 NASA procurement contracts and DOD assistance instruments that were**

[1000] Appendix 1, para. 49.

[1001] See Razgaitis Declaration, (Exhibit EU-1262) (BCI), paras. 81 and 117; and Supplemental Declaration of R. A. Razgaitis, Sr., Ph.D., CLP, 18 December 2013 (First Supplemental Razgaitis Declaration), (Exhibit EU-1327) (BCI), para. 17.

[1002] United States' first written submission, para. 281.

[1003] United States' response to Panel question No. 87, para. 15 and fn 8.

the subject of the DSB recommendations and rulings in the original proceeding do not constitute a withdrawal of the subsidy, within the meaning of Article 7.8 of the SCM Agreement.

8.1.3.3 NASA Space Act Agreements at issue in the original proceeding

8.51. It is not in dispute that the terms of pre-2007 Space Act Agreements have not been modified through the NASA-Boeing Patent Licence Agreement, nor has the United States argued that it has taken action with respect to the pre-2007 Space Act Agreements that were before the original panel. The main issue before the Panel in this compliance proceeding is whether this is therefore sufficient to conclude that the United States has failed to withdraw the subsidy with respect to the pre-2007 Space Act Agreements.

8.52. Notwithstanding the European Union's view that the original panel finding of benefit should be sustained in respect of pre-2007 Space Act Agreements, we do not consider it appropriate to treat the fact that the United States has not taken any action with respect to the pre-2007 Space Act Agreements as sufficient to conclude that the United States has failed to withdraw the subsidy with respect to the pre-2007 Space Act Agreements. We recall, in the original proceeding, the United States appealed the finding of the panel that payments and access to NASA facilities, equipment, and employees provided to Boeing through "research contracts and agreements at issue" constituted financial contributions that conferred a benefit.[1004] When addressing the issue of benefit in relation to Space Act Agreements on appeal, the Appellate Body expressed the view that the United States' appeal of the panel's benefit finding was "merely consequential"[1005] to its appeal of the panel's finding of financial contribution. For this reason, the Appellate Body limited its review of the panel's finding of benefit relating to the NASA aeronautics R&D measures to the NASA procurement contracts at issue and did not review the panel's finding of benefit related to NASA Space Act Agreements. The Appellate Body expressed various reservations concerning the panel's assessment of benefit related to the NASA procurement contracts and DOD assistance instruments, including with respect to the panel's consideration of the evidence on record.[1006] In circumstances in which the Appellate Body has overturned the benefit determination with respect to NASA procurement contracts which is the same benefit analysis that the panel had also applied with respect to Space Act Agreements, we do not consider it appropriate to simply rely on the panel's finding of benefit as applied to Space Act Agreements as a basis to conclude that the United States has failed to withdraw the subsidies. Therefore, in order to determine whether the United States has complied with its obligations under Article 7.8, we must first determine whether Space Act Agreements confer a benefit. In this regard, the principal question raised by the parties is whether the benefit analysis in respect of NASA procurement contracts and DOD assistance instruments is relevant, or whether Space Act Agreements are sufficiently distinct from those measures such that a different analysis would be required. If a different analysis is required, the

[1004] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, annex II, Notification of an Other Appeal by the United States, paras. 2 and 3. In its assessment of benefit in relation to the NASA measures, the original panel assessed pre-2007 NASA procurement contracts and Space Act Agreements together and concluded that the financial contributions provided to Boeing under its aeronautics R&D contracts and agreements with NASA confer a benefit, within the meaning of Article 1.1(b) of the SCM Agreement. The basis for the panel's reasoning was that "no commercial entity … acting pursuant to commercial considerations, would provide payments (and access to its facilities and personnel) to another commercial entity on the condition that the other entity perform R&D activities principally for the benefit and use of that other entity". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1039 and 7.1040).

[1005] The Appellate Body expressed the view that the United States "does not appeal the Panel's finding of financial contribution concerning the Space Act Agreements challenged by the European Communities", based on the fact that "the Panel noted that during the Panel proceedings the United States had 'accept{ed} that the provision of (access to) facilities, equipment, and employees provided to Boeing through the Space Act Agreements at issue constitutes a provision of goods or services, within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement'". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 1300 (referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.976)).

[1006] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 644-647. The Appellate Body also expressed reservations at the panel's use of a test for benefit that, like its test for whether the financial contributions at issue were purchases of services, revolved around the question of which party to the transaction derives the "principal benefit and use" from the research (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 641), and what it regarded as its reasoning regarding the behaviour that would be expected of a commercial actor, for which the panel had failed to provide an underlying economic rationale. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 642 and 643).

European Union has not provided evidence of relevant commercial benchmarks, and we would have no basis to conclude that Space Act Agreements confer a benefit.

8.53. The European Union's and United States' arguments as to whether the pre-2007 Space Act Agreements confer a benefit under Article 1.1(b) are the same as their respective arguments in relation to post-2006 Space Act Agreements. Accordingly, we will conduct an evaluation in Section 8.2.2.4.2.3 below of whether any financial contributions that have been provided to Boeing pursuant to the Space Act Agreements before us confer a benefit within the meaning of Article 1.1(b).

8.2 Whether the United States has failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement, by granting or maintaining certain post-2006 subsidies

8.2.1 Introduction

8.54. In this Section of the Report, we evaluate whether certain post-2006 subsidies allegedly granted or maintained by the United States demonstrate that the United States has failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement.[1007]

8.55. The European Union identifies seven categories of "post-2006 subsidies to Boeing's LCA Division", which it alleges the United States grants or maintains after the end of the implementation period as set forth below.[1008]

Table 1: Post-2006 Subsidies to Boeing's LCA Division

Category of Subsidy	Name of Subsidy Programme	Description
NASA Aeronautics R&D	Fundamental Aeronautics	NASA programme with subsonic and supersonic fixed-wing R&D projects
	Integrated Systems Research	NASA programme with Environmentally Responsible Aviation Project
	Aviation Safety	NASA programme with air vehicle-level, system-level, and environmental safety R&D projects
	Aeronautics Strategy & Management	NASA programme containing aeronautics R&D cross-programme support and Innovative Concepts for Aviation Project
	Aeronautics Test Program	NASA programme funding aeronautics ground and flight test infrastructure
	Strategic Capabilities Assets Program	NASA programme managing test, flight simulation, and computing infrastructure
	High-End Computing Program	NASA programme funding supercomputing resources used for aeronautics R&D
Federal Aviation Administration R&D	Continuous Lower Energy, Emissions, and Noise (CLEEN) Program	FAA programme funding research into near-term LCA energy-, emissions-, and noise-reducing technologies, as well as with demonstrator flights
Department of Defense Aeronautics R&D	Research, Development, Test & Evaluation (RDT&E) Program	DOD programme funding R&D into dual-use aircraft technologies

[1007] See Section 6.3 above for a discussion of the distinction between the European Union's arguments regarding the alleged failure of the United States to withdraw the subsidy in respect of certain pre-2007 NASA and DOD aeronautics R&D subsidies, on the one hand, and alleged post-2006 subsidies, on the other. Our evaluation of the post-2006 DOD aeronautics R&D measures in Section 8.2.3 also covers the pre-2007 DOD procurement contracts funded under the original 23 RDT&E program elements, which we have found to be within the scope of this proceeding in Section 7.3.2, given the common legal issues that arise for our evaluation of both the pre-2007 procurement contracts and the post-2006 procurement contracts.

[1008] European Union's first written submission, para. 56, figure 1.

Category of Subsidy	Name of Subsidy Programme		Description
FSC/ETI	FSC/ETI Legislation and Successor Acts		Federal income tax exemptions/exclusions on certain LCA produced and sold for use outside the United States
State of Kansas	Tax abatements provided through Wichita IRBs		Property and sales tax breaks for LCA component production facilities associated with industrial revenue bonds issued by the City of Wichita
State of Washington	State B&O Tax Rate Reduction		Washington State business & occupation (B&O) tax rate reduction for production and sales of LCA
	State B&O Tax Credit for Preproduction/Aerospace Product Development		Tax credit for LCA-related R&D
	State B&O Tax Credit for Property Taxes		Tax credit for property taxes on LCA production facilities
	State B&O Tax Credit for Leasehold Excise Taxes		Tax credit for leasehold excise taxes on LCA production facilities
	Sales and Use Tax Exemptions		Exemption from sales and use taxes on computer hardware, software, and peripherals used in developing LCA
	City of Everett B&O Tax Rate Reduction		City of Everett B&O tax rate reduction for Boeing LCA
	Joint Center for Aerospace Technology Innovation		State office advancing public university research for Boeing LCA
State of South Carolina	Project Gemini-Related Subsidies	Project Site Lease	Lease to the site of Boeing's South Carolina 787 production facilities at USD 1 per year
		Project Gemini Facilities & Infrastructure	Provision of facilities and infrastructure for Boeing's 787 final assembly facility at no cost
		Sales and Use Tax Exemptions	Exemptions for Boeing from sales and use taxes on aircraft fuel, construction materials, and computer equipment
		Income Allocation and Apportionment Agreement	Method of calculating Boeing's state income taxes that excludes revenue from the sales of LCA for export
		Project Gemini MCIP Job Tax Credits	Tax credits for hiring due to location in a multi-county industrial park
		Large Cargo Freighter Property Tax Exemption	Property tax exemption for Boeing's "Dreamlifter" Large Cargo Freighters
		Workforce Programme	State-run workforce hiring, training, and development programme for Boeing's 787 final assembly facility
		Boeing FILOT Agreement	Reduction of property taxes on Boeing's 787 final assembly facility under a Fee-in-Lieu-of Taxes (FILOT) Agreement
	Project Emerald-Related Subsidies	Project Emerald Facilities & Infrastructure	Provision of facilities and infrastructure for Boeing's fuselage fabrication and integration complex at no cost
		Project Emerald MCIP Job Tax Credits	Tax credits for hiring due to location in a multi-county industrial park
		Project Emerald FILOT Agreement	Reduction of property taxes on Boeing's 787 fuselage fabrication and integration complex under a FILOT Agreement

8.56. In our analysis of the European Union's allegations that the United States grants or maintains specific subsidies after the end of the implementation period, we address the various measures at issue in the following order:

a. NASA aeronautics R&D measures involving payments and access to government facilities, equipment, and employees provided to Boeing pursuant to procurement

contracts, cooperative agreements, and access to government facilities, equipment, and employees provided to Boeing pursuant to Space Act Agreements (Section 8.2.2);

b. DOD aeronautics R&D measures involving payments and access to government facilities provided to Boeing pursuant to pre-2007 DOD procurement contracts, and payments and access to government facilities, equipment, and employees provided to Boeing pursuant to post-2006 DOD procurement contracts and assistance instruments (Section 8.2.3);

c. FAA aeronautics R&D measure involving payments and allegedly involving access to government facilities, equipment, and employees to Boeing pursuant to the Boeing CLEEN Agreement (Section 8.2.4);

d. tax exemptions and exclusions under FSC/ETI legislation and successor legislation (Section 8.2.5);

e. tax abatements provided through IRBs issued by the City of Wichita (Section 8.2.6);

f. Washington state and local subsidies, including Washington State and City of Everett B&O tax rate reductions, Washington State B&O tax credits for preproduction/aerospace product development, property taxes and leasehold excise taxes, and Washington State sales and use tax exemptions for computer software, hardware, and peripherals (Section 8.2.7); and

g. South Carolina measures, comprising the packages of financial incentives under Project Gemini and Project Emerald (Section 8.2.8).

8.2.2 Post-2006 NASA aeronautics R&D measures

8.2.2.1 Introduction

8.57. In this Section of the Report, we evaluate the European Union's allegations that certain post-2006 NASA aeronautics R&D measures are specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement and that, by granting or maintaining these subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.[1009]

8.58. The European Union asserts in this proceeding that the actions identified by the United States in its Compliance Communication have not withdrawn the subsidy.[1010] NASA has continued to provide the same type of funding and support to Boeing as was provided to Boeing under the NASA aeronautics R&D programmes challenged in the original proceeding and has introduced additional subsidies pursuant to "successor and closely related programmes". The United States argues that it has withdrawn the subsidy through the actions identified in its Compliance Communication, including by terminating most of the aeronautics R&D programmes at issue in the original proceeding and making certain general changes in NASA's research contracting practices.

8.59. Our analysis proceeds as follows:

a. In Section 8.2.2.2 we clarify aspects of the NASA aeronautics R&D measures identified by the European Union as specific subsidies which it alleges the United States grants or maintains after the end of the implementation period and provide relevant background information.

b. We evaluate in Section 8.2.2.3 whether the post-2006 NASA aeronautics R&D measures challenged by the European Union involve financial contributions, within the meaning of

[1009] We recall that with regard to the pre-2007 NASA procurement contracts at issue in the original proceeding we find that the NASA-Boeing Patent Licence Agreement does not constitute a withdrawal of the subsidy, within the meaning of Article 7.8 of the SCM Agreement. See Section 8.1.3.2 above.

[1010] See United States' Compliance Communication, paras. 3 and 4.

Article 1.1(a)(1) of the SCM Agreement and evaluate in Section 8.2.2.4 whether any such financial contributions confer a benefit, within the meaning of Article 1.1(b).

c. To the extent that we find that the measures in question are financial contributions and confer a benefit, we evaluate in Section 8.2.2.5 whether any such subsidies are specific, within the meaning of Article 2 of the SCM Agreement.

d. We address the question of the amount of the subsidy and the amount of the financial contribution in relation to any unwithdrawn post-2006 NASA aeronautics R&D subsidies in Section 8.2.2.6.

8.2.2.2 The measures at issue

8.2.2.2.1 The European Union's panel request

8.60. In its panel request in this proceeding, the European Union alleges that NASA maintains subsidies benefiting U.S. LCA producers through: (a) 14 programmes (as reflected in NASA's annual Budget Estimates for Fiscal Years 1989 through 2013); (b) contracts, assistance instruments, and other agreements (as modified) entered into under these programmes; or (c) the terms of the contracts and other agreements (as modified) with Boeing listed in annex A of the United States' 23 September 2012 Compliance Communication.[1011]

8.61. The forms of the subsidies are described as: (a) the provision to Boeing of funding and access to government facilities, equipment, and employees for R&D applicable to the development, design, and production of LCA, on terms more favourable than would be available on the commercial market; as well as (b) the provision to Boeing of royalty-free use of the technologies developed with such funding and support or use of such technologies on preferential terms.[1012]

8.62. Although the European Union's panel request suggests that the European Union seeks to challenge both the NASA aeronautics R&D programmes as a whole[1013] and "funding and access to government facilities, equipment, and employees" provided directly to Boeing, it is clear from the European Union's submissions that its challenge is confined to particular "funding" and "access to government facilities, equipment and employees" provided to Boeing under specified NASA aeronautics R&D programmes, rather than the NASA aeronautics R&D programme budgets more generally.[1014] Hence, the "funding" and "access to government facilities, equipment, and employees" under the challenged aeronautics R&D programmes refer to payments made, and access to NASA facilities, equipment, and employees provided, to Boeing, and not to payments or access allocated to other recipients or NASA's own research efforts under the challenged NASA aeronautics R&D programmes. Moreover, the payments and access to government facilities, equipment, and employees occur through particular legal instruments entered into between NASA and Boeing, namely NASA procurement contracts, cooperative agreements, and Space Act Agreements, which are funded under the challenged NASA aeronautics R&D programmes.[1015]

8.63. The European Union's panel request identifies 14 "programs (as reflected in NASA's annual Budget Estimates for Fiscal Years 1989 through 2013)", including the eight NASA aeronautics R&D

[1011] European Union's request for the establishment of a panel, paras. 8 and 9. The panel request indicates that "Annex A of the 23 September 2012 notification is attached to this request, and the contracts listed therein are incorporated into this request". (European Union's request for the establishment of a panel, para. 9, p. 3, and annex A).

[1012] European Union's request for the establishment of a panel, paras. 8 and 10.

[1013] In this regard, the European Union has at times in its submissions argued that the value of Boeing's access to NASA facilities, equipment, and employees under NASA contracts and agreements is affected by the amount of funds and resources that NASA invests in and uses in its own research. (See e.g. European Union's second written submission, para. 264 and fn 413). The Panel addresses the issue of the amount of the subsidy and the amount of the financial contribution in respect of any subsidies provided through the NASA aeronautics R&D measures in Section 8.2.2.6.

[1014] In addition, the European Union's panel request states that the European Union's challenge concerns only such "funding" and "access to government facilities, equipment, and employees" provided to Boeing for "R&D applicable to the development, design, and production of LCA".

[1015] See paras. 8.74, 8.77, 8.78, and 8.79 below. Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.944 and 7.945. See also our analysis below in Section 8.2.2.6 of the amount of the relevant financial contributions.

programmes that were the subject of the European Communities' challenge in the original proceeding. We note that in the post-2006 period, NASA has consolidated and restructured its research efforts, terminating some of the original aeronautics R&D programmes and continuing work previously conducted under others, under consolidated or new programmes.[1016]

8.64. We note, in this regard, that in the request it made in October 2012 to the Panel to seek information pursuant to Article 13 of the DSU, the European Union identified seven of the 14 programmes listed in its panel request as involving "post-2006 NASA aeronautics R&D subsidies:

a. Fundamental Aeronautics Program[1017];

b. Integrated Systems Research Program[1018];

c. Aviation Safety Program[1019];

d. Aeronautics Test Program[1020];

e. Strategic Capabilities Assets Program[1021];

f. Aeronautics Strategy and Management Program[1022]; and

[1016] The United States indicates in its Compliance Communication that "NASA has terminated the Advanced Composites technology, High Speed Research, Advanced Subsonic Technology, High Performance Computing and Communications, Quiet Aircraft Technology, Vehicle Systems, and Research and Technology Base programs". (United States' Compliance Communication, para. 4). The United States explains that it "describes a NASA program as 'terminated' when NASA ends the program as a separate organizational activity and ceases to use funds budgeted for that program to pay employees, pay contractors, or conduct other NASA activities". (United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 2, para. 7).

[1017] Beginning in 2006, NASA established Fundamental Aeronautics as the successor to Vehicle Systems, creating NASA's largest programme, (NASA Fundamental Aeronautics Budget Estimates for FY 2007-FY 2013, (Exhibit EU-40), FY 2013, p. AERO-1) with the aim to "develop technology to enable revolutionary capabilities for the future of aviation"; (ibid. p. SAD ARMD 2-14; and NASA Fundamental Aeronautics Budget Estimates, FY 2007, (Exhibit USA-13)). See para. 7.279 above.

[1018] NASA established the Integrated Systems Research Program in 2010 with the objective of "maturing and integrating technologies in major vehicle systems and subsystems for accelerated transition to practical application". (NASA Integrated Systems Research Budget Estimates for FY 2010-FY 2013, (Exhibit EU-41), FY 2010, AERO-39).

[1019] NASA transitioned research conducted under Aviation Safety and Security to the renamed Aviation Safety Program with the goal to "conduct research to improve the intrinsic safety attributes of future aircraft and to eliminate safety related technology barriers". (NASA Aviation Safety Budget Estimates for FY 2007-FY 2013, (Exhibit EU-42), FY 2007, SAE ARMD 2-7).

[1020] NASA established the Aeronautics Test Program as a separate programme in 2007 in conjunction with the Strategic Capabilities Assets Program, with the objective "to ensure the continuous availability of a portfolio of NASA owned wind tunnels/ground test facilities and flight operations/test infrastructure which are strategically important to meeting national aerospace program goals and requirements". (NASA Aeronautics Test Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-44), FY 2008, p. ARMD 36). An identified major benefit of this program is to maintain stable user pricing at its facilities, which includes NASA's programmes across the Agency as well as other government agencies and U.S. Industry. (NASA Aeronautics Test Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-44), FY 2008, p. ARMD 37). See also NASA Aeronautics Test Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-44), FY 2007, SAE ARMD 2-18.

[1021] NASA established the Strategic Capabilities Assets Program in 2006, followed by the launch of the Aeronautics Test Program and High-End Computing Capability, to manage and maintain core operational aeronautics test facilities and infrastructure in support of NASA current and future programmes. (NASA Strategic Capabilities Assets Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-45), FY 2008, SAE CASP 5-2, CASP-47 to 48, and CASP-52 to 54; NASA Aeronautics Test Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-44), FY 2007, SAE ARMD 2-18). See also NASA Aeronautics Test Program Budget Estimates for FY 2007-FY 2013, (Exhibit EU-44), FY 2008, p. ARMD 36; NASA Fact Sheet, "Aeronautics Test Program", 2009, (Exhibit EU-195); NASA High End Computing Program Budget Estimates for FY 2009-FY 2013, (Exhibit EU-46), FY 2013, ES-6; NASA Fundamental Aeronautics Budget Estimates, FY 2007, (Exhibit USA-13), p. SAE CASP 5-1. See also NASA Ames Research Center, *NAS Division 2008: 25 Years of Innovation*, 2008, (Exhibit EU-208), p. 3; NASA, High-End Computing at NASA 2007-2008, 1 June 2009, (Exhibit EU-212), FY 2007, p. CASP 5-2; NASA, High-End Computing at NASA 2007-2008, 1 June 2009, (Exhibit EU-212), FY 2007, p. CASP 5-3 to 4; NASA High End Computing Program Budget Estimates for FY 2009-FY 2013, (Exhibit EU-46), FY 2009, p. Sci-21; NASA, "High-End Computing Capability, Pleiades Supercomputer", available at: <http://www.nas.nasa.gov/hecc/resources/pleiades.html>, accessed 29 August 2016, (Exhibit EU-206).

g. High End Computing Program.[1023]

8.65. In its first written submission, the European Union argues that NASA "continues to provide funding and support to Boeing through certain of the Original NASA Programmes in the same or substantively similar manner as before the original panel" and that NASA "also currently maintains additional subsidies for Boeing in the form of funding and access to government facilities, equipment and employees provided under successor and other closely related programmes".[1024]

8.66. The European Union states that the seven programmes that it identifies as involving post-2006 NASA aeronautics R&D subsidies "include both Original NASA Programmes and successor and other closely related programmes".[1025] Thus, it would appear that, as far as the alleged post-2006 NASA aeronautics R&D subsidies are concerned, the original NASA aeronautics R&D programmes are at issue only insofar as they may have been "included" in the seven programmes identified by the European Union.[1026]

8.2.2.2.2 The existence of the measures

8.67. In its first written submission, the United States indicates that neither the Aeronautics Strategy and Management Program nor the High-End Computing Program had funded any payments, or provided any facilities, equipment or employees, to Boeing for non-engine aeronautics research in the post-2006 period.[1027] The United States' assertions suggest that in fact there are no relevant NASA aeronautics R&D measures in existence as regards these two aeronautics R&D programmes. The European Union responds that the United States mistakenly defines the measure solely by identifiable contracts and agreements.[1028] The European Union then refers to arguments it makes in the context of estimating the amount of the financial contributions represented by the alleged NASA aeronautics R&D subsidies, that the value of the subsidy extends beyond the "four corners" of the specific legal instruments that are the "mechanisms by which NASA provides subsidies for Boeing LCA".[1029]

8.68. In our view, the European Union's arguments erroneously conflate the issue raised by the United States, which goes to the existence of the measure, with the question of how to value the amount of a subsidy, assuming that the measure said to constitute the subsidy in fact exists. We recall in paragraph 8.62 above that the payments and access to government facilities, equipment, and employees occur through particular legal instruments entered into between NASA and Boeing, namely NASA procurement contracts, cooperative agreements, or Space Act Agreements which are funded under the challenged NASA aeronautics R&D programmes.[1030] In the absence of any evidence that the Aeronautics Strategy and Management Program or the High-End Computing Program funded any procurement contracts, cooperative agreements, or Space Act Agreements

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[1022] NASA formed Aeronautics Strategy and Management in 2012 to "conduct{} research and provide{} programmatic support that does not fit well into the current five programs", including information technology expenses, studies, and administrative functions for other NASA aeronautics R&D programmes. (NASA Aeronautics Strategy and Management Budget Estimates for FY 2012-FY 2013, (Exhibit EU-43), FY 2012, pp. AERO-44 and AERO-45). See also Memorandum of Understanding Among the Department of Transportation, Department of Commerce, Department of Defense, Department of Homeland Security, and National Aeronautics and Space Administration for the Next Generation Air Transportation System Joint Planning And Development, 9 June 2008, (Exhibit EU-192).

[1023] With funding from the Strategic Capabilities Assets Program, the High End Computing Program supports the operation, maintenance, and upgrade to NASA supercomputing facilities at the Ames Research Center, including NASA's "Pleiades" supercomputer, which supports NASA's aeronautics, exploration, space operation and science missions. (NASA High End Computing Program FY 2009-FY 2013, (Exhibit EU-46), FY 2010 Budget, SCI-18).

[1024] European Union's first written submission, para. 60.

[1025] European Union's first written submission, para. 72.

[1026] As explained in Section 8.1, the European Union additionally argues that the pre-2007 NASA aeronautics R&D subsidies at issue in the original proceeding, which include "NASA R&D support to Boeing" provided through the original NASA aeronautics R&D programmes have not been withdrawn and continue to benefit Boeing at present. (European Union's first written submission, para. 1181).

[1027] United States' first written submission, paras. 192 and 194.

[1028] European Union's second written submission, para. 211.

[1029] European Union's second written submission, para. 262.

[1030] See paras. 8.74, 8.77, 8.78, and 8.79 below. Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.944 and 7.945. See also our analysis of the amount of the subsidy and the amount of the relevant financial contribution in Section 8.2.2.6 below.

with Boeing in the post-2006 period, we consider there to be insufficient evidence that the relevant measures under these aeronautics R&D programmes exist.

8.69. In addition, with respect to the Strategic Capabilities Assets Program, the United States asserts that the only contract that Boeing received under this programme that was related to aeronautics research was an open-market, commercial purchase of a licence for NASA to use Boeing's proprietary flight training simulator (Contract NNL12AA55P).[1031] The United States argues that this contract did not involve any research on Boeing's part or the provision of facilities, equipment or employees to Boeing and that it is therefore not within the Panel's terms of reference, which cover only NASA "funding and access to government facilities, equipment, and employees for R&D applicable to the development, design and production of LCA".[1032] The European Union responds that the United States erroneously considers that "only contracts or agreements funded by the programme can constitute a subsidy".[1033] The European Union states that its claims with respect to the Strategic Capabilities Assets Program address the aeronautics test and simulation capabilities funded by this programme.[1034] However, to the extent that the United States has fully and accurately described this particular contract, the European Union submits that such a purchase of goods would not appear to be among the aspects of the NASA aeronautics R&D programmes that it is challenging.[1035]

8.70. We observe that Contract NNL12AA55P relates to the purchase of a simulator licence for use of Boeing's proprietary 737NG-800W/winglets flight simulator data[1036], and consistent with the views of the parties, this should not be examined among the NASA aeronautics R&D measures before us. Accordingly, as there is no evidence that any procurement contracts, cooperative agreements, or Space Act Agreements with Boeing were funded by the Strategic Capabilities Assets Program, we do not consider the Strategic Capabilities Assets Program as part of our assessment.

8.71. Finally, with respect to the Integrated Systems Research Program, the United States argues that certain funds were used by NASA to make purchases of items from Boeing, which it describes as "commercial, open-market items" that did not involve any research on Boeing's part or the provision of facilities, equipment or employees to Boeing.[1037] It submits that these transactions are not within the Panel's terms of reference. The European Union does not appear to dispute this. Accordingly, we find that these transactions should also not be examined as part of the measures at issue under the NASA aeronautics R&D programmes before us. As the United States has identified obligations with Boeing pursuant to other procurement contracts funded under the Integrated Systems Research Program, our assessment of the measures will address those contracts.

8.72. Accordingly, in light of the explanations in paragraphs 8.68-8.71 above, the NASA aeronautics R&D measures that we examine in this Section are payments and access to facilities, equipment, and employees provided to Boeing under post-2006 procurement contracts, cooperative agreements, and Space Act Agreements between NASA and Boeing funded under the four NASA aeronautics R&D programmes identified in (a) through (d) of paragraph 8.64 above, i.e. the Fundamental Aeronautics Research Program, the Integrated Systems Research Program, the Aviation Safety Program and the Aeronautics Test Program.

[1031] United States' first written submission, para. 193. Contract NNL12AA55P was initially identified as Exhibit USA-103 and was subsequently submitted as Exhibit USA-576. (See United States' comments to European Union's response to Panel question No. 89).

[1032] United States' first written submission, para. 193.

[1033] European Union's second written submission, para. 217.

[1034] European Union's second written submission, para. 217 (referring to the amount of the annual budgeted NASA aeronautics R&D programme funding that it allocates to Boeing as its "top-down" estimate of the value of the financial contribution provided to Boeing). See NASA Subsidies to Boeing's LCA Division (Exhibit EU-36), p. 8.

[1035] European Union's response to Panel question No. 89, para. 99.

[1036] See NASA Purchase Order NNL12AA55P, (Exhibit USA-576) (BCI), pp. 1 and 15.

[1037] United States' first written submission, para. 187. The United States refers to: (a) a ceramic matrix composite sandwich structure test coupon for **[[HSBI]]** (NASA Purchase Order NNC11QA17P, (Exhibit USA-98) (HSBI), pp. 1 and 18); (b) a ceramic matrix composite sandwich structures for exhaust systems for **[[HSBI]]** (allegedly purchase pursuant to Purchase Order NNC11VA84P, which was not submitted as an exhibit); and (c) an additional order of ceramic matrix composite sandwich structures for **[[HSBI]]** (NASA Purchase Order NNC11VA99P, (Exhibit USA-99) (HSBI), p. 2).

8.2.2.2.3 The instruments and processes through which R&D is commissioned under NASA's aeronautics R&D programmes

8.73. The Space Act authorizes NASA to enter into certain types of instruments to fund R&D with contractors and academic institutions, including awards made in the form of grants, cooperative agreements, or contracts depending on the nature of the submitting organization or other specific requirements.[1038]

8.74. NASA procurement contracts are the appropriate instrument in cases where the principal purpose is to acquire goods and services for the direct benefit or use of the United States Government.[1039] Procurement contracts are subject to the U.S. Federal Acquisition Regulation (FAR).[1040]

8.75. Indefinite Delivery/Indefinite Quantity (IDIQ) procurement contracts are "umbrella" contracts that provide for the procurement of an indefinite quantity of supplies and/or services when the exact time or quantity of future deliveries are not known at the time of the award of the contract. These arrangements contain statements of work that describe the general scope, nature, complexity and purpose of the contract. Work is awarded under IDIQ contracts pursuant to particular "task orders" (or "delivery orders"), which typically contain more detailed statements of work.[1041] Task orders and delivery orders are not themselves independent contracts, as they rely on the body of the IDIQ contract for many of their provisions.[1042] Single or multiple task orders may be awarded under IDIQ contracts.

8.76. NASA also awards contracts through Basic Ordering Agreements (BOAs), which are framework agreements setting certain terms of an acquisition in advance of the issuance of the requirements applicable to the acquisition.[1043] Such terms may cover a description of supplies and services to be procured and the method for pricing, issuing, and delivering contracts/orders under the agreement. This mechanism enables NASA to focus on the critical contract terms for each work package and implement them through a task order, rather than go through the expense of negotiating a new contract each time NASA contracts for research.[1044] As a legal matter, however, BOAs are not contracts by themselves because there is no consideration until the first task is awarded.[1045]

8.77. NASA cooperative agreements are used where the "principal purpose is the transfer of anything of value to the recipient to accomplish a public purpose of support or stimulation" and where "substantial involvement is anticipated between NASA and the recipient".[1046] "Substantial involvement" may include an "active NASA role in collaborative relations, access to a NASA site or equipment, or sharing NASA facilities and personnel".[1047] Cooperative agreements also provide for the possibility of "joint funding" by NASA and participating private entities as well as non-cash contributions.[1048]

[1038] NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303).

[1039] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 593 and accompanying fns; and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.945 and accompanying fns.

[1040] See e.g. NASA, *Grant and Cooperative Agreement Handbook*, Part 1260, (November 2014), (Exhibit EU-1369), p. A-10.

[1041] United States' first written submission, para. 108.

[1042] United States' response to Panel question No. 95, para. 166.

[1043] United States' first written submission, para. 122; response to Panel question No. 95, para. 166.

[1044] United States' first written submission, para. 122.

[1045] United States' response to Panel question No. 95, para. 166.

[1046] NASA, *Grant and Cooperative Agreement Handbook*, Part 1260, (November 2014), (Exhibit EU-1369), p. A-11 (referring to *United States Code of Federal Regulations*, Title 14, section 12.60.12(d)). In identifying the contracts and agreements at issue between NASA and Boeing in the original proceeding, the panel noted that "in a few cases", transactions between NASA and Boeing under the original NASA aeronautics R&D programmes were undertaken pursuant to cooperative agreements. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2408, para. 7.945).

[1047] NASA, *Grant and Cooperative Agreement Handbook*, Part 1260, (November 2014), (Exhibit EU-1369), p. A-11 (referring to *United States Code of Federal Regulations*, Title 14, section 12.60.12(d)(1)).

[1048] United States' second written submission, fn 220, para. 158 ("cooperative agreements are the only instruments used by NASA that provide for 'joint funding,' and they did not represent a significant share of NASA's payments to Boeing at any point from 1989 to the present"). See also NASA, *Grant and Cooperative*

8.78. NASA may enter into Space Act Agreements pursuant to its "other transactions" authority under the Space Act, in order to "utilize the broad authority granted to the Agency in the Space Act to further the Agency's missions".[1049] Policy Directive 1050.1H describes these arrangements as follows:

> Space Act Agreements … Establish a set of legally enforceable promises between NASA and the other party to the Agreement (herein "Agreement Partner"). Such Agreements constitute Agency commitments of resources (including personnel, funding, services, equipment, expertise, information, or facilities) to accomplish stated objectives of a joint undertaking with an Agreement Partner. The Agreement Partner can be a U.S. or foreign person or entity, an educational institution, a Federal, state, or local governmental unit, a foreign government, or an international organization.[1050]

8.79. As the panel explained in the original proceeding, NASA may enter into reimbursable, non-reimbursable and partially-reimbursable Space Act Agreements. Under fully reimbursable Space Act Agreements, full reimbursement is required for goods, services or facilities provided, while alternatively, NASA has authority to accept partial reimbursement, or no reimbursement where activities undertaken pursuant to the agreement offer corresponding "benefits to NASA", or NASA and an agreement partner undertake mutually beneficial activity that furthers the Agency's missions.[1051]

8.80. NASA solicits proposals for research from contractors and universities through various mechanisms depending on the objectives of research, including through the issuance of NASA Research Announcements (NRAs). NRAs may be used to solicit proposals for foundational research in areas relevant to enhancing NASA's core competencies, including through the award of contracts, grants or cooperative agreements. NRA solicitations are released by NASA Headquarters through the Web-based NASA Solicitation and Proposal Integrated Review and Evaluation System. All NRA technical work is defined and managed at NASA centres by project teams within NASA programme areas (e.g. Aviation Safety, Fundamental Aeronautics, and Aeronautics Test Program). NRA awards originate from the centres. Competition for NRAs awards is described as "full and open" to educational institutions, industry and non-profit organizations.[1052] Under this process, NASA issues requests for information (RFIs) relating to research goals identified in connection with technological roadmaps. NASA develops feedback based on RFIs it receives to develop NASA centre technical proposals. Thereafter, an NRA is issued to solicit proposals from the external community to undertake research identified in NASA centre proposals, after which NASA selects proposals for funding.[1053] The United States has identified discrete NRAs that NASA has issued in relation to the challenged aeronautics R&D programmes since 2006.[1054] The United States has explained that NRAs are only one of the vehicles that NASA uses to solicit offers from contractors and universities (for instance, the United States explains that procurement contracts such as IDIQ contracts are used to acquire services or goods for the U.S. Government). The United States notes that a number of solicitations by NASA outside the NRA process resulted in the award of contracts with Boeing during the 2007-2012 period.[1055]

Agreement Handbook, Part 1260, (November 2014), (Exhibit EU-1369), p. A-14 (referring to *United States Code of Federal Regulations*, title 14, section 12.60.14) ("non-monetary (zero dollar) grants or cooperative agreements shall not be used, except for no-cost extensions").

[1049] NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303); and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.945 and accompanying fns. See also NASA, *Space Act Agreements Guide*, Advisory Implementing Instruction NAII 1050-1C, (25 February 2013), section 2.2.10, (Exhibit EU-1037), pp. 5 and 6.

[1050] NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303).

[1051] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2410, para. 7.945. See also NASA, *Space Act Agreements Guide*, Advisory Implementing Instruction NAII 1050-1C, (25 February 2013), section 2.2.10, (Exhibit EU-1037), pp. 13-16; NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303).

[1052] See NASA website, available at <http://www.aeronautics.nasa.gov/nra.htm>, accessed 29 August 2016.

[1053] United States' first written submission, para. 105.

[1054] United States' first written submission, paras. 105-107.

[1055] United States response to Panel question No. 95, paras. 167 and 168.

8.2.2.3 Whether there is a financial contribution

8.2.2.3.1 Main arguments of the parties and third parties

8.81. The European Union argues that NASA has made "no significant changes since 2006"[1056] to the nature of procurements contracts and agreements that it enters into with Boeing under the challenged aeronautics R&D programmes, and thus, the Panel should conclude that the payments and access to government facilities, equipment, and employees provided to Boeing under the post-2006 NASA aeronautics R&D measures at issue are similarly financial contributions under Article 1.1(a)(1) of the SCM Agreement.[1057]

8.82. The European Union argues that the NASA aeronautics R&D measures share many of the same characteristics that led the Appellate Body to conclude that the NASA procurement contracts and DOD assistance instruments before the original panel constituted transactions that were "akin to a species of joint venture", which were analogous to a type of equity infusion, and therefore constituted financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. Specifically, the European Union considers that payments under the challenged NASA aeronautics R&D measures qualify as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i), while the provision of access to facilities, equipment, and employees qualifies as a government provision of goods and services other than general infrastructure under Article 1.1(a)(1)(iii) of the SCM Agreement.[1058]

8.83. The European Union contends that, like the NASA procurement contracts and DOD assistance instruments before the original panel, the transactions under the current NASA aeronautics R&D measures involve payments by NASA, in the case of procurement contracts, as well as the commitment of non-monetary resources by both NASA and Boeing under procurement contracts, cooperative agreements, and Space Act Agreements. In addition, the subjects to be researched are often determined collaboratively between NASA and Boeing, and the fruits of the research are shared between the parties. Thus, the European Union considers that the transactions under the post-2006 NASA aeronautics R&D measures are akin to a species of joint venture. The European Union disputes the United States' contention that an alleged overhaul[1059] of NASA aeronautics R&D practices should have any impact on the Panel's assessment of whether the post-2006 NASA aeronautics R&D measures involve financial contributions. Contrary to the United States' assertions, the European Union argues that NASA continues to support the needs of the U.S. aviation industry with the goal of accelerating the development of advanced technologies for practical application.[1060] The European Union rejects the suggestion that there is no longer collaboration in determining research to be undertaken.[1061] The European Union additionally disputes that the United States has made any changes to its dissemination policies and asserts that NASA continues to restrict the disclosure of data.[1062] The European Union also contests that there have not been any meaningful changes to NASA policies to enable foreign companies access to NASA facilities.[1063] Finally, it submits that the value of payments and support to Boeing has increased since the end of the implementation period and any suggestion otherwise is based on a flawed and overly-narrow conception that is inconsistent with the approach followed by the panel and the Appellate Body.[1064]

8.84. In addition, the European Union contends that the transactions in question possess the same features that led the Appellate Body to conclude that the NASA procurement contracts and DOD assistance instruments before the original panel were analogous to equity infusions. In this

[1056] European Union's second written submission, para. 242.
[1057] European Union's first written submission, para. 60.
[1058] European Union's first written submission, paras. 169-177; second written submission, paras. 231-238 and 242-249. See also European Union's response to Panel question No. 14, paras. 98 and 99.
[1059] The European Union submits that the various changes the United States has identified as compliance measures were part of a process that culminated in January 2006, "in the middle of the original reference period – and yet had no effect on the findings of the original panel or Appellate Body". (European Union's second written submission, paras. 177 and 178).
[1060] European Union's second written submission, paras. 177-187.
[1061] European Union's second written submission, para. 185; comments on United States' response to Panel question No. 94, paras. 243-250.
[1062] European Union's second written submission, paras. 190-193.
[1063] European Union's second written submission, para. 198.
[1064] European Union's second written submission, paras. 258-269.

regard, under the post-2006 NASA aeronautics R&D measures, funding is provided in expectation of some kind of return in the form of scientific and technical information, discoveries, and data expected to result from the research performed; there is no certainty that research will be successful; the funder's risks are limited to the amount of money it commits and the opportunity cost of other support it provides; and NASA as the funder contributes to the project by providing access to facilities, equipment, and employees, as some equity investors would also do.[1065]

8.85. In light of its position that the NASA aeronautics R&D measures at issue are akin to a species of joint venture and analogous to a type of equity infusion and that therefore the payments and access to facilities, equipment, and employees provided under these measures are financial contributions within the meaning of Article 1.1(a), the European Union submits that the Panel need not consider the United States' arguments that the transactions may be characterized as purchases of services, or that transactions properly characterized as "purchases of services" are excluded from the scope of the SCM Agreement.

8.86. Moreover, the European Union argues that the United States has failed to demonstrate on the basis of a proper Vienna Convention analysis of Article 1.1(a)(1) that transactions properly characterized as purchases of services are excluded from the scope of that provision. In light of the Appellate Body's decision to declare the original panel's interpretation of Article 1.1(a)(1) "moot and of no legal effect", there is no basis for the United States to argue that the Appellate Body would have agreed with the panel's reasoning as to why purchases of services are excluded from the scope of Article 1.1(a)(1).[1066]

8.87. The European Union also argues, in the alternative, that "the transfer to Boeing of patent and other intellectual property rights in the technologies and data developed under the NASA aeronautics R&D programmes *additionally* constitutes a provision of 'goods … other than general infrastructure' within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement".[1067] The European Union requests the Panel not to consider this "alternative" conception of the financial contribution "unless it rejects the European Union's primary contentions, with respect to the characterisation of the challenged aeronautics R&D measures".[1068]

8.88. The United States argues that the post-2006 cooperative agreements and Space Act Agreements should be treated as joint ventures for purposes of the financial contribution analysis, while the transactions between NASA and Boeing under post-2006 procurement contracts are properly characterized as purchases of services, which are not financial contributions and therefore are outside the scope of the SCM Agreement.

8.89. The United States argues that the Appellate Body in the original proceeding identified six features of the pre-2007 NASA procurement contracts that warranted their characterization as "joint ventures" and submits that post-2006 *Space Act Agreements and cooperative agreements* share many of these same attributes.[1069] This includes the pooling of non-monetary resources, with Boeing sometimes making payments to NASA, while NASA provides Boeing with access to NASA facilities and equipment. In addition, although NASA no longer uses "limited exclusive rights data" (LERD) clauses, Boeing has an opportunity to exploit technology resulting from work performed under agreements.[1070] Accordingly, the post-2006 Space Act Agreements are best characterized as transactions that are "akin to a species of joint venture". The United States confirms that NASA cooperative agreements are the only NASA arrangements that provide for "joint funding" by NASA and participating private entities as well as non-cash contributions[1071] and

[1065] European Union's first written submission, para. 174; second written submission, paras. 165-186, 234, and 244-246.

[1066] See European Union's second written submission, paras. 250-252; response to Panel question No. 14, para. 101; and comments on United States' response to Panel question No. 14, paras. 60-62.

[1067] European Union's first written submission, para. 177 (emphasis added). The European Union has indicated that it is not challenging the provision of patent rights as a separate subsidy distinct from the NASA aeronautics R&D contracts from which they arise, as it did before the original panel. (European Union's second written submission, para. 257).

[1068] European Union's response to Panel question No. 32, para. 197. The European Union explains that this is an alternative manner of bringing the R&D contracts within the scope of Article 1.1(a)(1) of the SCM Agreement.

[1069] United States' first written submission, paras. 214-221.

[1070] United States' first written submission, paras. 214-219.

[1071] United States' second written submission, fn 220 and para. 158.

as such, payments under these arrangements constitute a direct transfer of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, while any provisions of goods and services constitute financial contributions under Article 1.1(a)(1)(iii). The United States notes that NASA makes only in-kind contributions under Space Act Agreements, and thus, these arrangements constitute financial contributions in the form of provisions of goods and services under Article 1.1(a)(1)(iii), but there is no direct transfer of funds under Article 1.1(a)(1).[1072]

8.90. As to the post-2006 *NASA procurement contracts*, the United States argues that the characteristics of these measures differ in a number of significant respects from the pre-2007 NASA procurement contracts, and that a thorough analysis of all of the evidence demonstrates that the post-2006 NASA procurement contracts are purchases of services.[1073] The United States argues, to begin, that most of the features of the pre-2007 NASA procurement contracts that led the Appellate Body to characterize them as "akin to a species of joint venture" do not apply to the post-2006 NASA procurement contracts.[1074] The United States argues in this regard that: (a) the subjects to be researched are no longer determined collaboratively between NASA and industry, rather, the reformulation of ARMD research programme through the NRA process means that NASA decides research topics on its own; (b) the value of any access to NASA equipment, facilities, and employees is far lower under the post-2006 NASA procurement contracts than the panel found under the pre-2007 procurement contracts, and the European Union has provided no evidence that research teams engaged under post-2006 NASA procurement contracts mixed industry and NASA employees; (c) there is no evidence of any post-2006 procurement contract in which the value of any access to NASA facilities, equipment or employees is significantly higher than the value of the payments; (d) while the pre-2007 procurement contracts were found to involve NASA and Boeing pooling non-monetary resources and employees, most of the post-2006 procurement contracts do not provide for facilities or equipment, and none of them refer to a "pooling" of employees; (e) while Boeing still does not pay any royalties to NASA for commercial rewards arising from the scientific and technical output of the research where the Boeing employee, working alone or jointly with a NASA employee, performs the work that results in the invention, this is not the case where a NASA employee invents the invention. In that case, NASA owns the invention and Boeing would have to pay a royalty; and (f) NASA has discontinued the use of LERD clauses. In the original proceeding such clauses were found to give Boeing the exclusive rights to exploit technology resulting from pre-2007 NASA procurement contracts in which Boeing was contributing a significant amount of its own resources to the research efforts.[1075]

8.91. The United States argues, based on the above differences between the characteristics of the pre-2007 NASA procurement contracts that led to the Appellate Body's characterization of them as "akin to a species of joint venture", and the characteristics of the post-2006 NASA procurement contracts, that the European Union has failed to meet its burden of proof to establish that the post-2006 NASA procurement contracts are financial contributions. Moreover, the above considerations, along with other evidence, as described in greater detail below, support a conclusion that the transactions are most appropriately characterized as purchases of services.

8.92. In this regard, the United States argues that, following an "overhaul" of NASA research practices in 2006, NASA changed its approach to research contracting, both in terms of the nature of the research commissioned and the way it is conducted. According to the United States, NASA's research contracting is no longer the collaborative, industry-centric model that led to the Appellate Body's findings in the original proceeding.[1076] NASA has shifted its research focus away from

[1072] United States' first written submission, para. 221.
[1073] United States' first written submission, para. 223.
[1074] United States' first written submission, para. 224. The six features are: (a) the subjects to be researched are determined collaboratively between NASA and the U.S. aeronautics industry; (b) some of the transactions involved NASA providing Boeing with access to its equipment, facilities and employees, and some contracts awarded to Boeing provided for research teams that included NASA employees; (c) the value of the access to NASA facilities, equipment, and employees was significantly higher than the value of payments under the procurement contracts; (d) the transactions involve NASA and Boeing pooling non-monetary resources and employees; (e) scientific and technical information, discoveries and data are among the expected outcomes of the research jointly undertaken by Boeing and NASA and Boeing is not required to pay any royalties to NASA for any resulting commercial rewards; and (f) LERD clauses give Boeing an exclusive right to exploit technology resulting from contracts in which they were contributing a significant amount of their own resources to contract research efforts. (United States' first written submission, paras. 103 and 213)
[1075] United States' first written submission, para. 224.
[1076] United States' second written submission, paras. 104, 124, and 220.

technology demonstration toward longer-term fundamental research. NASA has also removed references to increasing industry competitiveness as an evaluation criterion and has reformulated the NASA aeronautics research objectives as aiming at "producing broad public goods of the kind that governments routinely seek, with a substantial focus on building and improving infrastructure".[1077] NASA has reduced the role of contractors in setting research priorities under the NRA process.[1078] In addition, NASA has changed its dissemination policies to remove restrictions that had in the past limited dissemination of NASA-funded research; for example, by eliminating the use of LERD clauses under post-2006 procurement contracts. NASA has also changed its facilities policies to permit access by foreign entities on the same basis as U.S. companies.[1079] The United States also asserts that NASA has "more than halved" funding for aeronautics research in the FY 2007-FY 2012 period compared to FY 1989-FY 2006. Moreover, NASA has reduced the value of access to equipment, facilities, and employees in post-2006 procurement contracts such that the "primary contribution" from NASA involves payments, while on the contractor side, Boeing's contribution now "consists of services, as witnessed by the description of the work in the contracts".[1080] As a result of these changes, the United States maintains that the transactions under the challenged post-2006 procurement contracts differ in critical respects from the characteristics the Appellate Body identified with respect to the pre-2007 NASA procurement contracts.

8.93. The United States argues that, in light of the above factors, the European Union has failed to establish that the payments and provision of facilities, equipment, and employees to Boeing through any of the post-2006 procurement contracts constitute financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. The United States argues that the European Union's analysis addresses only whether the NASA procurement contracts can *possibly* be characterized as joint ventures, without also examining whether they would *more appropriately* be characterized as purchases of services. The United States considers that, following the guidance from the Appellate Body, a panel should take account of all of the relevant characteristics of the measure, and the features which are most central to the measure itself. As the Appellate Body acknowledged in *Canada – Renewable Energy / Canada – Feed-in Tariff Program*, one transaction may have multiple aspects and a panel's analysis must take those complexities into account.[1081] Thus, even if the European Union were correct that the NASA procurement contracts had characteristics that were akin to a joint venture, the Panel would still need to weigh the relative merits of each possible characterization, which the European Union's arguments fail to do.[1082]

8.94. The United States argues that the post-2006 NASA procurement contracts are most appropriately characterized as purchases of services. This is because, on the NASA side of the transaction, the primary contribution consists of payments to Boeing, with provisions of facilities and equipment being minimal, and with no provision for input from NASA personnel other than as reviewers of results produced by the contractors. On the Boeing side of the transaction, the primary contribution consists of services, as witnessed by the descriptions of the work in the contracts.[1083] The United States refers to the acceptance by the panel and Appellate Body in *Canada – Renewable Energy / Canada – Feed-in Tariff Program* that a purchase of goods occurs when a government or public body obtains possession (including in the form of an entitlement) over a good by making a payment of some kind (monetary or otherwise).[1084] Under the same logic, when a government obtains an entitlement to the supply of a service, by making a payment of some kind, there is a purchase of a service. This is what happens under the post-2006 NASA procurement contracts: NASA pays money and obtains entitlement to the performance of services.

[1077] United States' first written submission, para. 104; second written submission, paras. 124-126.
[1078] United States' response to Panel question No. 15, para. 41.
[1079] This change was effected by NASA Policy Directive 1370.1, issued on 26 October 2007, under which, according to the United States, Airbus has entered into reimbursable Space Act Agreements for the use of wind tunnels. (United States' first written submission, paras. 1 and 110; second written submission, paras. 124 and 224; and NASA Policy Directive 1370.1 (26 October 2007), (Exhibit USA-256)).
[1080] United States' first written submission, paras. 224 and 225; second written submission, paras. 218 and 224.
[1081] United States' second written submission, para. 216 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 586).
[1082] United States' second written submission, para. 216.
[1083] United States' first written submission, para. 225; second written submission, paras. 214 and 225.
[1084] United States' first written submission, para. 226 (referring to Appellate Body Reports, *Canada – Renewable Energy / Canada – Feed-in Tariff Program*, para. 5.123).

The post-2006 NASA procurement contracts are therefore purchases of services.[1085] The United States considers that the original panel's analysis of the scope of Article 1.1(a)(1) of the SCM Agreement, as excluding transactions properly characterized as purchases of services, provides compelling reasons to conclude that the post-2006 NASA procurement contracts are not financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.[1086]

8.95. Finally, the United States argues that the European Union has failed to establish that intellectual property rights accruing to Boeing pursuant to activities conducted under NASA contracts and agreements are financial contributions. First, as a factual matter, the United States argues that there is no transfer of intellectual property rights to Boeing under U.S. law, as the patent is the property of the person who makes the invention, and NASA does not transfer any patent to Boeing. Second, intellectual property is not a "good" and therefore cannot be the subject of a financial contribution in the form of a government provision of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement. Third, any intellectual property rights developed as a result of work under a NASA procurement contract are an effect of the contract, not an independent financial contribution.[1087]

8.96. Brazil considers that an interpretation of Article 1.1(a)(1) of the SCM Agreement that excludes *a priori* government R&D measures that involve purchases of services from the scope of the SCM Agreement would potentially undermine the effectiveness of the SCM Agreement.[1088] Brazil argues that "monetary contributions" clearly fall within the meaning of a direct transfer of funds under Article 1.1(a)(1)(i). A monetary contribution does not become something else simply because the funds may be repaid at a later date (such as for a loan) or because other consideration may be provided in return (such as equity or intellectual property). The significance and potentially distortive nature of a monetary contribution does not change by virtue of the fact that the contribution is made in exchange for a service, as opposed to something else of value. In this case, the Panel may, depending on the facts and circumstances surrounding the relevant transactions, find that some or all of the monetary payments by the U.S. Government to Boeing under a particular R&D contract constitute a *de facto* grant or other type of direct transfer of funds, and therefore a financial contribution under Article 1.1(a)(1)(i) of the SCM Agreement.[1089]

8.97. Canada argues that, where a measure can be properly characterized as the purchase of a service, it should be excluded from the scope of financial contribution in Article 1.1(a)(1).[1090] There may be instances, however, where a measure that can properly be characterized as a purchase of a service has more than that one aspect, and where the other aspect or aspects may fall within Article 1.1(a)(1). To determine whether a measure includes additional aspects or elements, apart from the purchase of a service, a panel should consider the rights and obligations of the government and the private entity, the financial conditions of the transactions under the measure and the balance of advantages between the parties.[1091]

8.98. Japan argues that government measures involving payments in exchange for a provision of services are not *a priori* excluded from the scope of Article 1.1(a)(1) of the SCM Agreement, as such an interpretation could create an "enormous loophole" in coverage and thereby undermine the effectiveness of the SCM Agreement.[1092] Japan argues that the drafters of the SCM Agreement,

[1085] United States first written submission, para. 226. The United States argues that the changes in the relevant characteristics of the post-2006 procurement contracts compared to their pre-2007 counterparts "shifted the balance of the transactions to the point where for most contracts, NASA's contribution consisted almost exclusively of funds, and Boeing's contribution almost exclusively of services. This balance is characteristic of a purchase of services". (United States' second written submission, para. 214).

[1086] United States' first written submission, paras. 93-97, 102, 104-111, 211, and 222-230; second written submission, paras. 226-231. While recognizing that the Appellate Body declared the original panel's interpretation of Article 1.1(a)(1) "moot", owing to the Appellate Body's characterization of pre-2007 NASA procurements and DOD assistance instruments as similar to joint ventures, the United States argues that the panel's interpretation of Article 1.1(a)(1) as regards purchases of services may nevertheless be considered in this proceeding for the persuasiveness of the reasoning. (United States' first written submission, para. 230; second written submission, paras. 210 and 231).

[1087] United States' first written submission, paras. 231-235; second written submission, paras. 443-447.

[1088] Brazil's third-party submission, para. 88; third-party statement, para. 7; third-party response to Panel question No. 2.1, para. 4.

[1089] Brazil's third-party submission, para. 92; third-party statement, paras. 9-13.

[1090] Canada' third-party response to Panel question No. 2.1, para. 18.

[1091] Canada' third-party response to Panel question No. 2.1, para. 19.

[1092] Japan's third-party statement, paras. 6-9; third-party response to Panel question No. 5, para. 15.

either in the *travaux préparatoires* or elsewhere, did not indicate any intention to exclude purchases of services from the scope of Article 1.1(a)(1).[1093] Japan considers that a composite transaction that could potentially be a direct transfer of funds, in addition to a purchase of services would involve financing beyond the remuneration or the cost paid in exchange for the provision of a service.[1094]

8.99. Korea argues that aspects of a transaction may be considered a financial contribution within the meaning of Article 1.1(a)(1) of the SCM Agreement to the extent that those aspects are substantively comparable to at least one of the categories of government actions that are identified within the meaning of Article 1.1(a)(1). In assessing the existence of a financial contribution, Korea submits that a panel should look beyond the formal financial structure of a government measure and assess the underlying characteristics and design of the measure.[1095]

8.2.2.3.2 Evaluation by the Panel

8.100. The question before us is whether payments and access to facilities, equipment, and employees provided by NASA to Boeing pursuant to post-2006 NASA procurement contracts, cooperative agreements and (non-reimbursable and partially-reimbursable) Space Act Agreements funded through four NASA aeronautics R&D programmes (the Fundamental Aeronautics Program; the Integrated Systems Research Program; the Aviation Safety Program; and the Aeronautics Test Program) constitute financial contributions within the meaning of Article 1 of the SCM Agreement.

8.101. The United States has not included these measures in its request for preliminary rulings of 13 November 2012 and there is no disagreement between the parties that the post-2006 NASA aeronautics R&D measures are within the scope of this proceeding. Moreover, the United States refers to actions taken by NASA with respect to the post-2006 measures in its substantive argumentation as to how it has withdrawn the subsidies at issue. In its Compliance Communication, the United States indicates that NASA has modified the rights accorded to the parties under all of the NASA contracts covered by the DSB recommendations and rulings and that "NASA has made identical modifications, as necessary, with regard to contracts subsequent to those covered by the recommendations and rulings of the DSB, without prejudice to the U.S. view that those contracts were not subsidies causing adverse effects to EU interests".[1096] The United States considers that "NASA has withdrawn the subsidies determined to exist, both with regard to the pre-2007 contracts covered by the recommendations and rulings of the DSB and with regard to subsequent contracts and agreements."[1097] Although the United States regards only the pre-2007 NASA procurement contracts as being covered by the DSB recommendations and rulings, it is clear that it views the steps it has taken with respect to the post-2006 contracts as a withdrawal of the subsidies determined to exist. In any event, we consider that, in light of the similarity and continuity that exist between the pre-2007 and post-2006 NASA aeronautics R&D measures, in terms of legal instruments and legal basis, the objectives pursued and the programmes under which they are funded, a review of whether the United States has complied with Article 7.8 that excluded the post-2006 NASA aeronautics R&D measures would not be meaningful.

8.2.2.3.2.1 Post-2006 NASA cooperative agreements and Space Act Agreements

8.102. It is not in dispute between the parties that the post-2006 *cooperative agreements* and *Space Act Agreements* at issue in this proceeding are properly characterized as joint ventures, and that transactions pursuant to these agreements constitute financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.[1098] The United States does not argue that it has withdrawn the subsidy by taking actions that would affect the legal characterization of these transactions as financial contributions. Rather, the United States argues that these transactions do

[1093] Japan further notes that Article XV:1 of the GATS mandates negotiations on multilateral disciplines "to avoid distortive effects of subsidies on trade in services", and given this obligation, Japan considers that purchases of services "may have been omitted from Article 1.1(a)(1) of the SCM Agreement out of precaution so as not to prejudge the outcomes of prospective negotiations on subsidies disciplines pursuant to Article XV of the GATS". (Japan's third-party statement, para. 8).
[1094] Japan's third-party response to Panel question No. 5, para. 16.
[1095] Korea's third-party submission, paras. 16 and 17; third-party statement, paras. 10 and 11.
[1096] United States' Compliance Communication, para. 3.
[1097] United States' second written submission, para. 108.
[1098] See, para. 8.88 above.

not confer a benefit within the meaning of Article 1.1(b). More specifically, we consider that: (a) payments made to Boeing under the post-2006 cooperative agreements at issue are direct transfers of funds within the meaning of Article 1.1(a)(1)(i); and (b) the provision of access to NASA facilities, equipment, and employees to Boeing pursuant to the post-2006 cooperative agreements and Space Act Agreements at issue constitutes the provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.

8.103. **We therefore find that the payments provided by NASA to Boeing under post-2006 cooperative agreements, and the access to facilities, equipment, and *employees* provided by NASA to Boeing under the post-2006 cooperative agreements and Space Act Agreements, funded under four NASA aeronautics R&D programmes (Fundamental Aeronautics Program; Integrated Systems Research Program; Aviation Safety Program; and Aeronautics Test Program), are financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. Specifically, the payments provided by NASA constitute financial contributions as direct transfers of funds, within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, and the provision of access to facilities, equipment, and employees qualifies as a government provision of goods or services other than general infrastructure, within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.**

8.2.2.3.2.2 Post-2006 NASA procurement contracts

8.104. The parties disagree as to whether transactions under the *post-2006 NASA procurement contracts* between NASA and Boeing constitute financial contributions.

8.105. We will examine the post-2006 NASA procurement contracts to determine their relevant characteristics, based on an evaluation of the competing arguments advanced by the European Union and the United States. More specifically, we will examine the respects in which the post-2006 NASA procurement contracts are said to differ from their pre-2007 counterparts and determine whether, as argued by the United States, the differences are such that the transactions are now most appropriately characterized as purchases of services even if, based on certain characteristics, they could also possibly be characterized as joint ventures.[1099] We will then determine whether, based on the outcome of this exercise, we consider that these measures fall within the scope of Article 1.1(a)(1).

8.106. Before undertaking this exercise, we recall the salient aspects of the Appellate Body's characterization of the pre-2007 NASA procurement contracts and DOD assistance instruments as transactions that were "akin to a species of joint venture", which were "analogous to equity infusions", such that the payments and access to facilities, equipment, and employees provided to Boeing under the pre-2007 procurement contracts constituted financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.

8.107. The Appellate Body first examined the pre-2007 NASA procurement contracts to identify their relevant characteristics, and thereafter considered whether the measures properly characterized fell within the scope of Article 1.1(a)(1).[1100] In assessing the pre-2007 NASA procurement contracts, the Appellate Body made a number of observations regarding their relevant features. It noted that on the "input" side of the transactions, NASA provided Boeing with funding to conduct research, while NASA and Boeing both contributed the use of facilities, equipment, and employees for purposes of conducting research.[1101] In other words, the transactions involved not just funding by NASA, but also NASA and Boeing pooling non-monetary resources and employees.[1102] The Appellate Body also emphasized that the subjects to be researched were often determined collaboratively.[1103]

8.108. On the "output" side of the transactions, which involved scientific and technical information, discoveries and data, the Appellate Body noted that Boeing could take title to

[1099] United States' first written submission, para. 216.
[1100] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 585-589.
[1101] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 595 and 606.
[1102] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 595.
[1103] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 595.

inventions discovered, as well as rights over certain types of data derived from research, while the U.S. Government retained a royalty-free license to use the subject invention or data for government purposes.[1104] Moreover, pursuant to LERD clauses in certain NASA procurement contracts, the U.S. Government's rights in data developed in the course of the contracted research were limited.[1105] In other words, on the "output" side, there was not a "straightforward exchange of monetary resources for some kind of non-monetary consideration".[1106] Rather, the "fruits of the research are shared between Boeing and NASA".[1107]

8.109. Based on the foregoing considerations, the Appellate Body considered:

> The transactions are collaborative arrangements that are composite in nature in that they involve various elements that are interlinked. The arrangements are akin to a species of joint venture.[1108]

8.110. The Appellate Body then referred to statements by NASA officials that emphasized the "partnership" between NASA and the U.S. LCA industry, which further supported the conclusion that the transactions between Boeing and NASA were comprised of a number of elements and were collaborative in nature[1109] and to the panel's description of the transactions in its analysis of serious prejudice which highlighted the composite nature of the pre-2007 NASA procurement contracts and the collaborative relationship between NASA and Boeing.[1110]

8.111. In determining whether the pre-2007 NASA procurement contracts, properly characterized as composite arrangements that are "akin to a species of joint venture", fell under any of the subparagraphs of Article 1.1(a)(1), the Appellate Body began by noting several similarities between the "collaborative undertakings" that were the pre-2007 NASA procurement contracts and equity infusions, which are one of the examples of transactions covered by the more general reference to direct transfer of funds under Article 1.1(a)(1)(i).[1111] First, NASA provides funding to Boeing in the expectation of some kind of return. The return in question is not financial, but rather, takes the form of scientific and technical information, discoveries, and data expected to result from the research performed.[1112] NASA, like an equity investor, has no certainty at the time it commits the funding that the research will be successful. NASA's risks are limited to the amount of money it contributes and the opportunity cost of other support it provides to the project, much like an equity investor.[1113] Finally, like some equity investors, NASA contributes to the project by providing access to equipment, facilities, and employees. On the basis of these characteristics, the Appellate Body concluded that the "joint venture arrangements" between NASA and Boeing had characteristics "analogous to equity infusions".[1114] The commonality between the NASA joint venture arrangements and equity infusions was sufficient to enable the Appellate Body to conclude that the measures in question fell within the concept of "direct transfer of funds" in Article 1.1(a)(1)(i)[1115], such that the payments under the pre-2007 NASA procurement contracts were a direct transfer of funds within the meaning of Article 1.1(a)(1)(i) and the provision of access to NASA facilities, equipment, and employees constituted a provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii).[1116]

Whether the post-2006 NASA procurement contracts are appropriately characterized as collaborative R&D arrangements or as purchases of services

8.112. The United States refers to a number of principal features of the post-2006 NASA procurement contracts which it considers support a different characterization of those instruments to the Appellate Body's assessment of the pre-2007 NASA procurement contracts. We address

[1104] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 596 and 606.
[1105] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 596.
[1106] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 596.
[1107] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 596.
[1108] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 597.
[1109] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 598.
[1110] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 610.
[1111] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 621 and 622.
[1112] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 623.
[1113] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 623.
[1114] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 624.
[1115] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 624.
[1116] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 624.

each of these features, along with the European Union's responses, before engaging with the question of whether overall, it is most appropriate to characterize the post-2006 NASA procurement contracts not as collaborative joint ventures, but as purchases of services.

8.113. First, the United States argues that the nature of aeronautics research commissioned by NASA has changed, with a shift in focus from technology demonstration to longer-term fundamental research. The United States submits that, following an overhaul of its research practices in 2006, NASA shifted the focus of its research toward "foundational research", developing "core competencies" and "producing broad public goods of the kind that governments routinely seek".[1117] The United States considers that evidence submitted by the European Union equally supports the conclusion that basic research is targeted toward serving the needs of the broader community, including in areas of national security, transportation safety and efficiency improvements.[1118] Regardless of any references to achieving "specific technology demonstration goals" or "system-level objectives", the United States contends that it is up to industry to leverage research for commercial applications. The European Union responds that the alleged overhaul was undertaken to improve NASA's effectiveness in supporting the needs of Boeing and the U.S. aviation industry so as to improve their competiveness, including maturing technologies for transition to practical application.[1119]

8.114. We first explain the context in which the alleged overhaul of NASA's research contracting practices occurred in 2006. In 2001, the U.S. Congress established a Commission on the Future of the United States Aerospace Industry to study issues associated with the future of this industry and to recommend potential actions by the U.S. Government to support the maintenance of a robust industry. The Commission made a number of recommendations in 2002, many of which required federal agencies such as NASA to take actions.[1120] Of particular relevance in the field of U.S. aerospace R&D, the Commission had identified as a challenge the lack of sufficient and sustained public funding for research and associated infrastructure for research, development, testing, and evaluation, which it considered to limit the United States' ability to address critical national challenges and to enable breakthrough aerospace capabilities.[1121] The Commission had therefore recommended that the U.S. Government "significantly increase its investment in basic aerospace research, which enhances national security; enables breakthrough capabilities; and fosters an efficient, secure and safe aerospace transportation system".[1122]

8.115. NASA addressed the Commission's recommendations to focus on basic research by restructuring NASA's ARMD to give greater priority to fundamental research.[1123] Accordingly, ARMD's three aeronautics R&D programmes became Fundamental Aeronautics, Aviation Safety and Airspace Systems, to replace previous aeronautics R&D programmes in Vehicle Systems, Aviation Safety and Security, and Airspace Systems, respectively.[1124] Within those programmes, the most significant change occurred with respect to the Fundamental Aeronautics Program, which focuses

[1117] United States' first written submission, para. 104.

[1118] United States' first written submission, paras. 128-130. See also Commission on the Future of the United States Aerospace Industry, *Final Report*, (November 2002), (Exhibit EU-1029); National Research Council of the National Academies, *Decadal Survey of Civil Aeronautics: Foundation for the Future*, (2006), (Exhibit EU-1030); and U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), pp. 10 and 24.

[1119] European Union's second written submission, paras. 177-187.

[1120] Commission on the Future of the United States Aerospace Industry, *Final Report*, (November 2002), (Exhibit EU-1029).

[1121] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 10.

[1122] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 10.

[1123] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 22. NASA uses the term "fundamental research" to refer to research that includes continued long-term, scientific study in core areas such as physics, chemistry, materials, experimental techniques, and computational techniques to enable new capabilities and technologies for individual and multiple disciplines.

[1124] The European Union does not challenge the Airspace Systems Program as involving any subsidies to Boeing in this proceeding.

on fundamental aeronautics research rather than on development projects. NASA has indicated that these programmes give priority to fundamental research that is applicable to a broad range of air vehicles, whereas previously, NASA had emphasized "bringing specific projects to higher technological maturity, often focusing on these narrowly defined demonstration projects and not on developing technology that would be transferable to other types of systems or projects".[1125]

8.116. The United States indicates that the majority of the work that Boeing performed under the Fundamental Aeronautics Program in the post-2006 period was organized under two BOAs. One was a 2004 BOA that had previously been part of the Vehicle Systems Effort to research structure and materials for aerospace vehicles and aerodynamic, aerothermodynamic and acoustics technology for aerospace vehicles and passed to the Fundamental Aeronautics Program in 2006.[1126] We have reviewed the task orders issued under the 2004 BOA identified by the United States, along with the United States' descriptions of the work that Boeing performed under these instruments, which it argues produce a "variety of public goods".[1127] It is not evident to us that this work was focused solely on fundamental research. Indeed, some of the tasks were part of an effort to develop prototypes, and others involved the design, analysis and fabrication of tooling for a large test article made primarily of PRSEUS materials. Even the United States' description of the ways in which Boeing's work under these instruments produced public goods does not preclude them also being of value and interest to Boeing. Indeed, the United States admits that the PRSEUS studies, while providing knowledge useful to safety regulators, also provided information useful to "any entity planning to build a composite aircraft".[1128] We reach a similar conclusion regarding our review of the tasks Boeing carried out under the 2008 BOA between NASA and Boeing that was funded by the Fundamental Aeronautics Program. The United States acknowledges that one task was aimed at development of N+3 and N+4 technologies for entry into service in the 2030-2035 and 2040-2050 periods, respectively, while another called for a "generalized prediction of the challenges faced by commercial aircraft operators and the types of vehicle capabilities needed to meet those needs".[1129] Another task called for a study of the technologies necessary to produce a supersonic aircraft capable of carrying 35-70 passengers for entry into service in the 2018-2020 period.[1130] Indeed, the statements of work under certain contracts are classified, which also suggests that the work in question involves far more than a focus on purely fundamental research. In short, while we do not disagree that NASA refocused the research efforts under certain of its aeronautics R&D programmes to place greater emphasis on fundamental research rather than technology demonstration, we are not persuaded that the work that Boeing performed under procurement contracts funded through the Fundamental Aeronautics Program in the post-2006 period involved only fundamental research.

8.117. We reach a similar conclusion with respect to the procurement contracts funded under the Aviation Safety Program. Our review of the tasks Boeing performed under the 2006 and 2007 BOAs funded under the Aviation Safety Program indicates that, while the work had use "far beyond Boeing and far beyond the development and production of large civil aircraft"[1131], it was also clearly not confined to fundamental research.

8.118. The Integrated Systems Research Program did not result from NASA's 2006 reorganization. Rather, it was created in 2010 with an initial focus on developing new vehicle concepts and enabling technologies that will simultaneously reduce fuel burn, noise, and emissions.[1132] The United States in its first written submission identified the relevant BOAs, task orders, and contracts between NASA and Boeing that were funded under this programme. It is not evident to us that the work that Boeing performed under these instruments was confined to fundamental research and the United States does not suggest otherwise.[1133]

[1125] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 23.

[1126] United States' first written submission, para. 123. 2004 BOA, (Exhibit USA-24) (HSBI).

[1127] United States' first written submission, para. 132.

[1128] United States' first written submission, para. 132.

[1129] United States' first written submission, para. 134.

[1130] United States' first written submission, para. 135.

[1131] United States' first written submission, para. 159.

[1132] NASA Budget Estimates for FY 2010, (Exhibit USA-92), p. AERO-2.

[1133] See United States' first written submission, paras. 181-191. The Aeronautics Test Program is an infrastructure maintenance and development programme for NASA's large aeronautics ground test facilities,

8.119. In summary, our review of the procurement contracts funded by the relevant NASA aeronautics R&D programmes suggests that, notwithstanding NASA's 2006 shift in focus to longer-term fundamental research *in a general sense*, at least under the Fundamental Aeronautics Program, the work performed by Boeing under the procurement contracts at issue is not confined to fundamental research in the sense of "long term, scientific study in core areas such as physics, chemistry, materials, experimental techniques, and computational techniques to enable new capabilities and technologies for individual and multiple disciplines".[1134] Rather, even if these procurement contracts did not always involve Boeing in specific development projects, it appears that much of the work could be generally described as applied research.[1135]

8.120. Moreover, we note that the realignment of NASA's research activities was, according to the U.S. Government Accountability Office (GAO), nevertheless undertaken to implement the recommendations of the Commission on the Future of the United States Aerospace Industry, which were aimed at supporting the maintenance of a robust U.S. aerospace industry in the 21st century. In this respect, NASA's aeronautics R&D activities, even where focused on basic and applied research rather than advanced stages of development, appear ultimately to be designed, through collaborative efforts with industry, to advance the interests of the U.S. aerospace industry. For example, a 2008 NRA under the Fundamental Aeronautics Program explains that NASA's focus on foundational research through partnerships with universities and industry and the development of system-level solutions will "support U.S. leadership in aerospace":

> NASA has defined four distinct levels to describe its approach to Fundamental Aeronautics technology development: (1) conduct foundational research to further our fundamental understanding of the underlying physics and our ability to model that physics, (2) leverage the foundational research to develop technologies and analytical tools focused on discipline-based solutions, (3) integrate methods and technologies to develop multi-disciplinary solutions, and (4) solve the aeronautics challenges for a broad range of air vehicles with system-level optimization, assessment and technology integration.
>
> Interaction with the aeronautics community aligns with the four levels: (1) NASA will advance the state of knowledge of the underlying physics and its modelling by partnering with universities and companies engaged in foundational research, (2) NASA will investigate discipline-related challenges and will interact with the aeronautics community through published reports and direct technology transfer, (3) NASA will develop multidisciplinary methods and technologies, and disseminate them in published reports and direct technology transfer, and (4) NASA will collaborate with industry by means of non-reimbursable cooperative agreements to address system-level challenges at the precompetitive level.[1136]

8.121. NASA elsewhere explains the objective of "partnering with universities and companies engaged in foundational research" as a way "to provide value to industry of a more enduring nature"[1137]:

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primarily wind tunnels. The European Union's challenges involving this programme relate only to Space Act Agreements and therefore we do not further consider it here. (See European Union's first written submission, paras. 133 and 134).

[1134] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 22 and fn 33.

[1135] While "basic research" works to expand fundamental knowledge in areas such as physics, chemistry and mathematics *without specific applications in mind*, "applied research" aims to gain knowledge applicable to solving specific and identified needs, building on the general work of the basic sciences, e.g. activities to develop better propulsion and power technology and crew and personnel protection technology. Applied research can be distinguished from development projects, which use the knowledge and understanding to build new, or improve existing, systems. (U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 39).

[1136] NASA, Research Opportunities in Aeronautics – 2008 (ROA-2008), NASA Research Announcement NNH08ZEA001N, (7 March 2008), (Exhibit USA-61), appendix A, pp. A1 and A2.

[1137] NASA, "Fundamental Aeronautics", Solicitation No. NNH060000L (3 January 2006), (Exhibit USA-14), pp. 6 and 7.

> The interaction with the aeronautics community at the systems level is unique because NASA typically does not design and build air vehicles for operational use. We look toward collaboration with industry to provide insight into issues associated with flight, manufacturing and design. NASA's role at this level is to develop multidisciplinary design, analysis, and optimization tools based on the underlying physics. NASA intends to collaborate with industry consortia to provide value to industry of a more enduring nature, rather than immediate design and manufacturing problem-solving.[1138]

8.122. In other words, even where NASA undertook efforts to shift the focus of its aeronautics research activities to fundamental research, this is still consistent with supporting collaborative efforts with industry, in order to advance the interests of the U.S. aerospace industry.

8.123. Second, the United States argues that NASA has removed references to increasing industry competitiveness as an evaluation criterion and has reformulated the NASA aeronautics research objectives as aiming at producing broad public goods designed to build and improve infrastructure. We note, however, that NASA retains the statutory objective of "preserv{ing} the role of the United States as a leader in aeronautical and space science and technology".[1139] Moreover, our review of NASA's 2014 Budget Estimates indicates that NASA still acknowledges the continued role of the NASA aeronautics R&D programmes in promoting the competitiveness of the U.S. aeronautics industry:

> NASA's investment in aeronautics research is critically important to advance the Nation's global leadership in aviation, to grow the economy and increase jobs, and to continue to provide safe and efficient air travel to the flying public.
>
> ARMD brings innovation to aeronautics through the seedling fund; expands knowledge, and develops concepts, tools, and methods in the fundamental research programs; and assesses and matures the integrated benefits of the most promising technologies in the Integrated Systems Research Program. ARMD conducts this cutting-edge research through partnerships with academia, industry, and other government agencies. The partnerships foster a collaborative research environment across which multiple communities can exchange ideas and knowledge. These collaborations help ensure the future competitiveness of the Nation's aviation industry and strong future workforce.[1140]

8.124. The objective of promoting competitiveness is also recognized in the context of particular programme budgets such as the Fundamental Aeronautics Program:

> NASA research is inherent in every major modern U.S. aircraft, and the type of research performed by the FA program will prime the technology pipeline, enabling continued US leadership, competitiveness, and jobs in the future.[1141]

8.125. NASA budget materials provide that "many of the tools and technologies that are developed have an immediate impact to industry"[1142] and identify specific technologies and projects that maintain the competitiveness of the U.S. LCA industry, such as work conducted under the Advanced Composites Project "to focus on reducing the timeline for development and certification of innovative composite materials and structures … will boost American industry and help maintain a U.S. global leadership in the field of composite materials which is a major element of all new aircraft development".[1143]

[1138] NASA, "Fundamental Aeronautics", Solicitation No. NNH060000L (3 January 2006), (Exhibit USA-14), p. 7.

[1139] Section 102(d) of the National Aeronautics and Space Act of 1958, as codified and restated by Public Law No. 111–314, Stat. 3 (18 December 2010), *United States Code*, Title 51, section 20102(d) (current through 7 December 2012), (Exhibit EU-252), sections 20102(d)(5) and (9).

[1140] NASA Programme Budgets for FY 2014, (Exhibit EU-1015), pp. AERO-2 and AERO-3.

[1141] NASA Programme Budgets for FY 2014, (Exhibit EU-1015), p. AERO-20.

[1142] NASA Programme Budgets for FY 2014, (Exhibit EU-1015), p. AERO-20.

[1143] NASA Programme Budgets for FY 2014, (Exhibit EU-1015), p. AERO-3.

8.126. Moreover, specific projects under the Fundamental Aeronautics and Integrated Systems Research programmes still retain the explicit objective of promoting the competitiveness of U.S. industry. In this regard, the subsonic fixed wing research conducted under the Fundamental Aeronautics Program has the explicit goal of "enabl{ing} future generations of transport aircraft" through fundamental research that "will prime the technology pipeline enabling continued U.S. leadership, competitiveness, and jobs in the long term", noting that "much of the scientific knowledge, technologies and concepts necessary to enable these longer-term vehicles may have benefit to aviation much sooner".[1144]

8.127. NASA describes opportunities for commercialization of technology, including for the U.S. LCA industry, from work conducted under the Active Aeroelastic Wing Project under the Fundamental Aeronautics Program as follows:

> With the successful demonstration of actively controlled "wing warping" techniques for aircraft roll control at transonic speeds in the Active Aeroelastic Wing project, engineers will now have more freedom in designing more efficient, thinner, higher aspect-ratio wings for future high-performance aircraft while reducing the structural weight of the wings by 10 to 20 per cent. This will allow increased fuel efficiency or payload capability, along with potentially reduced radar signature. The technology also has application to a variety of other future aircraft, such as high-altitude, long-endurance unmanned aircraft, transports, and airliners.[1145]

8.128. NASA explains that the work under this project, "helps ensure that new aerospace concepts are transferred quickly to the U.S. aerospace industry so they can be applied to technologies for commercial and military aircraft and space vehicles".[1146] This includes "advanced power-by-wire concepts and fly-by-light (fiber optic cable) systems, as well as electric-powered actuators and advanced flight-control computer software".[1147]

8.129. Similarly, RFIs and NRAs issued in connection with particular aeronautics R&D projects under the Fundamental Aeronautics Program specifically acknowledge the ongoing benefit of the commissioned R&D to industry and the collaborative relationship between NASA and industry. A 2006 solicitation under the Fundamental Aeronautics Program states:

> Under this RFI, NASA solicits interest primarily from industry to collaborate at the systems level in Fundamental Aeronautics. NASA seeks to enter into research collaborations that benefit both industry and NASA …
>
> …
>
> NASA intends to focus its resources on fundamental technology and build upon that investment to develop system-level, multidisciplinary capabilities that enable both civilian and military platforms of the future. As NASA does not typically build or operate military or commercial aircraft, we seek partnerships with industry at the systems level.[1148]

8.130. The Integrated Systems Research Program also recognizes the goal to ensure that promising technologies are made available to the U.S. industry:

> The Integrated Systems Research Program's goal is to demonstrate integrated concepts and technologies to a maturity level sufficient to reduce risk of

[1144] NASA Fundamental Aeronautics Budget Estimates for FY 2007-FY 2013, (Exhibit EU-40), FY 2013, AERO-21.

[1145] NASA Armstrong Fact Sheet, "F/A-18 Active Aeroelastic Wing", 28 February 2014, (Exhibit EU-1374), pp. 2 and 3. NASA explains that work on the F/A-18 Active Aeroelastic wing research was undertaken at NASA's Dryden Flight Research Center in Edwards, CA, "in cooperation with the US Air Force Research Laboratory (AFRL) and Boeing Phantom Works". (Ibid. p. 1).

[1146] NASA Armstrong Fact Sheet, "F/A-18 Systems Research Aircraft", 28 February 2014, (Exhibit EU-1375), p. 1.

[1147] NASA Armstrong Fact Sheet, "F/A-18 Systems Research Aircraft", 28 February 2014, (Exhibit EU-1375), p. 1.

[1148] NASA, "Fundamental Aeronautics", Solicitation No. NNH060000L (3 January 2006), (Exhibit USA-14), p. 2.

> implementation for stakeholders in the aviation community … The program conducts integrated system-level research on those promising concepts and technologies to explore, assess, and demonstrate the benefits in an operationally relevant environment. The program matures and integrates technologies for accelerated transition to practical application.[1149]

8.131. Therefore, despite the United States' assertions to the contrary, advancing the competitiveness of the U.S. aviation industry remains an important objective for NASA's aeronautics R&D activities.

8.132. Third, the United States argues that, through the NRA process introduced in 2006, NASA has reduced the role of contractors in setting research priorities and thus the scope for collaboration in determining the technologies to be researched. According to the United States, in early 2006, NASA undertook a process to reformulate its aeronautics research objectives to aim at producing broad public goods with a substantial focus on building and improving infrastructure. This process included the issuance of RFIs by each of NASA's ARMDs relating to fundamental aeronautics, aviation safety and airspace objectives consistent with previously-identified milestones in NASA's ten-year technological roadmap. According to the United States, the responses to RFIs helped to identify "areas of research that stakeholders considered to be of primary interest".[1150] NASA researchers then created teams to develop refined technical proposals to achieve the objectives of each programme, incorporating the feedback from the RFI process. These NASA centre proposals were then submitted "to a rigorous review process to ensure technically credible and relevant research objectives".[1151] Finally, in May 2006, NASA issued an NRA for Research Opportunities in Aeronautics to solicit proposals from the "external community" for foundational research in the areas outlined in the NASA centre proposals.[1152] NASA issued a second NRA in 2008, followed by further NRAs in 2009, 2010, and 2011, respectively.[1153]

8.133. The United States argues that NASA's reliance on NRAs to award some of the grants, cooperative agreements and research contracts during the FY 2007-FY 2012 period represents "a new approach to identifying research topics and choosing suppliers of research services"[1154], and constitutes a "significant" change from the way in which "NASA's big aeronautics projects were typically supported".[1155] The United States characterizes this as an "open process", wherein any participation by industry in helping to identify areas of research is "completely voluntary", has resulted in "many bids from individual organizations as well as teams", and has reduced the role that the LCA industry plays in setting research priorities and designing research programmes.[1156] The United States considers that the significance of the changes effected through the introduction of the NRA process is evident from a comparison of the 1989-2006 period, in which NASA's large aeronautics projects were typically awarded through IDIQ contracts, which had general statements of work covering one or more aeronautics-related technical disciplines, with the more detailed statements of work being contained in the task order requests for proposals (RFPs). In contrast, the NRAs contain more general statements of task and are broadly open to the "community", resulting in many bids from individual organizations as well as teams.[1157]

[1149] NASA Programme Budgets for FY 2014, (Exhibit EU-1015), p. AERO-32.

[1150] United States' first written submission, para. 105.

[1151] United States' first written submission, para. 105.

[1152] United States' first written submission, para. 105.

[1153] United States' first written submission, para. 105. The 2009 and 2010 NRAs included funding for projects derived from the American Recovery and Reinvestment Act, which the United States says included heightened requirements on transparency regarding the spending of government funds. The 2010 NRA additionally solicited proposals for research under the new Integrated Systems Research Program.

[1154] United States' first written submission, para. 102.

[1155] United States' first written submission, para. 108. The United States indicates that IDIQ contracts, which were awarded during the 1989-2006 period, "typically had general statements of work covering one or more aeronautics-related technical disciplines, with much more detailed statements of work being provided in task order requests for proposals".

[1156] The United States contends that "seeking and accepting input from interested persons is a standard way for governments to ensure good decision making". (United States' second written submission, para. 131). See also United States' first written submission, paras. 93, 105, and 108; response to panel question Nos. 93, fn 229 and para. 164, 94, para. 165, and 95, paras. 166-168; and comments on European Union's response to Panel question No.15, para. 88.

[1157] United States' first written submission, para. 108.

8.134. The European Union disputes "the extent and effect" of NASA's use of NRA procedures for selecting research. In particular, it argues that the notion that there is no longer collaboration in determining technologies to be researched is contradicted by the United States' own factual descriptions of how the process works, including the fact that NASA issues RFIs to identify areas of research of primary interest to external stakeholders such as the U.S. aviation industry, and then uses their responses to set the content of research solicited through NRAs. Additionally, the fact that NRAs allow participants to make requests that are not "as precise" as requests for proposals required under IDIQ contracts suggests that NRAs provide more room for input from contractors.[1158] The European Union further argues that the RFIs themselves expressly confirm the collaborative nature of the process.[1159] The European Union concludes that in any case, the United States has confirmed that only some of the post-2006 R&D was procured pursuant to the NRA process (leaving the remainder to be procured outside the NRA framework), thereby undermining the significance of any alleged changes to NASA's practices.[1160]

8.135. We do not consider that the mere fact that NASA solicits work pursuant to the NRA process on certain occasions[1161] necessarily supports the conclusion that the setting of research priorities for the NASA aeronautics R&D programmes can no longer be considered a collaborative effort between NASA and industry. On the contrary, evidence before us suggests that collaboration with industry, even if occurring through a different set of procedural mechanisms, is still an integral part of NASA's aeronautics R&D agenda.

8.136. We note that, notwithstanding the introduction of the NRA process in 2006, a significant number of procurement contracts, task orders and cooperative agreements were in fact awarded by NASA since FY 2006 *outside* the NRA process.[1162] Second, we are not persuaded that the issuance of NRAs containing more general statements of tasks necessarily reduces the opportunity for contractors to provide input into the research solicited.[1163] Finally, it remains the case that both NASA and the U.S. LCA industry retain a mutual interest in the research commissioned by NASA, as acknowledged by the United States:

> Both parties expect{} to use the results of this work, and if any intellectual property rights result{}, to split them in a way that each party could use them in its sphere of activity. They also recognize that, whatever the results, the knowledge gained would be useful in their further activities.[1164]

[1158] European Union's second written submission, para. 185.

[1159] See European Union's comments on United States' response to Panel question No. 94, para. 246 (referring to NASA, "Fundamental Aeronautics", Solicitation No. NNH060000L (3 January 2006), (Exhibit USA-14), p. 2: "{u}nder this RFI, NASA solicits interest primarily from industry to collaborate at the systems level in Fundamental Aeronautics. NASA seeks to enter into research collaborations that benefit both industry and NASA …"). The European Union additionally notes the description by the U.S. GAO that RFIs were used in 2006 "to solicit information on key areas of interest for private industry and determine opportunities for collaboration with NASA's planning and research efforts". (European Union's comments on United States' response to Panel question No. 94, para. 243 (referring to U.S. Government Accountability Office, *Aerospace Industry, Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 69)).

[1160] European Union's comments on United States' response to Panel question No. 94, paras. 248-250.

[1161] United States' response to Panel question No. 95, para. 168. The United States refers to five occasions between 2006 and 2011 where NASA issued NRA solicitations. (See United States' first written submission, paras. 105-107 (referring to NASA, *Research Opportunities in Aeronautics – 2006 (ROA-2006)*, NASA Research Announcement NNH06ZNH001, (23 May 2006), (Exhibit USA-17); NASA, *Research Opportunities in Aeronautics – 2008 (ROA-2008)*, NASA Research Announcement NNH08ZEA001N, (7 March 2008), (Exhibit EU-91); NASA, *Research Opportunities in Aeronautics – 2009 (ROA-2009)*, NASA Research Announcement NNH10ZEA001N, (13 April 2009), (Exhibit EU-184); NASA, *Research Opportunities in Aeronautics – 2010 (ROA-2010)*, NASA Research Announcement NNH10ZEA001N, (2 June 2010), (Exhibit EU-133); and NASA, *Research Opportunities in Aeronautics – 2011 (ROA-2011)*, NASA Research Announcement NNH11ZEA001N, (2011), (Exhibit USA-255) (HSBI))).

[1162] In response to a question from the Panel, the United States indicated that since FY 2006, NASA has awarded Boeing 51 contracts, task orders and cooperative agreements *outside* the NRA process, compared with only 29 through the NRA process. (United States' response to Panel question No. 95, para. 168).

[1163] We agree with the European Union that the more generally defined NRA solicitations arguably leave more scope for input from contractors than the more precisely defined RFPs under IDIQ contracts. (European Union's second written submission, para. 185).

[1164] United States' second written submission, para. 225 (arguing that these characteristics support the conclusion that the transactions are purchases of services).

8.137. This is similarly reflected in the language of a 2006 RFI issued in connection with the Fundamental Aeronautics Program:

> Interaction with the aeronautics community aligns with the {four-level approach to technology development}. The first three levels reflect relationships with the aeronautics community in which NASA seeks to ensure the national aeronautical technical expertise: (1) NASA will advance the state of knowledge of the underlying physics and its modeling by partnering with universities and companies engaged in foundational research where that partnership supplements NASA capabilities, (2) NASA will investigate discipline-related challenges and will interact with the aeronautics community through published reports and direct technology transfer, and (3) NASA will develop multi-disciplinary methods and technologies, and disseminate them in published reports and direct technology transfer.
>
> The interaction with the aeronautics community at the systems level is unique because NASA typically does not design and build air vehicles for operational use. We look toward collaboration with industry to provide insight into issues associated with flight, manufacturing and design. NASA's role at this level is to develop multidisciplinary design, analysis, and optimization tools based on the underlying physics. NASA intends to collaborate with industry consortia to provide value to industry of a more enduring nature, rather than immediate design and manufacturing problem-solving.[1165]

8.138. In our view, it is not credible that in issuing RFIs to external stakeholders, including the U.S. LCA industry, as a pre-cursor to NASA's development of NASA centre proposals and eventual issuance of NRAs, NASA is simply soliciting the views of industry (or academia) as to how best to meet *NASA's* needs as a purchaser of research services. Rather, as previously noted, NASA retains the statutory objective of preserving the U.S. LCA industry's role as a leader in aeronautical and space science and technology, and in doing so, seeks input from those who stand to benefit from the output of collaborative work as to how best to achieve this. This conclusion is supported by the U.S. GAO's 2006 review of NASA's efforts to implement selected Aerospace Commission recommendations (discussed above). The GAO noted that, prior to issuing a 2006 research announcement, NASA had issued three RFIs "to solicit information on key areas of interest for private industry and determine opportunities for collaboration with NASA's planning and research efforts".[1166] The GAO explained that the NRAs that were subsequently issued "were influenced by the response to the requests for information".[1167] Similarly, a 2010 NRA indicates that "external input" was provided at the "formulation" phase of conceiving the Environmentally Responsible Aviation Project under the Integrated Systems Research Program.[1168] The Environmentally Responsible Aviation Project has the identified objective to "serve as a technology transition bridge between the lower technology readiness level (TRL) efforts on-going in the fundamental ARMD Programs and higher TRL needs of potential users".[1169]

8.139. Fourth, the United States argues that NASA has changed its dissemination policies to remove restrictions that had previously limited the dissemination of NASA-funded research, including through the elimination of LERD clauses in the post-2006 procurement contracts. The European Union disputes that the United States has made any changes to its dissemination policies since 2001 (i.e. before the conclusion of the original proceeding) and argues that NASA continues

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[1165] NASA, "Fundamental Aeronautics", Solicitation No. NNH060000L (3 January 2006), (Exhibit USA-14), pp. 6 and 7. (emphasis added)

[1166] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 69.

[1167] U.S. Government Accountability Office, Aerospace Industry, *Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges*, Report No. GAO-06-920, (September 2006), (Exhibit EU-1031), p. 69. The GAO referred to NASA's research "strategy" as "a new approach for establishing partnerships with universities and the private sector".

[1168] NASA, *Research Opportunities in Aeronautics – 2010 (ROA-2010)*, NASA Research Announcement NNH10ZEA001N, (2 June 2010), (Exhibit EU-133), appendix D.2 Environmentally Responsible Aviation-1, p. D-4, embedded chart.

[1169] NASA, *Research Opportunities in Aeronautics – 2010 (ROA-2010)*, NASA Research Announcement NNH10ZEA001N, (2 June 2010), (Exhibit EU-133), appendix D.2 Environmentally Responsible Aviation-1, p. D-2.

to include provisions in contracts restricting the disclosure of "limited rights data", and other data labelled as sensitive information and technical data determined to be trade secrets.[1170]

8.140. In characterizing the pre-2007 NASA procurement contracts in the original proceeding, the Appellate Body observed that "some" of the procurement contracts contained LERD clauses.[1171] Moreover, the Appellate Body's discussion of the limitations on the U.S. Government's rights in data owing to the presence of LERD clauses in certain of the pre-2007 NASA procurement contracts occurred in the context of noting that on the "output" side of the transactions there was a sharing of the fruits of the research between NASA and Boeing.[1172] Despite changes to NASA's dissemination policies that pre-date the findings in the original proceeding, in certain instances, it appears that Boeing retains rights to the data derived from performing research under certain contracts[1173], as well as rights to inventions discovered as part of the research.[1174] In sum, NASA's decision to no longer use LERD clauses in its procurement contracts does not change the fact that Boeing retains rights to the data and inventions derived from performing research under those contracts, which led the Appellate Body to conclude that on the "output" side of the transactions, there was not merely a "straightforward exchange of monetary resources for some kind of non-monetary consideration".

8.141. Fifth, the United States argues that NASA has changed its facilities policies to permit access by foreign entities on the same basis as U.S. companies. The European Union disputes this, asserting that the policy document that the United States cites to support this position, NASA

[1170] European Union's second written submission, paras. 190-193.

[1171] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 596.

[1172] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 596.

[1173] As explained in the original proceeding, under U.S. law, the U.S. Government generally obtains "unlimited rights" in any data first produced in the performance of a contract between the U.S. Government and a contractor, for government purpose uses, while a contractor obtains the right to "use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract". A contractor may also restrict from disclosure and use any "data, other than computer software, that embody trade secrets or are commercial or financial and confidential or privileged, to the extent that such data pertain to items, components, or processes developed at private expense". (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1297-7.1301; and *United States Code of Federal Regulations*, Title 48, section 52.227-14, (Exhibit EU-1034), sections 52.227-14(a)(2)(iv), (b)(1)(i), and (2)(ii)). The European Union has submitted evidence of at least one procurement contract that restricts from disclosure any data produced under the contract "that will contain or reveal data which was developed exclusively at Private Expense". (NASA Task Order NNL11AA00T, (Exhibit EU-126), attachment J-2, p. 11), and a procurement contract designating "special license rights data", which is required to be withheld from public disclosure for a period between five and 15 years. (Contract between Boeing and NASA, NND11AG03C (9 December 2010), (Exhibit EU-176), pp. 12 and 16, and exhibit 1 (3-1 and 3-2)). The United States contends that the use of "special license rights data" is an "exceptional" case that occurred "several years ago near the outset of the new program formulation" and "is not representative of standard practice". (United States' first written submission, fn 358 and para. 186; see also second written submission, para. 136). Finally, we note that the United States has also acknowledged that data may, in certain cases, be subject to limited distribution to NASA or other government agencies or government contractors only, or publication may be delayed. The List of NASA Technical Reports submitted by the United States indicates that, in certain cases, no report was provided or "required" "due to the nature and requirements of the contract{}". Other reports are identified as "classified" or subject to International Traffic in Arms Regulations (ITAR). Finally, other reports are labelled as "Releasable, not published", which the United States explains, means the report is "in the process of pre-publication internal review". (See List of NASA Technical Reports, (revised) (formerly Exhibit US-13-312), (Exhibit EU-214)).

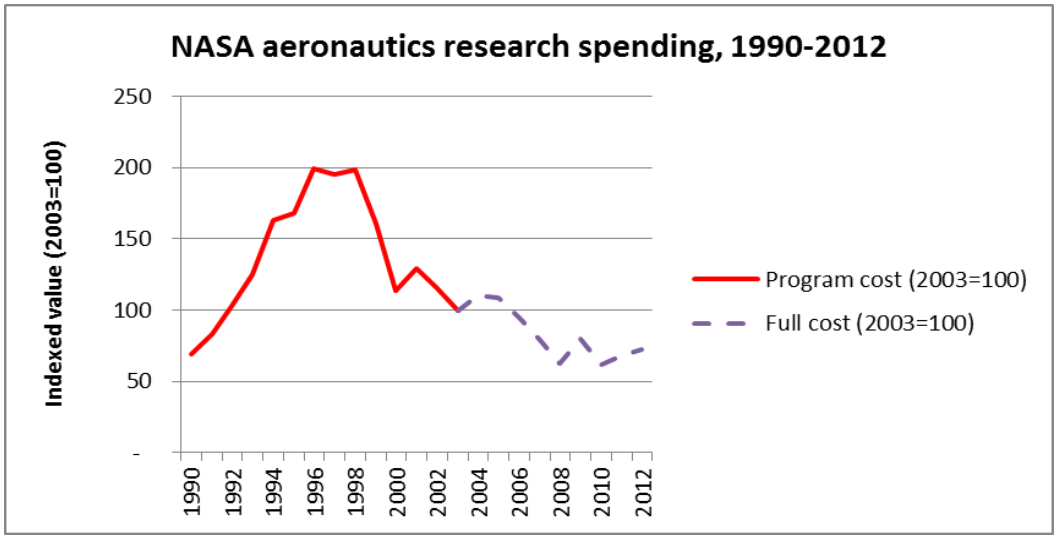
[1174] We note that, pursuant to the NASA-Boeing Patent License Agreement, Boeing grants to the U.S. Government "an irrevocable, non-exclusive, non-transferable, royalty-free license under the Patent Rights to use, make, offer for sale, sell, and import each Subject Invention for commercial purposes, without the right to: (A) sublicense this right; (B) exercise this right in a commercial venture of any type with a third party; or (C) have the Subject Invention made or sold by a third party for a commercial purpose". (NASA-Boeing Patent Licence Agreement, (Exhibit EU-251) (BCI), para. 2). While the U.S. Government receives such a license in cases where Boeing patents a technology, Boeing as patent owner nevertheless retains the right to use the patented technology for commercial purposes and license that technology to other entities for commercial endeavours, without paying the U.S. Government anything in return. As the parties have discussed, in cases where Boeing obtains title to an invention conceived in the course of work under an R&D contract, the U.S. Government retains "march-in" rights, under which the U.S. Government may compel a contractor to grant a commercial license to applicants on terms that are reasonable, or otherwise grant the licence itself. In this dispute, neither party has argued that the U.S. Government has exercised "march-in" rights. In any case, the fact remains that Boeing gains access and particular rights over the results of the research.

Policy Directive 1370.1 (NPD 1370.1), applies only to the *reimbursable* use of NASA facilities by foreign companies, which is not at issue in this proceeding.[1175]

8.142. NASA Policy Directive 1370.1 is entitled "Reimbursable Utilization of NASA Facilities by Foreign Entities and Foreign-Sponsored Research". It was originally effective 26 October 2007 and expires on 26 October 2017. NPD 1370.1 provides a general policy direction and identifies principles to be considered by NASA officials in connection with "*reimbursable* use of NASA facilities by, or for the benefit of foreign entities, or conducting of research on a *reimbursable* basis in collaboration with, or for the benefit of, foreign entities".[1176] We therefore agree with the European Union that it is not obvious from NPD 1370.1 that NASA has in fact changed its facilities usage policies regarding non-reimbursable or partially-reimbursable use of NASA facilities by foreign companies. Moreover, NPD 1370.1 sets forth specific guidelines for the use of NASA facilities by foreign entities bearing in mind that NASA's cooperation and collaboration with foreign entities are subject to "important standards and safeguards, reflecting the significant investment made by the Congress and the people of the United States in NASA's world-class facilities and expertise".[1177] We are not persuaded, on the basis of the evidence submitted by the United States, that foreign entities are entitled to use NASA facilities "on the same basis as U.S. companies".[1178]

8.143. Sixth, the United States asserts that NASA has more than halved funding for aeronautics research in the FY 2007-FY 2012 period compared to FY 1989-FY 2006, as illustrated in Chart 1 below[1179]:

Chart 1: NASA Aeronautics Research Spending, 1990-2012



Source: NASA Subsidies to Boeing's LCA Division, (Exhibit EU-36); NASA/DOD/DOC Aeronautics R&D Subsidies to Boeing's LCA Division, (Exhibit USA-19); and NASA, Fiscal Year 2004 Budget Estimates, pp. S&AP 2-1 to 2-6, (Exhibit USA-20).

8.144. The United States argues that while the European Union asserts that NASA paid Boeing USD 1.8 billion for non-engine aeronautics research under the challenged aeronautics R&D programmes from FY 2007 through FY 2012, the real value of payments is vastly lower at approximately USD 118 million, while the value of the provision of NASA equipment under the post-2006 procurement contracts was approximately USD 6 million. Space Act Agreements

[1175] European Union's second written submission, para. 198.
[1176] NASA Policy Directive 1370.1 (26 October 2007), (Exhibit USA-256), section 1(a). (emphasis added)
[1177] NASA Policy Directive 1370.1 (26 October 2007), (Exhibit USA-256), section 1(c).
[1178] United States' first written submission, para. 110.
[1179] United States' first written submission, para. 94. The United States explains that the broken and unbroken lines in Chart 1 reflect that NASA moved to full cost accounting in 2004. At that time, NASA published 2003 data under the previous programme cost methodology and the full-cost methodology, which allows construction of a 1990-2003 index series for program cost and a 2003-2012 index series for full cost. The United States indicates that these data reflect the European Union's adjustments to remove certain expenditures that it has not challenged. According to the United States, the real change in resource commitment is even more stark, as these figures do not account for inflation.

provided access to facilities, equipment, and employees of approximately USD 12 million.[1180] The European Union considers the United States' estimate is based on a flawed and overly narrow conceptual notion of what should be counted and valued, and is inconsistent with the approach followed by the panel and the Appellate Body in the original proceeding.[1181]

8.145. In Section 8.2.2.6.2.2 of this Report, we conduct a detailed evaluation of the amount of the financial contributions provided to Boeing through the post-2006 NASA aeronautics R&D subsidies. We conclude that the more credible estimate of the amount of the financial contributions provided to Boeing through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements between 2007 and 2012 is approximately **[***]**.

8.146. Although it does appear that NASA's aeronautics R&D funding has declined, and that the amounts of payments and the value of the access to facilities, equipment, and employees to Boeing over the 2007-2012 period appear to be significantly less than over 1989-2006, in our view this is not relevant to the characterization of the measures as financial contributions. Finally, the United States argues that NASA has reduced the value of access to equipment, facilities, and employees in post-2006 procurement contracts such that the primary contribution from NASA involves payments, while on the contractor side, Boeing's contribution consists of services. The European Union considers the United States' estimate is based on flawed, narrow categories of information defined by U.S. Government contracting regulations, and that the United States has failed to provide a source of the listed data to confirm the accuracy of amounts.[1182]

8.147. In Section 8.2.2.6.2.2 of this Report, we estimate the value of the provision of access to NASA facilities, equipment, and employees under the post-2006 NASA procurement contracts. As we explain in that Section, of all the NASA procurement contracts under the challenged aeronautics R&D programmes through which Boeing received funding since 2006, less than half provided for access to facilities, equipment or employees. We have estimated that the value of the provision of access to such facilities (including the value of Boeing's use of NASA's computers) and equipment is approximately **[***]**.[1183] Additionally, the value of Boeing's access to NASA employees under the NASA procurement contracts is **[***]**, for a total value of access to facilities, equipment, and employees under these instruments of **[***]** between 2007 and 2012. The original panel found that the value of Boeing's access to NASA facilities, equipment and employees under contracts and agreements was USD 1.55 billion between 1989 and 2006.[1184] This equates to approximately USD 91 million per year. The United States is therefore correct that the value of facilities, equipment, and employees provided to Boeing has decreased during the 2007-2012 period as compared with the 1989-2006 period. However, the value of facilities, equipment, and employees must be considered with the other aspects discussed above to determine whether, overall, the relevant characteristics of the post-2006 NASA procurement contracts differ in such significant respects from the characteristics that led the Appellate Body to characterize the pre-2007 procurement contracts as composite transactions that were collaborative joint ventures.

8.148. Summarizing our evaluation of the ways in which the relevant characteristics of the post-2006 NASA procurement contracts are said to differ from those of the pre-2007 procurement contracts which led to the Appellate Body's characterization of them as "collaborative arrangements" that were "composite in nature" and were "akin to a species of joint venture"[1185], we have concluded as follows:

a. While there may have been a shift in focus in very general terms to fundamental research and away from technology development under at least some of the NASA aeronautics R&D programmes (e.g. the Fundamental Aeronautics Program), we are not persuaded that this shift is necessarily reflected in the nature of the work that Boeing performed under the post-2006 procurement contracts between NASA and Boeing that were funded under the relevant aeronautics R&D programmes. Our review of the nature

[1180] United States' first written submission, para. 113.
[1181] European Union's second written submission, paras. 258-269.
[1182] European Union's second written submission, paras. 262-269.
[1183] See paras. 8.263, 8.264 and 8.266-8.268 for explanations of the Panel's estimate of the value of access to NASA facilities (including the value of Boeing's use of NASA's computers) and equipment under the NASA procurement contracts and cooperative agreements, and paras. 8.246 and 8.270-8.274 regarding the estimate of the value of access to NASA employees under the NASA procurement contracts.
[1184] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1109.
[1185] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 597.

of the work performed by Boeing under these contracts suggests that, notwithstanding how the research is characterized, it is clearly of independent commercial interest to Boeing, i.e. over and above that as a provider to research services to NASA as a client. In any case, it appears from a number of programme and project materials that NASA's realigned research focus in 2006 was undertaken with the ultimate goal of supporting U.S. leadership in aerospace.

b. While NASA may have removed references to increasing the competitiveness of U.S. industry as an evaluation criterion and reformulated the NASA aeronautics research objectives as aiming at producing broad public goods in certain respects, NASA retains the statutory objective of preserving the role of the United States as a leader in aeronautical and space science and technology. It also continues to acknowledge the role of the NASA aeronautics R&D programmes in promoting the competitiveness of the U.S. aeronautics industry in a number of budget materials, as well as project descriptions, RFIs and NRAs under particular programmes.

c. We are not persuaded that NASA's issuance of NRAs rather than RFPs as a means to set research priorities and solicit research proposals from industry and academia necessarily reduces the role of contractors in setting research priorities and thus the scope for collaboration in determining the technologies to be researched. In any case, it would appear that, notwithstanding the NRA process introduced in 2006, a significant number of procurement contracts, task orders and cooperative agreements awarded by NASA to Boeing since FY 2006 in fact occurred outside the NRA process.

d. While certain post-2006 procurement contracts do not include LERD clauses or restrict the dissemination of data, this does not mean that there is no longer the sort of sharing of the research outcomes that led the Appellate Body to conclude that there is not a simple exchange of the outputs of the research (e.g. scientific and technical information, discoveries, and data) for monetary consideration.

e. The United States has not adequately substantiated its assertion that NASA has changed its facilities usage policies to permit access by foreign entities on the same basis as U.S. companies.

f. The amounts of funding and value of provision of access to facilities, equipment, and employees to Boeing through the relevant procurement contracts have declined over the 2007-2012 period compared with 1989-2006, and it appears more generally that NASA has significantly reduced its aeronautics research spending in FY 2007-FY 2012 compared to FY 1989-FY 2006. However, we do not consider this factor to be relevant to the appropriate characterization of the post-2006 NASA procurement contracts that is undertaken as part of the financial contribution analysis.

g. It appears that the value of the provision of access to NASA facilities, equipment, and employees under the post-2006 NASA procurement contracts is significantly lower than the amount of payments. However, it is not apparent to us why this should determine our characterization of the post-2006 NASA procurement contracts for purposes of the financial contribution analysis in light of the other factors we have discussed above.

8.149. We therefore are not persuaded of the United States' position that almost all of the facts that led to the Appellate Body's conclusion that the pre-2007 NASA procurement contracts were "akin to a species of joint venture" are no longer applicable with respect to the post-2006 NASA procurement contracts.[1186] Rather, the differences between the two sets of instruments (which the Panel considers are less significant than the United States contends), taken together, are not such that it would no longer be accurate to characterize the post-2006 NASA procurement contracts in a similar manner to the manner in which the Appellate Body characterized the pre-2007 NASA procurement contracts. The United States argues additionally that the above changes to the post-2006 NASA procurement contracts mean that the transactions under these instruments are in fact most appropriately considered to be purchases of services.[1187] While it may be possible to

[1186] See United States' first written submission, para. 224.

[1187] United States' first written submission, para. 225. To recall, the United States refers to the following features of the post-2006 NASA procurement contracts which it argues point both to the inaccuracy of

describe the primary formal legal transaction between NASA and Boeing under the post-2006 NASA procurement contracts as involving a purchase of research services, an important aspect of the characterization exercise is to examine the overall context in which NASA and Boeing interact. The United States does not address this factor adequately in our view. Indeed, both parties attempt to extract from the Appellate Body's discussion of the characteristics of the pre-2007 NASA procurement contracts that led to their characterization as being "akin to a species of joint venture" a "checklist" of features that are said to point to the post-2006 NASA procurement contracts being either joint ventures or purchases of services, without adequately engaging with the issue of the relationship between NASA and Boeing in the specific context of when NASA contracts Boeing to perform R&D work under the relevant aeronautics R&D programmes.[1188]

8.150. While the Appellate Body discussed the various technical elements of the transactions under the pre-2007 NASA procurement contracts, its overall conclusion was that the *nature of the relationship between NASA and Boeing in the particular context* was essentially one of "partnership".[1189] Accordingly, it considered that NASA did *more than* pay Boeing to conduct R&D[1190]; the research was *jointly* undertaken by NASA and Boeing[1191]; the *direct partnership* between NASA and Boeing was supported by the NASA procurement contracts and cooperative agreements[1192]; and NASA considered the *partnership* with Boeing to be more significant than the funding provided as such.[1193]

8.151. We are not persuaded that the nature of research that NASA commissions Boeing to undertake under the post-2006 procurement contracts has changed significantly compared to the research that NASA commissioned under the pre-2007 procurement contracts. Significantly, NASA's aeronautics R&D programmes retain the promotion of the competitiveness of the U.S. aeronautics industry as a fundamental objective, whether in the programme budgets, the RFIs, or specific project descriptions. In other words, NASA's objectives remain closely aligned with those of Boeing and the U.S. aeronautics industry in that NASA essentially commissions Boeing to perform research that NASA hopes will, among other things, support and advance the competitive interests of the U.S. aeronautics industry. We therefore consider that, notwithstanding that the technical elements of the transactions may consist of payments in exchange for the performance

characterizing the transactions under these instruments as "akin to a species of joint venture" and to the conclusion that the transactions are most appropriately characterized as purchases of services: (a) that the subjects to be researched are no longer determined collaboratively between NASA and industry, rather, the reformulation of ARMD's research programme through the NRA process means that NASA decides research topics on its own; (b) the value of any access to NASA equipment, facilities, and employees is far lower under the post-2006 NASA procurement contracts than the panel found under the pre-2007 procurement contracts and the European Union has provided no evidence that research teams engaged under post-2006 NASA procurement contracts mixed industry and NASA employees; (c) there is no evidence of any post-2006 procurement contract in which the value of any access to NASA facilities, equipment, or employees was significantly higher than the value of the payments; (d) while the pre-2007 procurement contracts were found to involve NASA and Boeing pooling non-monetary resources and employees, most of the post-2006 procurement contracts do not provide for facilities or equipment, and none of them refers to a "pooling" of employees; (e) while Boeing still does not pay any royalties to NASA for commercial rewards arising from the scientific and technical output of the research where the Boeing employee, working alone or jointly with a NASA employee, performs the work that results in the invention, this is not the case where a NASA employee invents the invention. In that case, NASA owns the invention and Boeing would have to pay a royalty; and (f) NASA has discontinued the use of LERD clauses which were said to give Boeing the exclusive right to exploit technology resulting from pre-2007 NASA procurement contracts in which they were contributing a significant amount of their own resources to the research efforts.

[1188] While the United States identifies six factors, as recounted in fns 1074 and 1187 above, the European Union considers that the Appellate Body relied on only three characteristics to find that the pre-2007 NASA procurement contracts were joint ventures: (a) both parties committed resources; (b) the parties share the fruits of the research; and (c) the subjects to be researched are often determined collaboratively. (European Union's second written submission, para. 244).

[1189] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 598-600.

[1190] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 594.

[1191] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 595.

[1192] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 599.

[1193] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 600. The Appellate Body took a similar approach when discussing the relevant characteristics of the DOD assistance instruments. In addition to referring to the composite nature of the transactions (as involving a combination of funding and access to facilities), the collaborative nature of the transactions (as involving a pooling of monetary and non-monetary resources on the input side and a sharing of the fruits of the research on the output side) it said that the activities were undertaken in pursuit of a *common goal for the benefit of both DOD and Boeing*. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 609).

of research services, NASA and Boeing nonetheless remain engaged in a collaborative enterprise, in pursuit of a common goal, in which they both have a stake in the risks and returns. In other words, considered in their proper context, the post-2006 NASA procurement contracts are most appropriately characterized as collaborative R&D arrangements between NASA and Boeing, in the same way that the Appellate Body characterized the pre-2007 NASA procurement contracts. While there may well be a purchase of services component to these transactions, the characterization of the post-2006 NASA procurement contracts as purchases of services is incomplete and inaccurate when the instruments are considered in their proper context, especially in light of the nature of the relationship between NASA and Boeing in performing the contracted research.[1194]

Whether the post-2006 NASA procurement contracts, as collaborative R&D arrangements, involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement

8.152. The United States advances three additional arguments in support of its position that, even if the Panel were to conclude that the post-2006 NASA procurement contracts, in terms of their relevant characteristics, are "akin to a species of joint venture", the particular characteristics of the transactions do not support the conclusion that the measures are analogous to equity infusions.

8.153. First, the United States argues that the fact that funding is provided in expectation of some kind of return cannot be a defining characteristic of post-2006 NASA procurement contracts because *all* transactions that provide funding involve the expectation of some kind of return. In addition, the United States submits that the "return" on NASA research, unlike the return on an equity investment, is always a "sure thing", which it argues, is reflected in the Appellate Body's finding that NASA and Boeing learned valuable lessons from research that failed. Finally, the United States contends that the fact that funders' risks are limited to the amount of money they commit and the opportunity cost of other support they provide cannot be a defining characteristic of a joint venture, because this is true equally in the case of a purchase of goods or of services.[1195]

8.154. The European Union considers that the post-2006 NASA procurement contracts satisfy the Appellate Body's criteria for demonstrating that they are "akin to equity infusions in joint ventures"[1196], and that the United States does not in fact dispute that the key criteria are met with respect to post-2006 NASA contracts. Notably, it argues that the United States acknowledges that funding of post-2006 NASA procurement contracts is provided in expectation of some kind of return, that funders' risks are limited to the amount of money they commit and the opportunity cost of other support they provide, that NASA research is sometimes unsuccessful, and that sometimes NASA provides access to facilities, equipment and employees under the arrangements.[1197]

8.155. As we see it, the United States' arguments as to why the post-2006 NASA procurement contracts, even if characterized as being like joint ventures, should not be considered analogous to equity infusions, would apply equally to the pre-2007 NASA procurement contracts analysed by the Appellate Body. As such, it seems to us that the United States' disagreement is with the analysis of the Appellate Body regarding the aspects of the pre-2007 NASA procurement contracts that the Appellate Body considered to render them analogous to equity infusions and thus, to involve a direct transfer of funds under Article 1.1(a)(1)(i). We do not consider it appropriate in this compliance proceeding to depart from the legal reasoning of the Appellate Body in the original proceeding. Having concluded that, despite some differences between the relevant characteristics of the post-2006 NASA procurement contracts and their pre-2007 counterparts, it is nevertheless appropriate to characterize the post-2006 NASA procurement contracts before us in this proceeding in the same manner as the Appellate Body characterized the pre-2007 NASA procurement contracts in the original proceeding, we do not consider it appropriate to depart from

[1194] The Panel therefore rejects the United States' argument that the transactions are more properly characterized as purchases of services and consequently, considers it unnecessary to address the United States' arguments that transactions appropriately characterized as purchases of services are excluded from the scope of Article 1.1(a)(1) of the SCM Agreement.

[1195] See United States' second written submission, paras. 221-223.

[1196] European Union's second written submission, para. 246.

[1197] European Union's second written submission, para. 246.

the reasoning of the Appellate Body as to why such measures are analogous to equity infusions and thus involve a direct transfer of funds within the meaning of 1.1(a)(1)(i).

8.156. Accordingly, consistent with the Appellate Body's findings in respect of the pre-2007 NASA procurement contracts in the original proceeding, we conclude that the post-2006 NASA procurement contracts have characteristics analogous to equity infusions, wherein payments under post-2006 NASA procurement contracts involve direct transfers of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, and any provision of access to NASA facilities, equipment, and employees provided to Boeing under those instruments constitutes the provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.

8.157. **For these reasons, we find that the payments and provision of access to NASA facilities, equipment, and employees to Boeing through the post-2006 NASA procurement contracts funded under four NASA aeronautics R&D programmes (the Fundamental Aeronautics Program; the Integrated Systems Research Program; the Aviation Safety Program; and the Aeronautics Test Program) constitute financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.[1198] Specifically, the payments provided by NASA constitute financial contributions as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i), and the provision of access to facilities, equipment, and employees qualifies as a government provision of goods or services other than general infrastructure under Article 1.1(a)(1)(iii) of the SCM Agreement**.

8.158. In light of our conclusions in paragraphs 8.103 and 8.157, it is unnecessary for us to address the European Union's alternative argument that what it refers to as the transfer to Boeing of patent and other intellectual property rights could separately be considered a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[1199]

8.159. Having found that the post-2006 NASA aeronautics R&D measures at issue in this proceeding are financial contributions, we next consider whether these financial contributions confer a benefit.

8.2.2.4 Whether there is a benefit

8.2.2.4.1 Main arguments of the parties and third parties

8.160. The European Union argues that the financial contributions provided through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements under the challenged NASA aeronautics R&D programmes confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.

8.161. With regard to the post-2006 NASA procurement contracts, the terms of which were modified by the NASA-Boeing Patent Licence Agreement of 23 September 2012, the European Union's arguments as to why the financial contributions provided through those contracts confer a benefit are the same as those it makes as to why the modifications to the pre-2007 NASA procurement contracts, also effected by the NASA-Boeing Patent Licence Agreement fail to remove the benefit.[1200]

8.162. The European Union argues that the reasoning of the Appellate Body in the original proceeding that the pre-2007 NASA procurement contracts and DOD assistance instruments conferred a benefit, applies equally to the post-2006 NASA procurement contracts and cooperative agreements, the terms of which have not been modified by the NASA-Boeing Patent Licence Agreement, as these arrangements "have precisely the same factual and legal characteristics as the pre-2007 NASA R&D contracts and agreements" that were subject to the Appellate Body's findings on benefit in the original proceeding, and are not provided on the basis of commercial considerations.

[1198] We recall our explanation in fn 1133 above that the Aeronautics Test Program funded only Space Act Agreements (rather than procurement contracts or cooperative agreements) with Boeing.
[1199] See para. 8.87 above.
[1200] See paras. 8.8 to 8.15 above.

8.163. The European Union submits that the fact that post-2006 NASA procurement contracts are subject to competitive bidding should have no effect on the benefit analysis because, pursuant to the Bayh-Dole regime and NASA-specific regulations for allocating intellectual property rights under U.S. Government R&D contracts (which the European Union considers have the explicit, non-commercial purpose of assisting U.S. industry), the allocation of patent rights is uniform and ownership of any intellectual property is not open to bidding, and thus would not be a determinative element in bidding. It argues that the United States has provided no evidence to support its assertions that the intellectual property rights allocated to Boeing through any of the aeronautics R&D contracts and agreements were provided in exchange for Boeing accepting a lower profit margin, lower levels of cost reimbursement, or a lower fixed-price contract.[1201] In addition, the European Union submits that the Appellate Body rejected a similar argument made by the United States in the context of the original DOD assistance instruments.[1202] Thus, the benefit resulting from the post-2006 NASA procurement contracts arises from the "systematically skewed (in comparison to the market) allocation of patent rights" in U.S. Government R&D contracts.[1203]

8.164. Finally, with respect to non-reimbursable and partially-reimbursable post-2006 Space Act Agreements, the European Union contends that the United States has made no allegation that they are any different in nature than the pre-2007 Space Act Agreements, and therefore that the original panel finding of benefit should be sustained.[1204] In the event that the Panel does not base its finding on the original panel finding of benefit, the European Union argues that the post-2006 Space Act Agreements provide a benefit for the same reason as the NASA procurement contracts, because the transactions in the market result in an equilibrium that is more favourable to the commissioning party than the transactions pursuant to post-2006 Space Act Agreements. The European Union submits that the United States has not demonstrated that NASA receives something of genuine value in exchange for providing Boeing with the use of NASA facilities and equipment through non-reimbursable and partially-reimbursable Space Act Agreements.[1205] Moreover, the European Union argues that the allocation of intellectual property rights under Space Act Agreements does not preclude the Panel from finding that Space Act Agreements provide a benefit for the same reasons as the NASA procurement contracts. The European Union refers to the intellectual property provisions of one "representative example SAA" referred to by the United States, submitting that this Space Act Agreement "appears to have the same limitations as the NASA R&D contracts and agreements at issue".[1206]

8.165. The United States argues that the European Union has failed to meet its burden to establish that the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements at issue in this proceeding confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.

[1201] European Union's comments on the United States' response to Panel question No. 67, paras. 25 and 65. Mr Razgaitis opines that the lack of bargaining power over intellectual property ownership under U.S. Government R&D contracts discredits the United States' arguments regarding the impact of competitive bidding on the exchange of value in DOD and NASA procurement contracts. According to Mr Razgaitis, because of the provisions of U.S. law that "preclude" DOD and NASA from bargaining over ownership of intellectual property rights, Boeing does not need to "underbid" to fully account for the net present value of the foreground intellectual property. Mr Razgaitis considers that there is no evidence that Boeing, or any other commissioned party, in practice reduces its RDT&E costs because of the Bayh-Dole provisions. (Second Supplemental Declaration of R. A. Razgaitis, Sr., Ph.D., CLP, 17 December 2014 (Second Supplemental Razgaitis Declaration), (Exhibit EU-1398), para. 49).

[1202] European Union's second written submission, para. 311 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 665 and 666).

[1203] European Union's response to Panel question No. 25, para. 138 ("{t}he benefit resulting from the R&D contracts and agreements at issue is evidenced, in part, by the systematically skewed (in comparison to the market) allocation of patent rights in the U.S. government R&D contracts"). See also European Union's response to Panel question No. 26, para. 162 ("{r}ather, once, as here, it is clear that there is a benefit associated with systematically gifting the relevant IP rights in advance, that should be sufficient for the purposes of the {benefit} analysis").

[1204] European Union's second written submission, para. 314.

[1205] European Union's first written submission, para. 181; European Union's second written submission, para. 315.

[1206] European Union's second written submission, para. 317.

8.166. With respect to the post-2006 NASA procurement contracts the terms of which have not been modified by the NASA-Boeing Patent Licence Agreement[1207], the United States argues that the European Union has failed to establish that such measures are more favourable to Boeing than comparable commercial arrangements and the Panel should therefore find that these arrangements do not confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.

8.167. The United States criticizes the European Union's approach to determining the commercial consistency of the post-2006 R&D procurement contracts based on only one term of the contract (i.e. the allocation of patent rights). According to the United States, a thorough and systematic review of the evidence indicates that the terms under which the U.S. Government commissions research work are no more advantageous to the recipient than comparable commercial transactions.[1208] This analysis should extend beyond patent rights to consider how other terms of the contract affect the balance of value between the parties, in particular the price that commercial commissioning parties pay for the rights they acquire.[1209]

8.168. The United States argues that an appropriate benchmark for assessing whether the post-2006 NASA procurement contracts confer a benefit should properly reflect the type of financial contribution. Although the post-2006 NASA procurement contracts are properly characterized as purchases of services, the United States submits that, even if the Panel were to conclude that the post-2006 NASA procurement contracts are financial contributions, it would still need to take into account that the transactions are "in substance, purchases of services" and that NASA was "purchasing something".[1210] The context provided by Article 14(d) of the SCM Agreement indicates that the proper standard for assessing whether government purchases confer a benefit is the adequate remuneration standard. Under this standard, a benefit would exist only if the U.S. Government paid too much for the rights it obtained. The adequate remuneration standard therefore focuses on what the government purchased, and not what a private entity would have purchased in similar circumstances, and asks whether the government paid too much (i.e. more than adequate remuneration) for what it sought to buy; in this case, the purchase of own-use rights in patents that result from research. The United States argues that the European Union fails to address this standard.[1211]

8.169. The United States disagrees with the European Union that whether the post-2006 NASA procurement contracts involved competitive bidding is irrelevant to whether they confer a benefit, based on the Appellate Body's rejection of a similar argument regarding the pre-2007 DOD assistance instruments in the original proceeding.[1212] The United States argues that the Appellate Body's statement regarding competitive bidding in the original proceeding addressed only DOD assistance instruments, which the Appellate Body had differentiated from DOD procurement contracts. The United States argues that the Appellate Body's statements in *Canada – Renewable Energy / Canada – Feed-in Tariff Program* indicate that the relevance of competitive bidding to the analysis of benefit depends on the facts.[1213] Moreover, economically rational bidders will factor the

[1207] The United States does not set out specific arguments as to whether post-2006 NASA cooperative agreements are more favourable to Boeing than comparable commercial arrangements, as it submits that "their value is so small in relation to contracts that these differences do not affect the overall outcome". (United States second written submission, fn 111; response to Panel question No. 156, fn 36).

[1208] United States' response to Panel question No. 67, para. 11.

[1209] The United States argues that a "narrow" approach to benefit, focused on isolated terms of a transaction, is contrary to the SCM Agreement. It notes that in *EC and certain member States – Large Civil Aircraft*, the panel and Appellate Body considered all aspects of the transaction, including the interest rate, term of loan, royalties, fees, and expected delivery schedules as part of the evaluation as to whether, as a whole, the terms the EU member States offered to Airbus were more favourable than those available in the market. (United States' response to Panel question No. 67, para. 13). See also United States' first written submission, para. 238.

[1210] United States' first written submission, para. 237; second written submission, para. 232.

[1211] United States' first written submission, paras. 253 and 254; second written submission, paras. 232 and 233.

[1212] United States' second written submission, para. 235. See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 665: "intellectual property is not open to bidding: it is determined by US law. Because each bidder knows in advance that this particular aspect of the transaction will not be altered with respect to its competitors, ownership of any resulting intellectual property will not be a determinative element in how each bidder structures its proposals."

[1213] Appellate Body Reports, *Canada – Renewable Energy / Canada – Feed-in Tariff Program*, para. 5.228: "{a}lternatively, such benchmark may also be found in price-discovery mechanisms such as

cost or value of a fixed term of a bid (such as the allocation of intellectual property rights) into the economic value of the overall package, and adjust the bid accordingly.[1214] Thus, there is no basis to treat the Appellate Body's statement regarding competitive bidding in respect of the pre-2007 DOD assistance instruments as applicable to the benefit analysis for the post-2006 NASA procurement contracts. The United States asserts that "all of the NASA aeronautics research contracts" are subject to competitive bidding, and the process of competitive bidding confirms that NASA did not pay more than adequate remuneration for its post-2006 procurement contracts. Rather, NASA's monetary contribution under the post-2006 NASA procurement contracts is consideration for the enhanced data rights it obtains, and thus confirms that the post-2006 NASA procurement contracts reflect a negotiated bargain.[1215]

8.170. With respect to the post-2006 NASA procurement contracts the terms of which were modified by the NASA-Boeing Patent Licence Agreement, the United States argues that these procurement contracts reflect the same allocation of intellectual property rights as the amended pre-2007 NASA procurement contracts.

8.171. Finally, as with the pre-2007 Space Act Agreements at issue, the United States argues that the European Union fails to identify any relevant benchmark to explain how post-2006 Space Act Agreements achieve an equilibrium that is more favourable to Boeing than comparable commercial transactions. The European Union fails to take into account that Space Act Agreements do not involve any funding by the U.S. Government[1216], sometimes involve payments by Boeing to NASA, and include intellectual property terms that are not the same as those under the post-2006 NASA procurement contracts. Accordingly, there is no basis for the European Union's argument that Space Act Agreements confer a benefit for the same reasons as the NASA contracts and agreements. As Boeing contributes its own resources under Space Act Agreements, without receiving any funding from NASA, the United States contends that there is a relationship between the level of patent rights and the level of contribution to the research effort, and therefore, that the post-2006 Space Act Agreements do not confer a benefit within the meaning of Articles 1.1(b) of the SCM Agreement.[1217]

8.172. Certain of the third parties (Brazil, Japan, and Korea) make arguments regarding the existence of a benefit within the meaning of Article 1.1(b) of the SCM Agreement. These arguments are summarized in Section 8.1.2 above.

8.2.2.4.2 Evaluation by the Panel

8.173. In this Section of the Report, we evaluate whether the following categories of post-2006 NASA aeronautics R&D measures, which we find to involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement, confer a benefit within the meaning of Article 1.1(b):

a. post-2006 NASA procurement contracts and cooperative agreements included in annex A of the United States' Compliance Communication (these having been modified by the NASA-Boeing Patent Licence Agreement to grant a commercial use licence to NASA on the terms explained in Section 8.1.3.2 above);

b. post-2006 NASA procurement contracts and cooperative agreements that have not been modified by the NASA-Boeing Patent Licence Agreement; and

c. post-2006 Space Act Agreements.

8.174. In undertaking these evaluations, we first address the relevant approach that we should take in determining whether the post-2006 NASA procurement contracts and cooperative

competitive bidding or negotiated prices, which ensure that the price paid by the government is the lowest possible price offered by a willing supply contractor."

[1214] United States' second written submission, para. 237.

[1215] United States' first written submission, para. 255; second written submission, paras. 234-237.

[1216] The United States points out that there are "a very limited number of funded SAAs, used by NASA's space program to foster the development of commercial space transportation vehicles". (United States' second written submission, fn 361).

[1217] United States' first written submission, para. 257; second written submission, paras. 239-244.

agreements, both those that were modified by the NASA-Boeing Patent Licence Agreement and those that were not, confer a benefit.

8.175. The European Union argues that we should adopt the same benefit analysis that the Appellate Body adopted in concluding that the original (pre-2007) NASA procurement contracts and DOD assistance instruments conferred a benefit. The United States argues that the proper standard for assessing whether a financial contribution confers a benefit depends on the nature of the financial contribution, and in the case of the post-2006 NASA procurement contracts, the fact that NASA was purchasing something in the transactions must play a role in the assessment of benefit. The United States acknowledges that cooperative agreements are the only NASA instruments that provide for the possibility of "joint funding" by NASA and participating private entities, as well as non-cash in kind contributions.[1218]

8.176. We recall our previous conclusion that, for the reasons set forth in Section 8.2.2.3 of this Report, the post-2006 NASA procurement contracts are properly characterized as collaborative R&D arrangements on the basis of their relevant characteristics.[1219] Accordingly, we find in Section 8.2.2.3.2 that the payments provided to Boeing through post-2006 NASA procurement contracts and cooperative agreements funded under the relevant NASA aeronautics R&D programmes are financial contributions in the form of direct transfers of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, while the provision of access NASA to facilities, equipment, and employees through such instruments is a financial contribution in the form of a provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[1220]

8.177. In the original proceeding, the Appellate Body characterized the pre-2007 NASA procurement contracts as collaborative R&D arrangements which involved financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement and then determined whether they conferred a benefit by comparing the allocation of intellectual property rights under those contracts with the allocations of intellectual property rights in private collaborative R&D agreements which it treated as evidence of market practice in this regard. We recall that this is a compliance proceeding. In these circumstances, we consider it incumbent upon this compliance Panel to adopt the same approach to determining whether the post-2006 NASA procurement contracts and cooperative agreements confer a benefit as the Appellate Body took to determining whether the similarly characterized pre-2007 NASA procurement contracts at issue in the original proceeding conferred a benefit.

8.178. We will therefore evaluate whether the financial contributions provided through the post-2006 NASA procurement contracts confer a benefit by comparing the allocation of rights to own and use patents between NASA and Boeing under post-2006 NASA procurement contracts with the evidence before us concerning the allocation of such rights in collaborative R&D arrangements between market actors. We will evaluate whether the financial contributions provided through the cooperative agreements confer a benefit in the same way, considering that transactions under these arrangements are also most appropriately characterized as collaborative R&D arrangements, and given that NASA provides payments to Boeing under these arrangements as it does under procurement contracts. We will also evaluate whether the financial contributions provided through the post-2006 Space Act Agreements confer a benefit.

8.179. Unlike the characterization of the post-2006 NASA procurement contracts that we conducted in connection with our evaluation of whether those measures involved financial contributions, our consideration of whether the financial contributions provided through the NASA procurement contracts confer a benefit requires us to distinguish between two sub-groups of post-2006 NASA procurement contracts, owing to the fact that there are different intellectual

[1218] United States' second written submission, fn 220 ("cooperative agreements are the only instruments used by NASA that provide for 'joint funding,' and they did not represent a significant share of NASA's payments to Boeing at any point from 1989 to the present"). NASA will provide funding under these arrangements, except in the case of "no-cost extensions". See also NASA, Grant and Cooperative Agreement Handbook, Part 1260, (November 2014), (Exhibit EU-1369); and *United States Code of Federal Regulations*, Title 14, section 12.60.12(b).

[1219] We rejected the United States' argument that post-2006 NASA procurement contracts are more appropriately characterized as purchases of services.

[1220] See paras. 8.103 and 8.157 above.

property allocations for certain post-2006 instruments that were modified by the NASA-Boeing Patent Licence Agreement, and those that were not.[1221]

8.180. We begin by considering whether the post-2006 NASA procurement contracts that have been modified by the NASA-Boeing Patent Licence Agreement (these instruments are listed in annex A of the United States' Compliance Communication and are listed in the appendix to the NASA-Boeing Patent Licence Agreement), confer a benefit within the meaning of Article 1.1(b). We then conduct a benefit determination with respect to the post-2006 NASA procurement contracts and cooperative agreements that have not been modified by the NASA-Boeing Patent Licence Agreement, followed by the post-2006 Space Act Agreements, which also have not been modified by the NASA-Boeing Patent Licence Agreement.

8.2.2.4.2.1 Post-2006 NASA procurement contracts and cooperative agreements that have been modified by the NASA-Boeing Patent Licence Agreement

8.181. We find in Section 8.1.3 of this Report that the grant to NASA of commercial use rights in respect of Boeing-owned patents under the pre-2007 NASA procurement contracts[1222] effected by the NASA-Boeing Patent Licence Agreement has not brought those instruments into line with prevailing market practices for collaborative R&D arrangements in such a way as to remove the benefit that the Appellate Body had found was conferred through the pre-2007 NASA procurement contracts in the original proceeding.[1223] The analysis in Section 8.1.3 underlying this finding with respect to the pre-2007 NASA procurement contracts and cooperative agreements modified by the NASA-Boeing Patent Licence Agreement applies equally to the post-2006 NASA procurement contracts that have been modified by the NASA-Boeing Patent Licence Agreement.

8.182. **We therefore find that the financial contributions in the form of payments and access to NASA facilities, equipment, and employees, provided through certain post-2006 NASA procurement contracts and cooperative agreements that have been modified by the NASA-Boeing Patent Licence Agreement, confer a benefit, within the meaning of Article 1.1(b) of the SCM Agreement.**

8.2.2.4.2.2 Post-2006 NASA procurement contracts and cooperative agreements that have not been modified by the NASA-Boeing Patent Licence Agreement

8.183. We next evaluate whether other post-2006 NASA procurement contracts and cooperative agreements that have not been modified by the NASA-Boeing Patent Licence Agreement (and therefore, were not included in annex A of the United States' Compliance Communication), confer a benefit within the meaning of Article 1.1(b).

8.184. As explained above, the NASA-Boeing Patent Licence Agreement granted NASA, as commissioning party, a limited commercial use licence in respect of Boeing-owned patents arising from work performed by Boeing under the NASA procurement contracts and cooperative agreements to which it applies. In Section 8.1.3.2 above, we conclude, based on our assessment of the evidence of comparable private collaborative R&D agreements, and of the opinions of the parties' respective technology licensing experts, that Boeing as commissioned party under the modified NASA procurement contracts, remains in a more favourable position as regards its ability to commercially exploit Boeing-owned patents than the commissioned parties under the private collaborative R&D agreements.

8.185. The "unmodified" post-2006 NASA procurement contracts and cooperative agreements do not grant NASA a commercial use licence in respect of Boeing-owned patents. Boeing therefore has a more extensive ability to commercially exploit its patents under these arrangements than it has under the pre-2007 NASA procurement contracts and cooperative agreements and those

[1221] At para. 3 of its Compliance Communication, the United States advises that, in addition to modifying the rights accorded to the parties under the contracts covered by the DSB recommendations and rulings to make them consistent with commercial practice, "NASA has made identical modifications, as necessary, with regard to contracts subsequent to those covered by the recommendations and rulings of the DSB, without prejudice to the U.S. view that those contracts were not subsidies causing adverse effects to the European Union's interests. These contracts are also listed in Annex A."

[1222] See fn 972 above.

[1223] See para. 8.49 above.

post-2006 NASA procurement contracts that have been modified by the NASA-Boeing Patent Licence Agreement. Given that we conclude that the pre-2007 NASA procurement contracts and those post-2006 NASA procurement contracts that have been modified by the NASA-Boeing Patent Licence Agreement, confer a benefit on Boeing, logically we must also conclude that the post-2006 NASA procurement contracts and cooperative agreements that have not been modified to grant NASA a commercial use licence, confer a benefit.

8.186. This conclusion is also consistent with the Appellate Body's finding that the pre-2007 NASA procurement contracts in the original proceeding, which contain the same allocation of rights in respect of patents as the "unmodified", post-2006 NASA procurement contracts and cooperative agreements now before us, involved a more favourable allocation of intellectual property rights to Boeing as commissioned party than the allocations to commissioned parties under **[***]** and therefore conferred a benefit on Boeing.

8.187. **We therefore find that the financial contributions in the form of payments and the access to NASA facilities, equipment, and employees provided to Boeing through the post-2006 NASA procurement contracts and cooperative agreements that have not been modified by the NASA-Boeing Patent Licence Agreement confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.**

8.2.2.4.2.3 Space Act Agreements

8.188. We next consider whether the financial contributions provided through non-reimbursable and partially-reimbursable Space Act Agreements entered into between NASA and Boeing confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.[1224] Based on the parties' arguments, the principal issue before us is whether the benefit analysis in respect of NASA procurement contracts and DOD assistance instruments is also applicable to Space Act Agreements, or whether Space Act Agreements are sufficiently distinct as to warrant a different analysis of whether the transactions under those instruments confer a benefit. If a different analysis is required, the European Union has not provided evidence of relevant commercial benchmarks, and we would have no basis to conclude that Space Act Agreements confer a benefit.

8.189. Unlike NASA procurement contracts and cooperative agreements, and as set forth in Section 8.2.2.2.3, NASA does not make payments to Boeing under Space Act Agreements.[1225] However, transactions under Space Act Agreements share a number of features with transactions under NASA procurement contracts. Under both NASA procurement contracts and Space Act Agreements, Boeing is provided with access to NASA facilities, equipment, and employees, and Boeing also participates by providing in-kind contributions. In addition, the allocation of intellectual property rights and data rights is an important aspect of the terms of both NASA procurement contracts and Space Act Agreements. We find that the transactions under NASA procurement contracts and under Space Act Agreements are both properly characterized as collaborative R&D arrangements, wherein the access to NASA facilities, equipment, and employees that is provided to Boeing constitutes a financial contribution as a provision of goods or services other than general infrastructure, within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[1226] In the case of Space Act Agreements, although Boeing does not receive payments in exchange for its contribution, Boeing is not required to fully reimburse NASA for any such access to facilities, equipment and personnel provided by NASA under non-reimbursable and partially-reimbursable Space Act Agreements. Taking into account these similarities, we do not consider that the fact that NASA does not make payments to Boeing under Space Act Agreements of itself warrants a different approach to determining benefit from that adopted with respect to the NASA procurement contracts. The fact remains that Boeing may nevertheless advance its R&D activities and commercial objectives through the commercial use rights that it retains (e.g. title to inventions where these are made by Boeing employees or jointly by NASA employees and Boeing employees, as well as rights to data), in addition to contributing to NASA's particular mission or programme

[1224] As explained in Section 8.1.3.3 above, our assessment here of whether the financial contributions confer a benefit covers both pre-2007 and post-2006 Space Act Agreements.

[1225] NASA has determined that Space Act Agreements are not "procurement contracts", agreements, understandings or other arrangements, within the meaning of Section 305(j) of the Space Act (NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), p. 50 and fn 42). See also *United States Code*, chapter 35, section 201(b), and chapter 42, section 2457(j).

[1226] See Section 8.2.2.3.2.1 above.

objectives. We therefore consider that our approach to determining whether the NASA procurement contracts and cooperative agreements confer a benefit is also applicable to our assessment of benefit with respect to the non-reimbursable and partially-reimbursable Space Act Agreements before us.

8.190. As explained in Sections 8.1.3, 8.2.2.4.2.1, and 8.2.2.4.2.2 above, based on our review of commercial R&D arrangements, which the parties have submitted as evidence of relevant "market benchmarks"[1227], we conclude that **[***]**. Based on a comparison of the allocation between NASA and Boeing of the rights to own and use patents arising from work performed under NASA procurement contracts and cooperative agreements, with the allocations of such rights under a number of private collaborative R&D arrangements, we conclude that the allocation of patent rights under the NASA procurement contracts remains more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel, and accordingly, that the financial contributions provided through NASA procurement contracts and cooperative agreements confer a benefit within the meaning of Article 1.1(b).[1228]

8.191. We recognize that the distribution of intellectual property and related licence rights under the Space Act Agreements before us is not necessarily identical to that under NASA procurement contracts and cooperative agreements. According to the *Space Act Agreements Guide*, published by NASA and submitted as evidence in this proceeding, NASA elects to determine how rights to patents for inventions are allocated on a case-by-case basis, depending on whether work is likely to lead to inventions, and whether work is being performed *"for NASA*", or is not being performed for NASA.[1229]

8.192. If a nongovernmental contracting party performs work that is determined to be of an inventive type for NASA, the contracting party may obtain title to inventions it makes through an advance or an individual waiver, and NASA retains a government purpose licence in the invention.[1230] NASA indicates that "NASA liberally grants such waivers for the purpose of commercializing the waived invention"[1231], including for work that involves design, engineering, development, research or experimental work.[1232] If a nongovernmental contracting party is determined *not* to perform work of an inventive type for NASA, NASA obtains no rights in inventions made solely by the contracting party. NASA indicates that, "most {Space Act Agreements} do not involve work of an inventive nature being performed by the partner for NASA".[1233]

8.193. We observe that, in either of these circumstances, the fundamental balance of rights to own and use intellectual property remains more favourable to Boeing than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel. In the case of work that is deemed to be of an inventive type and is conducted *for* NASA, through the grant of an advance or individual waiver, the allocation of intellectual property rights between Boeing and NASA is similar to the allocation of intellectual property rights under NASA procurement contracts and other R&D contracts to which the Bayh-Dole regime applies. In the case of work that is determined *not* to be performed *for* NASA, NASA obtains no rights in inventions made solely by the contracting party. Other evidence before us indicates that each party retains the rights to its own intellectual property that is conceived in the course of work, and in the case of joint inventions, allocations of rights jointly belong to NASA and the contracting

[1227] These private R&D agreements include Contracts A through F which were also submitted in the original proceeding and a number of other private, commercial collaborative R&D agreements. Our evaluation of the allocation of intellectual property rights and rights resulting therefrom (i.e. licence rights) under these collaborative R&D arrangements is set out in a BCI Appendix (Appendix 1).

[1228] See paras. 8.181 and 8.185-8.187 above.

[1229] NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), pp. 50 and 51 (emphasis original).

[1230] NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), pp. 50 and 51.

[1231] NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), p. 50 and fn 43 (referring to Executive Order 12591, section 1, para. (b)(4)).

[1232] NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), fn 42.

[1233] NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), p. 51. NASA explains that, while it generally acquires no rights to any invention made solely by the partner, it may negotiate a licence to use a partner invention for research, experimental and evaluation purposes. (NASA, *Space Act Agreements Guide*, NAII 105-1A, (15 August 2008), (Exhibit USA-469), p. 52).

party, wherein NASA may retain a royalty-free, government purpose licence in respect of jointly-owned inventions.[1234] Although the balance of intellectual property rights in these circumstances is not identical to that which applies under the Bayh-Dole regime, the fundamental balance of intellectual property rights nevertheless remains one in which the U.S. Government lacks the right to obtain an *exclusive* licence in respect of Boeing-owned patents and thus, Boeing's ability to commercially exploit its patents is not contingent on the U.S. Government's election not to exercise exclusive rights to licence those patents for itself. The resulting allocation is therefore still more favourable to Boeing than the allocation of intellectual property rights under the private collaborative R&D agreements before the Panel.

8.194. We note finally, in addition to a more favourable allocation of intellectual property rights than is evidenced under private collaborative R&D agreements before the Panel, in terms of data rights, contracting parties under non-reimbursable and partially-reimbursable Space Act Agreements gain access to data that allows use for commercial purposes, and can prevent the release of data for a periods of between one and five years.[1235] This differs from the rights in data under NASA aeronautics R&D procurement contracts, where the U.S. Government receives "unlimited rights data", which enables it to use data for its own purposes, both inside and outside government.[1236]

8.195. Given that the allocation of patent rights and related licence rights is more favourable to Boeing than the allocation of patent rights and related licence rights under the private collaborative R&D agreements before the Panel, and that Boeing may additionally request that NASA restrict access to data that allows use for commercial purposes, we conclude that the financial contributions under NASA Space Act Agreements confer a benefit.

8.196. Based on the foregoing, we therefore find that, notwithstanding the fact that NASA does not make payments to Boeing under the challenged Space Act Agreements, and that Boeing may contribute funds in addition to in-kind contributions under partially-reimbursable Space Act Agreements, the Space Act Agreements achieve an equilibrium that is more favourable to Boeing than comparable commercial transactions, specifically the private collaborative R&D agreements before the Panel.

8.197. **Accordingly, we find that the financial contributions in the form of the access to NASA facilities, equipment, and employees provided to Boeing through the pre-2007 and post-2006 NASA Space Act Agreements before us confer a benefit, within the meaning of Article 1.1(b) of the SCM Agreement. Therefore, we also find that by not amending the terms of the pre-2007 Space Act Agreements that were found to constitute actionable subsidies in the original proceeding the United States has failed to withdraw the subsidy, within the meaning of Article 7.8.**

[1234] A contracting party may also obtain a royalty-bearing, commercial use license to NASA employee inventions or NASA's interest in any invention made jointly. See e.g. Space Act Agreement SAA1-1126 (formerly Exhibit US-13-273), (Exhibit EU-203) (BCI), p. 7; Agreement between NASA and Boeing for Aerospace Structures and Materials Research and Development, SAA1-757 (December 2005), (Exhibit USA-82), pp. 3-6; and Agreement between NASA and Boeing for Continued Software development of P-Beat (processes-Based Economic Analysis Tool), SAA3-1026 (June 2009), (Exhibit USA-50) (BCI), pp. 4-8.

[1235] See United States' first written submission, para. 214 ("{e}ach party typically takes the data rights its needs, with NASA maintaining the right to publish any data and use data in its other research, while Boeing has the right to preclude release of proprietary information for a fixed period of time"). The United States refers to several examples: Space Act Agreement SAA1-1126 (formerly Exhibit US-13-273), (Exhibit EU-203) (BCI), p. 7; Agreement between NASA and Boeing for Aerospace Structures and Materials Research and Development, SAA1-757 (December 2005), (Exhibit USA-82), pp. 3-6; and Agreement between NASA and Boeing for Continued Software development of P-Beat (processes-Based Economic Analysis Tool), SAA3-1026 (June 2009), (Exhibit USA-50) (BCI), pp. 4-8. See e.g. Space Act Agreement SAA1-1145, annex 1 (30 September 2011) (formerly Exhibit US-13-256), (Exhibit-EU-202) (BCI); Space Act Agreement SAA1-588, annex 25 (19 January 2007) (formerly Exhibit US-13-436), (Exhibit EU-200) (BCI); Space Act Agreement SAA3-1255, annex 1 (16 July 2012) (formerly Exhibit US-13-0163), (Exhibit EU-1036) (BCI); and Space Act Agreement SAA1-1155, annex 2 (January 2012) (formerly Exhibit US-13-0156), (Exhibit EU-191) (BCI).

[1236] The Appellate Body considered whether monetary contributions by Boeing to a joint research project under DOD assistance instruments affected the net value obtained by the firm from the project, and thus distorted the assessment of benefit. The Appellate Body nevertheless noted that findings by the panel did not support the proposition that Boeing's contribution to the project meant that no benefit was conferred. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 664).

8.2.2.5 Whether the subsidy is specific

8.2.2.5.1 Main arguments of the parties

8.198. The European Union argues that the subsidies provided through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements are specific within the meaning of Article 2.1(a) or, alternatively, Article 2.1(c) of the SCM Agreement.[1237]

8.199. With regard to Article 2.1(a), the European Union relies on the original panel's finding, which was not appealed by the United States, that the NASA aeronautics R&D subsidies were specific within the meaning of Article 2.1(a) by virtue of the explicit limitation of the scope of NASA R&D activities to aeronautics and space and the fact that the primary users of NASA facilities were aerospace-related. This finding continues to hold true for the original challenged measures and is equally applicable to successor and other closely linked programmes at issue in this proceeding. This is because all NASA programmes are carried out under the authority of the Space Act, which continues to restrict the scope of the NASA R&D activities to aeronautics and these activities pursue the same objectives that the original panel considered in making its finding of specificity under Article 2.1(a).[1238]

8.200. In support of its argument under Article 2.1(c), the European Union asserts that Boeing's share of NASA aeronautics R&D funding and support is disproportionate to its share of the U.S. economy and that NASA exercises discretion in granting these subsidies to Boeing.[1239]

8.201. The European Union rejects the argument of the United States that for purposes of the specificity analysis under Article 2.1(a), "the subsidy" at issue is the allocation of rights in patents on terms more favourable than in the market.[1240] The European Union submits that the subsidies consist of payments and access to the government facilities, equipment, and employees provided to Boeing by NASA, as well as the rights to technology (and the associated intellectual property) developed with such funding and support provided to Boeing and the non-market benefit that accrues from such financial contributions. The European Union explains, in this respect, that while it considers the intellectual property rights distribution when evaluating the benefit conferred, the "benefit" is not only the provision of intellectual property, but also the provision of payments, and access to government facilities, equipment, and employees, "for less than what a market-based actor would demand". The consideration of intellectual property rights distribution, and comparison to intellectual property rights distribution in market benchmarks is "just *a means to the end of determining the existence of benefit* from these financial contributions – it is not the 'benefit' of the 'subsidy', in and of itself".[1241]

8.202. Thus, the European Union considers that the reasoning of the Appellate Body in the original proceeding regarding the non-specificity of the allocation of patent rights as a self-standing subsidy is not applicable to the assessment of specificity of the NASA procurement contracts, cooperative agreements, and Space Act Agreements before this Panel. In this respect, the European Union recalls the Appellate Body's statement that its findings in connection with the specificity of the allocation of patent rights, if considered to be a self-standing subsidy, "do not traverse" the panel's findings related to the payments and access to NASA facilities, equipment, and employees. The European Union alleges that the United States is now attempting to use the Appellate Body's findings to traverse the original panel's findings, in exactly the way that the Appellate Body cautioned that they could not be used.[1242] The European Union denies the United States' allegation that it has alleged a different subsidy with respect to NASA and DOD aeronautics R&D funding and other support for aeronautics R&D from that in the original proceeding and asserts that its claims address the exact same subsidies as were found to exist in

[1237] European Union's first written submission, paras. 192-195.
[1238] European Union's first written submission, paras. 192-194; second written submission, paras. 319-321.
[1239] European Union's first written submission, para. 195; second written submission, para. 322.
[1240] European Union's second written submission, para. 324.
[1241] European Union's second written submission, para. 328.
[1242] European Union's second written submission, paras. 329-331.

the original proceedings, and the continuation of those subsidies through successor and closely related aeronautics R&D programmes.[1243]

8.203. The United States argues that "the patent rights subsidy alleged by the European Union" is not specific within the meaning of Article 2.1(a) of the SCM Agreement because it is available under any government contract.[1244] The United States argues that the standard for determining specificity under Article 2.1(a) of the SCM Agreement is whether access to the *subsidy* is limited.[1245] With respect to payments and the provision of access to facilities, equipment, and employees, the only benefit alleged by the European Union is that Boeing receives more favourable rights in patents than would be the case if a commercial actor had funded the research.

8.204. In this regard, the United States argues that the European Union incorrectly characterizes its claims as to the existence of a benefit with regard to NASA and DOD contracts and agreements. The European Union has not argued "that NASA paid Boeing too much for the work Boeing conducted and the intellectual property rights that resulted", or "that no market-based actor would make payments, or provide facilities, equipment, and employees to obtain research results that the market-based actor sought".[1246] Rather, the European Union's allegation of the existence of a benefit is limited to the fact that Boeing receives more favourable rights in respect of patents than would be the case if a commercial actor had funded the research. Thus, the specificity analysis must be limited to Boeing's allocation of rights in patents that is more favourable than under a commercial transaction.[1247] The United States recalls that the Appellate Body indicated that a subsidy provided through a particular program, considered separately, will not be considered specific where multiple authorities implement the same measure.[1248]

8.205. The United States recalls that the Appellate Body in the original proceeding found that the attribution of patent rights, if considered as a free-standing subsidy, is not specific because it is available under any U.S. Government R&D contract by any agency, in any sector.[1249] The United States considers that the Appellate Body's statement that its findings with respect to whether the allocation of patent rights, if considered as a subsidy by itself, was specific "do not traverse the panel's findings of specificity relating to the payments and other support provided under the NASA USDOD contracts and agreements" is not germane to this proceeding because the European Union is alleging a different financial contribution and benefit which requires a different analysis of specificity.[1250]

8.206. The United States considers that the European Union's contention that specificity exists under Article 2.1(a) because access to the NASA aeronautics R&D programmes is limited to entities that conduct aeronautics research does not address the standard established by the SCM Agreement (whether access to the *subsidy* is limited) because the European Union has never established or even claimed that NASA aeronautics R&D programmes taken as a whole are a subsidy to Boeing.[1251]

8.207. The United States argues that the European Union's specificity claim under Article 2.1(c) of the SCM Agreement fails for the same reasons. The European Union's argument addresses NASA research programmes and fails to provide evidence as to access to the subsidy at issue i.e. the allocation of patent rights common to all U.S. Government contracts.[1252]

[1243] European Union's comments on United States' response to Panel question No. 28, para. 181.
[1244] United States' first written submission, section 3.3.3.6.6.
[1245] United States' first written submission, para. 260.
[1246] United States' second written submission, para. 252. See also United States' first written submission, paras. 259 and 260; and second written submission, paras. 248 and 255.
[1247] United States' first written submission, para. 259; second written submission, paras. 248, 252, and 255.
[1248] United States' second written submission, para. 269.
[1249] United States' first written submission, para. 259. See also United States' second written submission, paras. 245, 246, and 255.
[1250] United States' first written submission, paras. 254 and 255.
[1251] United States' first written submission, para. 260; second written submission, para. 248.
[1252] United States' first written submission, paras. 259-261 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 799). See also United States second written submission, paras. 245, 246, and 255; response to Panel question No. 28, paras. 124-126; and comments on European Union's response to Panel question No. 28, paras. 153-155.

8.2.2.5.2 Evaluation by the Panel

8.208. Article 2.1 of the SCM Agreement provides:

> Article 2
>
> Specificity
>
> 2.1 In order to determine whether a subsidy, as defined in paragraph 1 of Article 1, is specific to an enterprise or industry or group of enterprises or industries (referred to in this Agreement as "certain enterprises") within the jurisdiction of the granting authority, the following principles shall apply:
>
> (a) Where the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to a subsidy to certain enterprises, such subsidy shall be specific.
>
> (b) Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions{*} governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification.
>
> (c) If, notwithstanding any appearance of non-specificity resulting from the application of the principles laid down in subparagraphs (a) and (b), there are reasons to believe that the subsidy may in fact be specific, other factors may be considered. Such factors are: use of a subsidy programme by a limited number of certain enterprises, predominant use by certain enterprises, the granting of disproportionately large amounts of subsidy to certain enterprises, and the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy.{*} In applying this subparagraph, account shall be taken of the extent of diversification of economic activities within the jurisdiction of the granting authority, as well as of the length of time during which the subsidy programme has been in operation.
>
> {fn original}[2] Objective criteria or conditions, as used herein, mean criteria or conditions which are neutral, which do not favour certain enterprises over others, and which are economic in nature and horizontal in application, such as number of employees or size of enterprise.
> {fn original}[3] In this regard, in particular, information on the frequency with which applications for a subsidy are refused or approved and the reasons for such decisions shall be considered.

8.209. The first question raised by the parties' arguments is whether the subsidies provided to Boeing through: (a) the payments and access to NASA facilities, equipment, and employees under the post-2006 NASA procurement contracts and cooperative agreements at issue; and (b) access to NASA facilities, equipment, and employees under the post-2006 Space Act Agreements, are specific within the meaning of Article 2.1(a), i.e. whether "the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to the subsidy to certain enterprises".

8.210. As to the meaning of "explicitly limits" in Article 2.1(a), the Appellate Body has explained that "a subsidy is specific under Article 2.1(a) if the limitation on access to the subsidy to certain enterprises is express, unambiguous, or clear from the content of the relevant instrument, and not merely 'implied' or 'suggested"'.[1253] It has also indicated that a "limitation on the access to the subsidy (or the absence of one) may result from the legislation pursuant to which the granting authority operates or from pronouncements or other actions of the granting authority".[1254] An analysis of whether "access to the subsidy" is explicitly limited must focus on whether the granting

[1253] Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 372. See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.190 and 7.192.
[1254] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 757. See also para. 750 (explaining that the inquiry under Article 2.1(a) must examine "the legislation pursuant to which the granting authority operates, or the express acts of the granting authority").

authority, or the legislation pursuant to which the granting authority operates, limits the *eligibility* to receive the subsidy to certain enterprises.[1255] With regard to the term "certain enterprises", the Appellate Body has observed that "the relevant enterprises must be 'known and particularized', but not necessarily 'explicitly identified', and that they may have 'some mutual or common relation or purpose', or 'degree of similarity'".[1256]

8.211. As explained by the Appellate Body, the starting point of an analysis of specificity is the measure that has been determined to constitute a subsidy under Article 1.1 of the SCM Agreement; namely, the financial contribution that confers a benefit.[1257] In this regard, the parties' arguments on whether access to the subsidy is explicitly limited reflect differing positions as to the nature of the subsidy at issue and the corresponding identification of the "legislation" pursuant to which the "granting authority" operates[1258], which frames the assessment of whether access to the subsidy is explicitly limited to certain enterprises for purposes of Article 2.1(a).

8.212. The European Union argues that, for purposes of determining of whether access to the subsidy is explicitly limited, the subsidy should be defined, in this case, as payments and the provision of access to facilities, equipment, and employees on terms more favourable than available in the market and that, as such, the subsidy is exactly the same subsidy, access to which the original panel found to be explicitly limited.[1259] The United States argues that the subsidy should be defined in terms of the allocation of rights in patents on terms more favourable than available in the market and that, as such, the subsidy is the same subsidy, access to which the Appellate Body found not to be explicitly limited in the original proceeding.[1260]

8.213. Before addressing this question of how the relevant subsidy should be defined in this case in order to ensure a proper analysis of whether access to the subsidy is explicitly limited, we briefly recall the relevant findings made in the original proceeding by the panel and the Appellate Body that are relied upon by the parties in support of their opposing views.

8.214. First, the original panel found that subsidies in the form of payments and access to NASA facilities, equipment, and employees that NASA provided to Boeing pursuant to the NASA procurement contracts and agreements at issue were specific within the meaning of Article 2.1(a).[1261] In its assessment, the panel observed that:

> In this case, the United States does not dispute that each of the eight aeronautics R&D programmes at issue would, if found to provide subsidies within the meaning of Article 1, be specific under Article 2.1(a) of the SCM Agreement. It is not in dispute that the Space Act explicitly limits the scope of NASA's R&D activities (i.e. to aeronautics and space). It is also not in dispute that each of the eight programmes at

[1255] See e.g. Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 368 ("Article 2.1(a) thus focuses not on whether a subsidy has been granted to certain enterprises, but on whether *access* to that subsidy has been explicitly limited. This suggests that the focus of the inquiry is on whether certain enterprises are eligible for the subsidy, not on whether they in fact receive it"); and *US – Large Civil Aircraft (2nd complaint)*, para. 753 ("{t}his inquiry focuses not only on whether the subsidy was provided to the particular recipient identified in the complaint, but focuses also on all enterprises or industries eligible to receive that same subsidy").

[1256] Appellate Body Report, *US – Carbon Steel (India)*, para. 4.365. The Appellate Body has also stated that "{a}ny determination of whether a number of enterprises or industries constitute 'certain enterprises' can only be made on a case-by-case basis". (Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 373 (quoting Panel Report, *US – Upland Cotton*, para. 7.1142)). See also Appellate Body Report, *US – Washing Machines*, paras. 5.220 and 5.221 (explaining that the notion of "certain enterprises" in Article 2.2 of the SCM Agreement does not depend on the legal personality of the subsidy recipients).

[1257] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 747.

[1258] While an explicit limitation on access to the subsidy may also result from "pronouncements or other actions of the granting authority". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 757), our understanding is that the European Union bases its allegation that "access to the subsidy" is subject to an explicit limitation on what it considers to be relevant legislative and regulatory provisions pursuant to which the subsidy is granted.

[1259] In this view, the relevant "legislation pursuant to which the granting authority operates" consists of the relevant legislative and regulatory provisions that authorize, and define the objectives of, NASA's aeronautics and space R&D programmes.

[1260] In this view, the relevant "legislation pursuant to which the granting authority operates" consists of the legislative framework and implementing regulations governing the distribution of intellectual property rights in U.S. Government R&D contracts.

[1261] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1049.

> issue involves R&D aimed at the "improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles".[1262]

8.215. Thus, the apparent basis for the panel's finding that access to the subsidy was explicitly limited to certain enterprises was the existence of explicit limitations on the scope of NASA's R&D activities to aeronautics and space and the objectives pursued by NASA with these activities.[1263] The panel also rejected the United States' argument that NASA's wind tunnel services were "used by a wide range of industries across the U.S. economic spectrum".[1264] Having concluded that the subsidies were specific under Article 2.1(a), the original panel declined to address the European Union's alternative argument under Article 2.1(c) of the SCM Agreement.[1265]

8.216. Neither party appealed the original panel's findings on specificity in respect of payments and access to NASA facilities, equipment, and employees. The parties appealed different aspects of the panel's findings on financial contribution and benefit. The Appellate Body upheld the panel's findings on financial contribution and benefit in relation to the challenged NASA aeronautics R&D measures, albeit based on different reasoning.[1266]

8.217. Second, the question of specificity of the original NASA aeronautics R&D measures was also considered in the original proceeding in respect of the European Communities' separate claim, regarding the allocation of NASA and DOD patent rights, when viewed independently from the provision of payments and access to facilities, equipment, and employees, as a self-standing subsidy.[1267] In addressing this claim, the original panel concluded that the allocation of patent rights, if assumed *arguendo* to be a self-standing subsidy, would not in any event be specific, given that "the allocation of patent rights is uniform under all U.S. Government R&D contracts, agreements, and grants, in respect of all U.S. Government departments and agencies, for all enterprises in all sectors".[1268] The European Union appealed this finding, as well as the panel's interpretation of Article 2.1 of the SCM Agreement.[1269]

[1262] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1045.

[1263] We also note in this respect the panel's statement that the European Communities was correct in observing that the United States had not responded to the European Communities argument that the NASA aeronautics R&D measures at issue were specific under Article 2.1(a) "because they are explicitly limited to certain enterprises that participate in aeronautics-related R&D". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1048).

[1264] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1046 and 7.1047.

[1265] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1049.

[1266] As we have already described in Section 8.1.3, the Appellate Body found that the panel had not made a proper comparison of the terms of the NASA procurement contracts (and DOD assistance instruments) with the terms of a market transaction as required under Article 1.1(b), and that the panel's reasoning as to whether the payments and access to facilities provided under the NASA procurement contracts conferred a benefit could not be sustained. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 647). The Appellate Body completed the analysis by determining whether the "disposition of intellectual property rights under the NASA/USDOD measures at issue is consistent with what occurs in transactions between two market actors". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 653). In the course of undertaking this analysis, the Appellate Body expressed the view that "the allocation of intellectual property rights is pre-determined under the US legal framework". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 661). It concluded, based on a comparison of the intellectual property rights terms of certain contracts, which it had decided to treat as market benchmarks for purposes of completing the analysis, that "transactions in the market result in an equilibrium that is more favourable to the commissioning party than in the measures before us". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 662). Consequently, it found that the funding and support provided under the NASA procurement contracts conferred a benefit on Boeing, within the meaning of Article 1.1(b) of the SCM Agreement. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 666).

[1267] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294, for a description of the Bayh-Dole Act, its associated legislative instruments and implementing regulations, and accompanying NASA-specific implementing regulations.

[1268] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294. The panel found that the U.S. Government has a general policy in place granting government contractors the option to retain title to inventions that arise from a funding agreement with the U.S. Government, pursuant to the Bayh-Dole Act, 1983 Presidential Memorandum, the 1987 Executive Order, and the general and NASA-specific regulations. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294).

[1269] On 1 December 2009, the *Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community* (done at Lisbon, 13 December 2007) entered into force. On 29 November 2009, the WTO received a Verbal Note (WT/L/779) from the Council of the European Union and the

8.218. The Appellate Body observed that there may have been "some overlap" in the relationship between the European Communities' claim that payments and access to facilities, equipment, and employees were subsidies, on the one hand, and its claim that the allocation of patent rights was a self-standing subsidy, on the other.[1270] The Appellate Body proceeded to address the parties' appeal of the panel's finding on the basis that neither party had appealed the panel's approach to the potential overlap between the European Communities' claims; however, the Appellate Body emphasized that "any findings {it} make{s} in connection to the specificity of the allocation of patent rights do not traverse the Panel's findings of specificity relating to the payments and other support provided under the NASA/USDOD contracts and agreements".[1271]

8.219. While the Appellate Body expressed reservations regarding the panel's use of *arguendo* reasoning[1272], it ultimately upheld the panel's finding that the allocation of patent rights under the challenged NASA contracts and agreements, if conceived as a separate subsidy, was not specific within the meaning of Article 2.1(a). In particular, the Appellate Body:

a. Affirmed the panel's assessment of whether the "patent rights" subsidies in question were specific by reference to the legal framework that exists in the United States for the allocation of patent rights under U.S. Government R&D contracts and agreements and pursuant to which NASA and DOD as granting authorities operate.[1273]

b. Focused on the legislative and regulatory framework regulating the allocation of patent rights arising from R&D funded by the U.S. Government, which revealed that the eligibility to receive the alleged "subsidy" is not limited to the class of enterprises that conducts aerospace R&D, and thus concluded that there was no basis on which to find that such a subsidy is explicitly limited to certain enterprises and therefore specific within the meaning of Article 2.1(a) of the SCM Agreement.[1274]

8.220. The Appellate Body reversed the panel for failing to address the European Union's claim of *de facto* specificity under Articles 2.1(c).[1275]

8.221. As noted above, the parties disagree on whether the subsidies at issue in this proceeding are the same subsidies as those that were found to exist by the original panel and should be found to be specific under Article 2.1(a), based on the same analysis that led the original panel to find the original measures to be specific; or whether the subsidies at issue here are different, such that the subsidies should be found to be non-specific, in accordance with the Appellate Body's analysis of the European Union's separate claim with respect to the allocation of NASA and DOD patent rights as a self-standing subsidy.

8.222. While we disagree with the European Union's assertion that its claim in this proceeding regarding the alleged post-2006 NASA aeronautics R&D subsidies concerns the exact same subsidies as were found to exist in the original proceedings and were found to be specific by the original panel, we also do not accept the United States' argument that the subsidies at issue are the same subsidies found to be non-specific by the Appellate Body in the context of its analysis of the European Communities' challenge to the allocation of patent rights under all NASA and DOD procurement and assistance instruments as a self-standing subsidy.

Commission of the European Communities stating that, by virtue of the Treaty of Lisbon, as of 1 December 2009, the European Union replaces and succeeds the European Community.

[1270] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 726-728 and 740.

[1271] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 730.

[1272] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 741. The Appellate Body expressed the view that the panel should have first determined whether a subsidy exists, stating that "the assessment of specificity under Article 2.1 depends on how the subsidy was defined under Article 1.1, leaving little, if any, room for the adoption of an *arguendo* approach". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 739).

[1273] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 760.

[1274] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 782, 788, and 789.

[1275] The Appellate Body found that the panel's overall analysis was "incomplete and cannot be sustained" because the panel chose not to address the European Union's claim of *de facto* specificity under Articles 2.1(c) of the SCM Agreement. (Appellate Body Report *US – Large Civil Aircraft (2nd complaint)*, para. 793). Having reversed the panel, the Appellate Body stated that it was not persuaded that NASA or DOD exercised discretionary authority with respect to the allocation of patent rights, or that the share of NASA contracts and USDOD funding received by Boeing was disproportionate, to support a finding of specificity under Article 2.1(c). (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 799 and 800).

8.223. The measures challenged by the European Union in this proceeding are factually the same type of measures as those challenged in the original proceeding i.e. payments and the provision of access to facilities, equipment, and employees under NASA aeronautics R&D contracts and agreements. However, we have found these measures to constitute subsidies on a legal basis that differs from the basis upon which the panel in the original proceeding found the measures to be subsidies. In our view, this different legal characterization of the measures as subsidies means that in determining whether access to the subsidy is explicitly limited we cannot presume that the finding of the original panel, that the original NASA aeronautics R&D subsidies were specific under Article 2.1(a), is still applicable.

8.224. Particularly with regard to our finding on how the financial contributions at issue confer a benefit on Boeing, we note that in the original proceeding the panel found a benefit on the basis that "no private entity acting pursuant to commercial considerations, would provide payments (and access to its facilities and personnel) to another commercial entity on the condition that the entity perform R&D activities principally for the benefit and use of that other entity. At a minimum, it would be expected that some form of royalties or repayment would be required in the event that the financial contributions were provided on such terms."[1276] In this proceeding, we have found that the financial contributions provided under the NASA aeronautics R&D measures confer a benefit on the basis that the allocation of rights to own and use patents under those measures is more favourable to Boeing as commissioned party than the allocation of rights to own and use patents to commissioned parties under collaborative R&D agreements between private parties. In our view, the different basis on which we have determined in this proceeding that the payments and access to NASA facilities, equipment, and employees provided through the NASA aeronautics R&D measures constitute financial contributions which confer a benefit means that we cannot adopt the original panel's finding of specificity regarding the original measures without first examining whether such an approach remains appropriate.[1277]

8.225. However, we do not consider that, as argued by the United States, the fact that the focus of our benefit analysis is the allocation of intellectual property rights logically leads to the conclusion that the subsidy at issue should be defined as the allocation of intellectual property rights on terms more favourable than available in the market, and that for purposes of determining whether access to the subsidy is limited, we must treat the Bayh-Dole Act, its associated legislative instruments and implementing regulations as the relevant subsidy scheme. Since a subsidy within the meaning of Article 1 is defined in terms of financial contribution and benefit, it stands to reason that both financial contribution and benefit must be taken into consideration in an analysis of whether access to the subsidy is explicitly limited. Therefore, while we agree that the nature of the benefit found to exist obviously is a key consideration in the specificity analysis under Article 2.1(a), the question of whether access to the subsidy is explicitly limited cannot always be answered by focusing solely on the benefit.[1278] In our view, the United States' argument fails to properly consider the benefit in relation to the financial contribution and the particular context in which that financial contribution occurs.

8.226. We have characterized the post-2006 NASA aeronautics R&D measures as collaborative R&D arrangements between NASA and Boeing that have characteristics analogous to equity infusions. In that context, we observed that the Appellate Body's overall conclusion of the various technical elements of the transactions at issue was that the nature of the relationship between NASA and Boeing in the particular context was essentially one of partnership. We also noted that the nature of the research commissioned by NASA to Boeing and the objectives pursued by NASA indicate that NASA and Boeing are engaged in a collaborative enterprise, in pursuit of a common goal.[1279]

8.227. In light of this particular characterization of the NASA aeronautics R&D measures, we consider it appropriate to assess whether the financial contributions provide a benefit on the basis of an examination of the allocation of intellectual property rights. As illustrated by our analysis of

[1276] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1039.

[1277] In this respect, we interpret the Appellate Body's statement, at paragraph 730 of its report, that any findings it makes in connection with the specificity of the allocation of patent rights "do not traverse the Panel's findings of specificity relating to the payments and other support provided under the NASA USDOD contracts and agreements" particularly in light of footnote 1534, as a statement regarding the scope of the appeal.

[1278] See also Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, paras. 377 and 378.

[1279] See paras. 8.150 and 8.151 above.

benefit in relation to DOD procurement contracts, where we characterize the financial contributions differently from our characterization of the NASA aeronautics R&D measures, we find that a focus on the allocation of intellectual property rights as a basis to determine the existence of a benefit is not appropriate. Thus, in the context of our characterization of the DOD procurement contracts as purchases of R&D services, the same allocation of patent rights that applies by virtue of the Bayh-Dole Act and related legislative instruments and implementing regulations, would not result in the measures in question being subsidies.[1280]

8.228. Because the role of the allocation of intellectual property rights in our analysis of whether a measure constitutes a subsidy depends upon the particular context, we consider that, in ascertaining whether access to the subsidy is subject to explicit limitations, we cannot treat the allocation of intellectual property rights on terms more favourable than available in the market as being the relevant subsidy in and of itself. Therefore we disagree with the United States that the measure can be characterized as a "patent rights subsidy", which is the same subsidy that the Appellate Body considered in its analysis of the European Union's alternative claim regarding the allocation of intellectual property rights as a self-standing subsidy. As a consequence, we also disagree that the Bayh-Dole Act, its associated legislative instruments and other instruments and implementing regulations, constitute the appropriate legislative and regulatory framework that we must consider for purposes of determining whether the legislation pursuant to which the granting authority operates explicitly limits access to the subsidy to certain enterprises.[1281]

8.229. We recall that the basis for the original panel's finding of an explicit limitation of access to the subsidy was the existence of restrictions on the scope of NASA's R&D activities to aeronautics and space and the particular objectives pursued by NASA with these activities. Thus, the original panel found that the access to the subsidy was explicitly limited to "certain enterprises" because the very nature of the research inherently limited access to the subsidy to "certain enterprises that participate in aeronautics-related R&D".[1282] In our view, access to the subsidy that we find to exist in this proceeding in respect of the post-2006 NASA aeronautics R&D measures is subject to the same explicit limitation. As the original panel found with respect to the pre-2007 measures, the R&D activities performed under the relevant post-2006 NASA aeronautics R&D programmes are focused on aeronautics and space. There is no argumentation or evidence before us to demonstrate that NASA contracts with any enterprises, industry or group of enterprises or industries to conduct R&D work outside the spectrum of aeronautical and space activities. Moreover, the Space Act maintains the same objectives that the panel identified in the original proceeding. The specific objectives under the Space Act include "{t}he improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles", "{t}he preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere", and "{t}he preservation of the United States preeminent position in aeronautics and space through research and technology development related to associated manufacturing processes".[1283]

8.230. We conclude that the subsidies provided to Boeing through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements are specific within the meaning of Article 2.1(a) of the SCM Agreement. In light of this conclusion, we do not consider it necessary to address the European Union's alternative argument under Article 2.1(c).

8.231. **Therefore, the Panel finds that the subsidies provided to Boeing through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements are specific within the meaning of Article 2.1(a) of the SCM Agreement.**

8.232. Finally, we note that the European Union also argues that the subsidies provided to Boeing through the post-2006 NASA procurement contracts, cooperative agreements and Space Act Agreements are specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that

[1280] See paras. 8.420 to 8.426 below.

[1281] Because of the need to consider financial contribution and benefit together in determining whether "access to the subsidy" is explicitly limited, we consider that this is not a situation in which "multiple authorities are implementing the same measure". (United States' second written submission, para. 246).

[1282] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1048.

[1283] Section 102(d) of the National Aeronautics and Space Act of 1958, as codified and restated by Public Law No. 111–314, Stat. 3 (18 December 2010), *United States Code*, Title 51, section 20102(d) (current through 7 December 2012), (Exhibit EU-252).

"{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because, in Section 10 of this Report, we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.2.6 Amount of the subsidy and amount of the financial contribution

8.2.2.6.1 The amount of the post-2006 NASA aeronautics R&D subsidies to Boeing

8.233. In the previous Section, we find that the post-2006 NASA aeronautics R&D measures are specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement. As regards our subsidy findings under Article 1 of the SCM Agreement, we find that:

a. the payments provided by NASA to Boeing under post-2006 procurement contracts and cooperative agreements and the access to facilities, equipment, and employees provided by NASA to Boeing under the post-2006 procurement contracts, cooperative agreements, and Space Act Agreements, funded under four NASA aeronautics R&D programmes (the Fundamental Aeronautics Program; the Integrated Systems Research Program; the Aviation Safety Program; and the Aeronautics Test Program), are financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement; and

b. the foregoing financial contributions provided through the post-2006 procurement contracts, cooperative agreements, and Space Act Agreements confer a benefit, within the meaning of Article 1.1(b) of the SCM Agreement, because the allocation of intellectual property rights and related licence rights under those instruments is more favourable to Boeing as commissioned party than the allocations to commissioned parties under the collaborative R&D arrangements that have been submitted to the Panel as evidence of market benchmarks.

8.234. In this Section, we address the parties' arguments regarding the amount of the post-2006 NASA aeronautics R&D subsidies provided to Boeing. The amount of the *subsidy*, in our view, refers to the amount or magnitude of the benefit conferred by the financial contribution; i.e. the quantification of the advantage conferred on Boeing by the respective financial contributions, compared to what Boeing would have obtained in a market transaction.[1284]

8.235. We also address the parties' arguments concerning the amount of the financial contribution, represented by the amount of payments and value of the provision of access to NASA facilities, equipment, and employees under the relevant NASA aeronautics R&D subsidies. We recall that in the original proceeding, the panel treated the full amount of the financial contributions provided to Boeing as the amount of the "subsidy" to Boeing. It justified this on the basis that it was not under an obligation to quantify precisely the amount of the subsidy, and because the United States had advanced no argument or evidence to support an alternative approach to calculating the amount of the subsidy to Boeing.[1285] We do not consider that the same justification applies in this proceeding. Notably, as explained in paragraph 8.237 below, the United States in this proceeding does propose an approach to calculating the amount of the subsidy other than treating the full amount of the financial contributions provided to Boeing as the amount of the subsidy.

8.2.2.6.1.1 Main arguments of the parties

8.236. The European Union does not propose a specific estimate of the amount of the benefit conferred by the payments and provision of access to NASA facilities, equipment, and employees to Boeing under the NASA procurement contracts, cooperative agreements, and Space Act Agreements funded through the challenged aeronautics R&D programmes. Rather, it argues that the amount of the benefit is a "multiple" of the amount of the financial contribution. According to

[1284] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 690 and 691 (explaining that the original panel, in seeking to estimate the amount of funds transferred to Boeing under the relevant NASA procurement contracts, as well as the value of Boeing's access to NASA facilities, equipment, and employees under the NASA instruments, had been estimating the amount of the "financial contribution", rather than the amount of the "benefit").

[1285] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1101.

the European Union, NASA has no interest in using the intellectual property generated through its relationship with Boeing.[1286] A commissioning party operating in the marketplace would, in that position, require some financial return other than intellectual property rights from its investment, for example, royalties or licence fees.[1287] The quantification of the benefit should therefore be based on the value of the technology that Boeing, because of the subsidies, is able to access for free, without paying royalties or licence fees.[1288] This can be assessed *ex ante*, in view of expectations of the potential value of the technologies to be developed, and in light of past experience.[1289] The European Union considers that its reasoning is supported by the original panel's statement that the aeronautics R&D subsidies "multiply the benefit from a given expenditure".[1290]

8.237. The United States argues that the European Union improperly takes an *ex post* approach to the valuation of the amount of the subsidy, by looking at what actually resulted from the subsidy, rather than what Boeing initially received.[1291] Further, the United States argues that the European Union confuses the issues of benefit and adverse effects; the original panel and Appellate Body made clear that the *effect* of research spending pertains to the assessment of adverse effects, and does not go to the valuation of benefit.[1292] Finally, the United States notes that, given that the European Union argues that the NASA aeronautics R&D measures confer a subsidy because the allocation of intellectual property rights under the instruments in question is more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under market-based collaborative R&D arrangements, the amount of the subsidy should, therefore, correspond to the value of that difference.[1293] This understanding of what constitutes the benefit of the subsidy is inconsistent with the position that the value of the benefit amounts to an unspecified multiple of the full amount of the financial contribution.[1294]

8.2.2.6.1.2 Evaluation by the Panel

8.238. As noted above, the amount of the subsidy corresponds to the amount or magnitude of the benefit conferred by the financial contribution; i.e. the difference between the terms on which the financial contribution was provided to Boeing, and the terms on which the financial contribution would have been provided to Boeing in a market-based transaction.[1295] The Panel finds that the payments and provision of access to NASA facilities, equipment, and employees to Boeing through the procurement contracts and cooperative agreements funded under the relevant aeronautics R&D programmes, confer a benefit on Boeing because the allocation of intellectual property rights and related licence rights under those instruments is more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel which evidence prevailing market practices for collaborative R&D arrangements. Similarly, the provision of access to NASA facilities, equipment, and employees to Boeing through the Space Act Agreements funded under the relevant aeronautics R&D programmes confers a benefit because the allocation of intellectual property rights and related licence rights under those instruments is more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel which evidence prevailing market practices for collaborative R&D arrangements. Accordingly, the amount of the benefit (and thus, the subsidy) must logically correspond to the value of the difference between the terms regarding the allocation of intellectual property rights and related licence rights on which the financial contributions were provided to Boeing under the NASA procurement contracts, cooperative agreements, and Space Act

[1286] European Union's response to Panel question No. 26, para. 160.
[1287] European Union's response to Panel question No. 26, paras. 160 and 161 (citing Razgaitis Declaration, (Exhibit EU-1262) (BCI), paras. 56 and 104 and attachment B).
[1288] European Union's response to Panel question No. 26, paras. 160 and 161 (citing Razgaitis Declaration, (Exhibit EU-1262) (BCI), paras. 56 and 104, attachment B).
[1289] European Union's response to Panel question No. 26, para. 162.
[1290] European Union's response to Panel question No. 26, para. 163 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1760).
[1291] United States' first written submission, para. 59.
[1292] United States' comments on the European Union's response to Panel question No. 26, paras. 146 and 147 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1760); response to Panel question No. 32, para. 142 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 641).
[1293] United States' comments on the European Union's response to Panel question No. 26, para. 147.
[1294] United States' comments on the European Union's response to Panel question No. 26, para. 147.
[1295] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 691.

Agreements, and the terms regarding the allocation of intellectual property rights and related licence rights under which the financial contributions would have been provided in a market-based collaborative R&D arrangement.

8.239. The European Union's argument as to how the benefit should be quantified is not based on these notions of benefit and thus cannot yield a meaningful estimate of the amount of the NASA aeronautics R&D "subsidy". It conflates the concept of benefit with the concept of effects of the subsidy. The European Union uses certain statements from the original proceeding that "by their nature, the aeronautics R&D subsidies 'multiply the benefit from a given expenditure'" in support of its argument that the value of the benefit is a multiple of the value of the financial contribution.[1296] This and other statements of the Appellate Body to which the European Union refers, however, were made in the context of the Appellate Body's adverse effects findings, not its benefit findings. There is nothing in the panel report or Appellate Body report in the original proceeding, or in any other case of which we are aware, to support the notion that the amount of a subsidy (as opposed to its effects) is a multiple of the financial contribution.

8.240. There is insufficient evidence on the record as to the amount of the subsidy in the sense of the advantage conferred on Boeing resulting from the difference between the terms regarding the allocation of intellectual property rights and related licence rights on which financial contributions were provided to Boeing under the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements at issue and the terms regarding the allocation of intellectual property rights and related licence rights on which financial contributions would have been provided to Boeing in a market-based collaborative R&D arrangement.

8.241. In light of the foregoing, we are unable to accept the European Union's arguments regarding the amount of the benefit provided to Boeing through the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements under the relevant aeronautics R&D programmes. **We therefore find that there is insufficient evidence on the record as to the amount of the subsidy**.

8.2.2.6.2 The amount of the financial contribution provided to Boeing through the NASA aeronautics R&D subsidies

8.242. As previously noted, the European Union also purports to estimate the amount of the financial contribution, in the sense of the value of the payments and access to facilities, equipment, and employees provided to Boeing under the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements.

8.2.2.6.2.1 Main arguments of the parties

8.243. The European Union estimates the amount of the payments and value of access to facilities, equipment, and employees to Boeing under the post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements as USD 1.818 billion between 2007-2012.[1297] The United States estimates the amount of the financial contribution as **[***]** between 2007-2012.[1298]

8.244. In arriving at its estimate, the European Union takes the full amount of each of the challenged NASA aeronautics R&D programme budgets that is dedicated to non-engine, LCA-related R&D.[1299] From this total, made up of each challenged programme's non-engine,

[1296] European Union's first written submission, para. 191 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 945).

[1297] The European Union provided an updated estimate of USD 2.554 billion between 2007 and 2014. (NASA Subsidies to Boeing's LCA Division, (Exhibit EU-36), p. 1; and Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), p. 2). The European Union estimates that for the 2012-2014 period, the amount of the financial contribution was approximately USD 1.12 billion (USD 384.5 million, USD 348.5 million, and USD 387.2 million in 2012, 2013, and 2014, respectively).

[1298] This figure covers not only those payments, access to facilities, equipment, and employees provided pursuant to post-2006 contracts and Space Act Agreements, but also those provided after 2006, but pursuant to pre-2007 contracts and Space Act Agreements. (See United States' second written submission, paras. 104 and 641 and fn 111).

[1299] European Union's first written submission, para. 178; and NASA Subsidies to Boeing's LCA Division, (Exhibit EU-36).

LCA-related budget, plus a share of NASA's Cross Agency Support Program (CASP) budget[1300], the European Union then allocates a portion to Boeing using a ratio determined by dividing the number of Boeing commercial aircraft sales by the total number of civil aircraft sales in the United States in the relevant period.[1301]

8.245. The European Union considers that this estimate is the "best available evidence" of the value of the payments and provision of access to NASA facilities, equipment, and employees, because the United States failed to cooperate in providing information that would have been necessary to replicate the valuation method used by the original panel. The European Union argues that a contract-by-contract analysis is not possible because the United States has failed to provide a "full set of un-redacted NASA contracts and agreements funded through the NASA R&D programmes at issue".[1302] The European Union explains that it is not possible or appropriate to determine the existence or value of the NASA aeronautics R&D subsidies on a "contract-by-contract" basis in any case because, aside from the flaws in the United States' compilation and provision of NASA contract data, the "extent of the subsidisation is not captured by the NASA contracts and agreements, which massively under-identify the value of the access to NASA facilities, equipment, and employees provided to Boeing for LCA-related R&D".[1303] While contracts and Space Act Agreements establish the particular mechanisms by which NASA provides subsidies, the amount of the subsidy cannot only be found "within the four corners of these instruments".[1304] This is because, throughout the course of their collaborative relationship, Boeing benefits from the investments NASA makes in its own physical and human capital, which do not appear on the face of a particular contract or Space Act Agreement and cannot be quantified from a single payments or use of property.[1305] The United States' estimate ignores this, and therefore "massively undercounts" the real value of the financial contribution by not recognizing the collaborative, iterative nature of NASA and Boeing's R&D efforts.[1306]

8.246. The United States arrives at its estimate of the amount of the financial contributions involved in the NASA aeronautics R&D subsidies by combining the estimated value of the categories of "funding" and "support" that the European Union alleges constitute financial contributions: payments and the provision of access to equipment, facilities (including computer usage) and NASA employees.[1307] The United States estimates that the amount of payments to Boeing under procurement contracts between 2007 and 2012 for non-engine aeronautics R&D is **[***]**[1308] and that, based upon the amounts waived in reimbursement, the value of access to facilities, equipment, and employees provided to Boeing under Space Act Agreements over the

[1300] The European Union determines this share by allocating to Boeing a percentage of the CASP budget that is equivalent to the percentage of each's programme's non-engine, LCA related funding. (See European Union's second written submission, para. 178; comments on the United States' response to Panel question No. 99, paras. 262-270; and NASA subsidies to Boeing's LCA Division, (Exhibit EU-36)).

[1301] The European Union argues that NASA's CASP programme constitutes "institutional support" to Boeing. (European Union's first written submission, para. 178; and NASA Subsidies to Boeing's LCA Division, (Exhibit EU-36), pp 3-9). The number of U.S. civil aircraft sales is provided in Aerospace Industries Association, "2012 Year-End Review and Forecast, Aerospace Industry Sales by Product Group (Current Dollars), Calendar Years 2002-2013", available at: <http://www.aia-aerospace.org/assets/YE_2012_Table_1_Industry_Sales_by_Product_Group_(1).pdf>, accessed 29 August 2016, (Exhibit EU-526). The number of Boeing sales is provided in Boeing, *Annual Form 10-K Report to the U.S. Securities and Exchange Commission for the Fiscal Year Ending 31 December* 2011, (Exhibit EU-488).

[1302] European Union's response to Panel question Nos. 88, para. 81, and 89, para. 97. By contrast, in its first written submission, the European Union said that the required information was the amounts paid to all contractors under the challenged NASA aeronautics R&D programmes, which the original panel had subtracted from the total NASA programme budgets in order to determine the total value of facilities, equipment, and employees provided under the programmes. (European Union's first written submission, para. 179 and fn 423).

[1303] European Union's response to Panel question No. 89, para. 97.

[1304] European Union's second written submission, para. 262.

[1305] European Union's second written submission, paras. 260-265; response to Panel question No. 89, para. 100; and comments on the United States' response to Panel question No. 100, paras. 272-275. See also European Union's comments on the United States' response to Panel question Nos. 97, paras. 252 and 253 (in relation to the value of Boeing's use of High-End Computing Capability Project supercomputer), and 100, para. 285 (in relation to Space Act Agreement and the value of Boeing's access to NASA employees).

[1306] European Union's second written submission, paras. 263-265; response to Panel question No. 89, para. 97; and comments on the United States' response to Panel question No. 100, para. 285.

[1307] United States' second written submission, paras. 111-123.

[1308] United States' second written submission, para. 111; Obligations under NASA contracts with Boeing for FY 2007-FY 2012 (formerly Exhibit US-13-1), (Exhibit USA-37) (BCI).

same period is **[***]**.[1309] The United States estimates that the value of access to equipment and computers provided to Boeing under NASA procurement contracts is **[***]**[1310] and **[***]**[1311] respectively. Finally, the United States estimates that the value of access to NASA employees provided to Boeing under NASA procurement contracts is **[***]**.[1312] The total value of these financial contributions is **[***]**.

8.247. The United States argues that its evidence, which was submitted in response to the Panel's request for information pursuant to Article 13 of the DSU, is the only reliable evidence as to the amount of the financial contribution.[1313] It considers that the European Union has not demonstrated a failure on the part of the United States to cooperate, or to respond to questions.[1314] The United States also emphasizes that the original panel and the Appellate Body ultimately endorsed the United States' methodology for calculating the amounts of the aeronautics R&D subsidies.[1315] The United States argues that the European Union's "top-down" valuation methodology "grossly overstates" the value of the financial contribution, and was rejected in the original proceeding.[1316] In response to the European Union's argument that Boeing receives "significant value" beyond the face-value of individual contracts, agreements, or Space Act Agreements, the United States argues that the value of access to a facility or piece of equipment to Boeing consists solely of the value of the use of that facility or equipment.[1317] With respect to employees, the United States argues that Boeing has access to NASA employees for a limited period of time only, and the value of this access is reflected in its reported figures.[1318] The United States emphasizes that since the European Union frames the financial contribution as specific *transactions* between NASA and Boeing, the amount of the financial contribution must be limited to those transactions; i.e. the value of specific payments, and access to facilities, equipment, and employees as provided through the relevant instruments, and funded under the relevant programmes.[1319]

8.248. The United States also considers that the European Union improperly includes a portion of the CASP budget in its estimate of the financial contribution, since, not having challenged that NASA aeronautics R&D programme, it is outside the Panel's terms of reference.[1320] Further, the United States notes that the European Union does not actually include payments made to Boeing through CASP, but rather allocates a percentage of the CASP budget to Boeing, based on the percentage of other, challenged NASA aeronautics R&D programmes that the European Union allocates to Boeing. The United States does not consider that an allocation determined in this way constitutes a proper calculation of the amount of financial contribution under Article 1.1(a)(1).[1321]

[1309] United States' first written submission, para. 113, 198; second written submission, para. 118; and NASA SAAs with Boeing (formerly Exhibit US-13-2), (Exhibit USA-60) (BCI).

[1310] United States' second written submission, para. 119; and Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI).

[1311] United States' first written submission, paras. 113 and 200; and Boeing use of NASA computers, 2007-2012, (Exhibit USA-270) (BCI) (the United States incorrectly refers to his exhibit to as Exhibit USA-248 at fn 167, para. 113 of its first written submission). The United States filtered data from monthly usage reports prepared by NASA's Advanced Supercomputing Division, to show the Standard Billing Units used by the projects associated with Boeing. The values assigned to Standard Billing Units each year are those NASA uses for internal budgeting purposes. See United States' response to Panel question No. 100, para. 184; and Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI).

[1312] United States' second written submission, para. 121; and Estimate of NASA's Employee Time in Support of Contracts with Boeing, (Exhibit USA-321) (BCI).

[1313] United States' second written submission, section II.A.1.a.

[1314] United States' first written submission, paras. 45-48.

[1315] United States' second written submission, paras. 112 and 114; comments on the European Union's response to Panel question No. 89, paras. 107 and 108.

[1316] United States' second written submission, para. 123 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1104).

[1317] United States' second written submission, para. 115; comments on the European Union's response to Panel question No. 89, para. 110.

[1318] United States' second written submission, para. 122; comments on the European Union's response to Panel question No. 89, para. 110.

[1319] United States' response to Panel question No. 99, para. 180.

[1320] United States' response to Panel question No. 99, para. 178.

[1321] United States' response to Panel question No. 99, para. 180.

8.2.2.6.2.2 Evaluation by the Panel

8.249. The parties' estimates of the amount of the financial contribution provided through the post-2006 NASA aeronautics R&D subsidies differ significantly because they are based on fundamentally different methodologies. As in the original proceeding, the European Union takes a "top-down" approach, based on total budgeted costs of the NASA aeronautics R&D programmes through which the NASA procurement contracts, cooperative agreements, and Space Act Agreements with Boeing are funded, and Boeing's share of the U.S. civil aircraft industry (represented by Boeing commercial airplane sales as a percentage of sales of U.S. civil aircraft products and services). The United States takes a "bottom-up" approach, which values the aggregate payments made, and the provision of access to facilities, equipment, and employees, to Boeing through the individual procurement contracts, cooperative agreements, and Space Act Agreements funded under the relevant NASA aeronautics R&D programmes.

8.250. In the original proceeding, the European Communities estimated the amount of the financial contribution provided through the NASA aeronautics R&D subsidies to be USD 10.4 billion between 1989 and 2006, of which USD 3 billion was allocated to the 2004-2006 period.[1322] The United States, by contrast, estimated the amount in question as "less than" USD 855 million.[1323] The panel ultimately concluded that the amount of payments and access to NASA facilities, equipment, and employees provided by NASA to Boeing through the NASA procurement contracts and Space Act Agreements between 1989-2006 was approximately USD 2.6 billion.[1324] The original panel based this estimate on the methodology employed by the United States.[1325] This "bottom-up" methodology estimates the aggregate values of individual payments, and access to facilities, equipment, and employees provided to Boeing by NASA through the NASA procurement contracts and Space Act Agreements funded under the challenged aeronautics R&D programmes.

8.251. As explained above, the United States' estimate of the amount of the financial contribution covers the transactions that correspond to those found to constitute financial contributions: payments under NASA procurement contracts and cooperative agreements; the provision of access to NASA equipment and facilities (including computer usage) and employees under NASA procurement contracts and cooperative agreements; and the provision of access to NASA facilities equipment and employees under Space Act Agreements. While the methodology that the United States uses to determine the value of payments mirrors that adopted by the original panel, the methodology for estimating the other types of transactions differs somewhat. In the original proceeding, owing to the incompleteness of data concerning the value of access to NASA facilities, equipment, and employees, the panel (at the United States' suggestion) estimated the value of such access based on Boeing's share of overall payments made under the challenged NASA aeronautics R&D programmes.[1326] By contrast, the United States' evidence in this proceeding, submitted in response to the Panel's request for information pursuant to Article 13 of the DSU, is more extensive, and the United States argues that it can form the basis of the Panel's estimate of not only payments, but also the value of Boeing's access to NASA facilities, equipment, and employees. The European Union nonetheless maintains its position that the United States' evidence is unreliable and cannot form the basis of the Panel's estimate of the value of any of the categories of financial contribution that it identifies.

8.252. We therefore evaluate the European Union's specific criticisms of the United States' evidence in detail, to ascertain whether we agree that flaws in the United States' evidence are such that the United States' estimate cannot form the basis for the Panel's estimate of the amount of the financial contribution.

Evidence regarding the amount of payments under NASA procurement contracts and cooperative agreements

8.253. The evidence on which the United States relies for its estimate of the value of payments under procurement contracts and cooperative agreements is contained in Exhibits US-13-1 and

[1322] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1050.
[1323] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1054.
[1324] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1110.
[1325] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1081.
[1326] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1094 and 7.1095.

USA-37.[1327] Exhibit US-13-1 contains a list of NASA Contracts and Cooperative Agreements which was compiled in response to Questions 5 and 7 of the Panel's request for information pursuant to Article 13 of the DSU, which sought:

> {A} list of all NASA contracts involving Boeing under the programs listed below that were entered into or that have provided funding and support from FY 2006 – present.
> …
> - Fundamental Aeronautics
> - Aviation Safety
> - Integrated System Research
> - Aeronautics Strategy and Management
> - Aeronautics Test Program
> - High End Computing
> - Strategic Capabilities Assets Program[1328]
>
> …
>
> {A} list of all grants or cooperative agreements involving Boeing under the programs listed in question 5 or relating to NASA assets provided (i.e., managed) or funded under those programs, that were entered into or that have provided funding and support from FY 2006-present.[1329]

8.254. To generate the list of procurement contracts and cooperative agreements that the United States submits as evidence for its estimate, the United States identified the procurement contracts and cooperative agreements between NASA and Boeing that were funded through the challenged NASA aeronautics R&D programmes, based on a listing generated by the Federal Procurement Data Base-Next Generation (FPDS-NG).[1330] Unlike in the original proceeding, the United States did not subsequently eliminate from that listing instruments that were considered by NASA personnel to relate to non-aeronautics research. According to the United States, the methodology it adopted for this proceeding inquired only into the source of the funds for each instrument, rather than excluding payments based on an evaluation of the type of research conducted under each instrument.[1331] The United States submits evidence of every payment received by Boeing under the resulting list of procurement contracts and cooperative agreements. Excluding those payments received from an unchallenged programme, these add up to approximately **[***]**.[1332]

[1327] List of NASA Contracts and Cooperative Agreements, (Exhibit US-13-1) (BCI); and Obligations under NASA contracts with Boeing for FY 2007-FY 2012 (formerly Exhibit US-13-1), (Exhibit USA-37) (BCI).

[1328] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 5, para. 17. The United States provided a "List of NASA Contracts and Cooperative Agreements" as Exhibit US-13-1 (BCI) which subsequently became Exhibit USA-37 (BCI).

[1329] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 7, para. 17. The United States provided a "List of NASA Contracts and Cooperative Agreements" as Exhibit US-13-1 (BCI) which subsequently became Exhibit USA-37 (BCI).

[1330] As in the original proceeding, the United States first generated a list of all payments made by the four NASA aeronautics research centres as reported in the FPDS-NG and identified payments funded through the challenged NASA aeronautics R&D programmes. (See United States' second written submission, paras. 111-114). The four NASA research centres are Dryden, Langley, Ames, and Glenn. In the original proceeding, the panel found that these four centres accounted for more than 99% of NASA's aeronautics R&D, and confirmed, for the purposes of accepting the United States' methodology of generating a list of contracts between Boeing and the United States, that "*substantially all* NASA aeronautics expenditures were undertaken by these four centers". (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1079 (emphasis original)).

[1331] United States' second written submission, paras. 112 and 113.

[1332] Obligations under NASA contracts with Boeing for FY 2007-FY 2012 (formerly Exhibit US-13-1), (Exhibit USA-37) (BCI). A number of contracts and cooperative agreements at issue received funding from multiple NASA programmes. The United States only includes in its estimate of payments those payments that were received from challenged programmes.

8.255. The European Union argues that the United States relies on the same flawed set of data as in the original proceeding which led the original panel to find that the amount of payments received by Boeing was significantly higher than that submitted by the United States.[1333]

8.256. We note that in the original proceeding, the panel found that the FPDS-NG was the best source of information for compiling a list of contracts between NASA and Boeing.[1334] The panel did revise the United States' estimate upwards, but this was because it disagreed with a final step in the United States' methodology in that proceeding, in which NASA personnel had excluded certain payments from its estimate.[1335] The United States *did not take this step* in arriving at its estimate in the current proceeding.[1336] Otherwise, the United States' methodology for estimating payments remains the same as the methodology that was accepted by the panel in the original proceeding.

8.257. The European Union makes no other specific criticisms of the United States' methodology for estimating the amount of the payments under the NASA procurement contracts and cooperative agreements. We consider that the United States' evidence is the best evidence available as to the amount of payments received by Boeing under NASA procurement contracts and cooperative agreements.

Evidence regarding the value of the provision of access to equipment and facilities under NASA procurement contracts and cooperative agreements

8.258. In arriving at its estimate of the value of the access to equipment provided to Boeing under the NASA procurement contracts and cooperative agreements, the United States takes the list of procurement contracts and cooperative agreements provided in response to the Panel's request for information pursuant to Article 13 of the DSU[1337], and submits a separate exhibit detailing the value of access to equipment provided by those instruments.[1338] The United States notes that the values it provides in USA-Exhibit 271 for access to equipment provided to Boeing under the procurement contracts and cooperative agreements (and the values it provides in Exhibit USA-270 for Boeing's access to facilities) indicate, for the most part, the value of NASA's acquisition cost, rather than the value of the temporary use of the equipment, which is what Boeing generally receives under these instruments. Since the value of the acquisition cost tends to be larger than the value of temporary use, the United States considers that, if anything, its figures overstate the value of Boeing's access to equipment (and the value of Boeing's access to facilities) under procurement contracts and cooperative agreements.[1339]

[1333] European Union's second written submission, para. 261.
[1334] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1073.
[1335] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 695.
[1336] United States' second written submission, para. 113.
[1337] See para. 8.254 above.
[1338] The United States appears to regard its estimates of the value of Boeing's use of NASA computers in Exhibit USA-270, and of equipment provided under NASA contracts and agreements in Exhibit USA-271 (BCI), as representing the value of access to NASA facilities and equipment under the NASA procurement contracts and cooperative agreements. (See United States' second written submission, para. 115 and fn 128, referring to these exhibits). In its first written submission, the United States asserts that access to NASA facilities under procurement contracts, other than with respect to NASA computers, "was also quite limited, although the United States does not at this time have an estimate". (United States' first written submission, para. 113; see also United States' second written submission, para. 200: "NASA contracts with Boeing did not provide for extensive usage of facilities. Use of NASA computers by Boeing for work on NASA contracts had a value of approximately **[***]** in the 2007-2012 period"). We note that in response to the Panel's request for information pursuant to Article 13 of the DSU, for the total value of the access to government facilities, equipment, personnel, and other institutional support provided to Boeing at the four NASA aeronautics research centres, the United States explained that the relevant procurement contract, cooperative agreement, or Space Act Agreement is the only record maintained by NASA that describes the provision of government property, government data, and access to government facilities, equipment, personnel, and other institutional support. (United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 14, paras. 31 and 32). In its first written submission, when discussing the payments provided to Boeing through the procurement contracts (including BOAs and tasks), cooperative agreements, and Space Act Agreements under the challenged NASA aeronautics R&D programmes, the United States refers to the instruments that provide for use of NASA facilities, and those where there was no government property or access to government facilities provided under the relevant instrument. (See United States' first written submission, paras. 126, 128, 130, 133, 139, 142, 158, 163, 165, 173, 182, 183, 185, and 186).
[1339] United States' second written submission, para. 119.

8.259. In response to the European Union's argument that it is not possible to confirm the reported values listed in Exhibit USA-271, the United States notes that the value of access to equipment under procurement contracts and cooperative agreements is recorded in the instrument itself.[1340] It notes that, according to NASA acquisition regulations, NASA cannot provide such access to contractors without recording in the instrument the item provided and its acquisition cost.[1341] Where a contractor seeks to use property for non-governmental work, general Federal Acquisition Regulations require the payment of rent to be agreed with the contracting officer.[1342]

8.260. The European Union argues that the acquisition regulations to which the United States refers only apply to procurement contracts, and not to cooperative agreements, implying that it is technically possible for NASA to have provided Boeing with access to property, facilities or equipment through a cooperative agreement, without having recorded the fact in the instrument itself.[1343] Further, the European Union argues that these regulations were replaced in 2011 with regulations that do not require an itemised list or indication of value for the furnishing of government property.[1344] However, having reviewed the exhibit submitted by the European Union in support of this argument, we note that, where government property is supplied in the course of a procurement contract, NASA is still required to insert a clause into the contract stating "a description of the item(s), acquisition date, quantity, acquisition cost and applicable equipment information".[1345]

8.261. The European Union also argues that the United States' list does not appear to include all of the NASA procurement contracts and cooperative agreements with Boeing during the FY 2007-FY 2012 period; this is because not every instrument listed on Exhibit USA-37 (the list of all procurement contracts and cooperative agreements between NASA and Boeing that were funded by the challenged NASA aeronautics R&D programmes) appears on Exhibit USA-271. The Panel has cross-referenced Exhibit USA-271 against Exhibit USA-37. We note that, of the 101 procurement contracts and cooperative agreements which are listed as having received payments from the challenged NASA aeronautics R&D programmes, 16 are not recorded on Exhibit USA-271. Of those 16, five are purchase orders, which the United States explains involve no research on Boeing's part, or the provision of facilities, property, or equipment to Boeing.[1346] With respect to two further instruments, the United States has submitted the instruments themselves as exhibits, and we are able to confirm that they do not provide for access to facilities, equipment, or employees.[1347]

8.262. For the nine remaining instruments that appear on Exhibit USA-37 but are not listed on Exhibit USA-271, the Panel is unable to confirm, based on the evidence provided by the United States, whether they provided Boeing with access to facilities or equipment. Not all of the instruments listed on Exhibit USA-37 as having received payments under the challenged NASA aeronautics R&D programmes necessarily provided access to NASA facilities or equipment; in fact, the majority did not involve such access.[1348] It is possible that the nine unaccounted-for instruments simply provided Boeing with payments, but no other access, which is why they are not recorded in Exhibit USA-271. However, Exhibit USA-271 does contain other procurement contracts

[1340] The United States notes that Exhibit USA-271 records the value of access to equipment as it is recorded in the contract instrument itself *except where indicated.* (See United States' response to Panel question No. 100, para. 185). Exhibit USA-271 provides a more detailed methodology for assessing the value of equipment for five contracts.

[1341] United States' second written submission, para. 115; *United States Code of Federal Regulations*, Title 14, section 1845, (Exhibit USA-300); and *United States Code of Federal Regulations*, Title 48, section 1852.245, (Exhibit USA-301).

[1342] United States' second written submission, para. 115.

[1343] European Union's comments on the United States' response to Panel question No. 100, para. 280.

[1344] European Union's comments on the United States' response to Panel question No. 100, para. 280; *United States Code of Federal Regulations*, Title 14, section 1845, (Exhibit USA-300); *United States Code of Federal Regulations*, Title 48, section 1852.245, (Exhibit USA-301); and *United States Code of Federal Regulations*, Title 48, section 1852.245-76 (2013), (Exhibit EU-1427).

[1345] *United States Code of Federal Regulations*, Title 48, section 1852.245-76 (2013), (Exhibit EU-1427). (emphasis added)

[1346] United States' first written submission, para. 187.

[1347] NASA Contract NNL08AA02B (3 April 2008), (Exhibit US-13-132); NASA Purchase Order NND08AA04P (formerly Exhibit US-13-84), (Exhibit USA-52) (HSBI).

[1348] Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI). Of the total number of instruments listed in Exhibit USA-271, less than half provided for access to government property, facilities or equipment.

and cooperative agreements that provided no access to facilities or equipment, so this alone may not explain the absence of the nine instruments from Exhibit USA-271.[1349] It is clear that there appear to be some errors in Exhibit USA-271, whether they involve the omission of instruments that did involve the provision of access to NASA facilities and equipment, or the addition of instruments that did not involve such provision. However, we do not consider that the nature and significance of such errors warrants the Panel disregarding the United States' estimate altogether. We note that the vast majority of instruments listed in Exhibit USA-37 (92 out of 101) are accounted for in Exhibit USA-271. Rather, in order to ensure that the Panel's estimate of the amount of the financial contributions is comprehensive, we propose to revise the United States' figure upwards to reflect the value of any access to NASA facilities and equipment that *may* have been provided by the nine unaccounted-for instruments.

8.263. The nine instruments together received approximately USD 11 million in payments from the challenged NASA aeronautics R&D programmes during the FY 2007-FY 2012 period, which is approximately 10% of the total amount of payments received by Boeing under those programmes.[1350] We consider that the amount of funding received by these instruments provides a reasonable approximation of the scope of work performed under them, and can be used as a proxy to estimate the extent of access to any equipment provided by those instruments. We therefore add 10% to the United States' estimated **[***]** as the value of access to equipment, which brings the total estimate of the value of access to equipment under the NASA procurement contracts and cooperative agreements to **[***]**.

8.264. Lastly, the European Union considers that the United States' figure ignores altogether the value of Boeing's access to NASA facilities (as opposed to equipment or property).[1351] The United States' list, however, contains a number of specific references to facilities, so we see no grounds for the European Union's general assertion that the United States' estimate ignores the value of access to NASA facilities.[1352] While the United States' list in Exhibit USA-271 does not include a value for access to facilities provided for by NASA Contract NNL09AD50T, the United States specifically refers to facilities provided by this contract in its submissions, and values Boeing's access at approximately **[***]**.[1353] We therefore also consider it appropriate to revise the United States' figure upwards, to **[***]**, to take account of this omission.

8.265. We acknowledge that the United States' failure to include NASA Contract NNL09AD50T in Exhibit USA-271, despite referencing this procurement contract in its submissions, suggests that there may have been errors in the process of compiling the evidence on which the United States bases its amount estimate. Like the original panel, however, we consider that the fact that NASA may have made mistakes in compiling the relevant information, and that NASA's records themselves are not perfect, does not indicate that the United States' evidence is, as a whole, unreliable.[1354] We are not obliged, in estimating the amount of the subsidy let alone the amount of the financial contributions, to arrive at a precise quantification[1355], and having reviewed the United States' evidence in light of the European Union's criticisms, we conclude that it is sufficiently reliable and comprehensive to constitute the best available evidence for an estimate of the value of access to facilities and equipment provided under the NASA procurement contracts and cooperative agreements funded under the relevant NASA aeronautics R&D programmes.

8.266. The United States provides a separate estimate of **[***]** for the value of Boeing's computer use, as a component of the value of access to NASA facilities.[1356] In response to the

[1349] United States' response to Panel question No. 100, para. 187.

[1350] Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI); and Obligations under NASA contracts with Boeing for FY 2007-FY 2012 (formerly Exhibit US-13-1), (Exhibit USA-37) (BCI).

[1351] European Union's comments on the United States' response to Panel question No. 100, para. 283.

[1352] For example, Exhibit USA-271 includes values for facilities provided by NASA contracts NNC07CB38C and NNC12AA01A.

[1353] United States' first written submission, para. 126; and NASA Contract NNL04AA11B, task order NNL09AD50T, (Exhibit USA-26) (BCI).

[1354] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1081.

[1355] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1101 (citing Appellate Body Report, *US – Upland Cotton*, para. 467).

[1356] United States' first written submission, paras. 113 and 200; and Boeing use of NASA computers, 2007-2012, (Exhibit USA-270) (BCI) (the U.S. incorrectly refers to his exhibit to as USA-248 at fn 167, para. 113 of its first written submission). The United States notes that this figure, if anything, overstates the

European Union's argument that the United States provides no explanation of its methodology for calculating this figure, the United States explains that NASA compiled data from 2006 to 2013 using monthly usage reports prepared by NASA's Advanced Supercomputing Division, which show usage assigned to each project expressed in terms of Standard Billing Units (SBU).[1357] These reports were then filtered to display the projects associated with Boeing. The value assigned to the resulting set of SBUs is the value that NASA uses for its internal budgeting period.[1358]

8.267. The European Union considers that the value of Boeing's computer usage seems "extraordinarily low", and argues that it likely accounts only for the cost of resources consumed by the usage, rather than the market value of the resource.[1359] It notes that, according to SBU values, one hour of computer usage costs 73 cents, and compares this to one hour of internet use in an internet cafe, where the same costs between USD 3.50-4.[1360]

8.268. We do not consider that the European Union establishes that the United States' evidence as to the value of Boeing's computer use cannot be relied upon. The European Union only speculates that NASA's SBUs take into account only the cost of Boeing's use of the supercomputer; there is no evidence that this is actually the case. Moreover, the European Union does not explain why a proper valuation of the financial contribution should take into account the market value of the supercomputer itself, rather than the value of Boeing's use of the supercomputer. Finally, we are not persuaded that the European Union's comparison between the computing costs incurred by a large-scale organization like NASA and the per-hour retail costs charged in an internet cafe is probative as to the accuracy or otherwise of the United States' figures.

8.269. We see no flaws in the United States' methodology for estimating the value of computer usage that would warrant dismissing its estimate, and conclude, therefore, that it remains the best available evidence as to the value of Boeing's use of NASA's computers.

Evidence regarding the value of the provision of access to NASA employees under NASA procurement contracts and cooperative agreements

8.270. With respect to the United States' estimate of the value of Boeing's access to NASA employees under procurement contracts and cooperative agreements, the United States relies on evidence contained in Exhibit USA-321.[1361] The United States argues that Boeing had access to NASA employees only for a limited period of time, and for a limited purpose. The work of NASA employees in relation to procurement contracts and cooperative agreements with Boeing was limited to financial administration and management, technical monitoring to ensure that the contractor complied with the terms of the instrument, and managing logistics. NASA estimates that the value of these activities represented USD 17.4 million.[1362]

8.271. The European Union does not dispute the methodology or selection process through which the United States generates its estimate of the value of Boeing's access to NASA employees. The European Union argues that, even if NASA employees spend relatively little time working with Boeing directly under the particular procurement contract or cooperative agreement, the value of Boeing's access to NASA employees is affected by the amount that NASA invests in those aspects

value of Boeing's computer use, since it includes Boeing's use of computers for hypersonic research, which has no application to LCA. (See United States' second written submission, para. 119).

[1357] A Standard Billing Unit is a common rate used for allocating and tracking computing time at NASA's Advanced Supercomputing facility. (See United States' response to Panel question No. 100, para. 184).

[1358] United States' response to Panel question No. 100, para. 184.

[1359] European Union's comments on the United States' response to Panel question No. 100, paras. 278 and 279.

[1360] European Union's comments on the United States' response to Panel question No. 100, para. 279; NASA, The HEC Environment, Allocations & Accounts, *Common Standard Billing Unit (SBU) Rates*, available at: <http://www.nas.nasa.gov/hecc/support/kb/Common-Standard-Billing-Unit-(SBU)-Rates_271.html>, accessed 1 September 2016, (Exhibit EU-1424); J. Santo Domingo, "Comparing Dual-Core vs. Quad-Core CPUs", *PC Magazine*, 5 July 2012, (Exhibit EU-1425); and Examples of Internet Cafe Pricing, (Exhibit EU-1426).

[1361] Estimate of NASA's Employee Time in Support of Contracts with Boeing, (Exhibit USA-321) (BCI).

[1362] United States' second written submission, para. 121. The United States explains that, for budget purposes, NASA values its professional personnel time at USD 150,000 per full-time equivalent (which translates to the work performed by one person over the course of a year). NASA estimates that the work of NASA personnel involved in the activities referred to above (i.e. financial administration and management, technical monitoring to ensure that the contractor complied with the terms of the contract and satisfied all deliverables, and managing logistics), occupied 115.8 units of full-time equivalent.

of its own physical and human capital relevant to Boeing's research efforts.[1363] This is a version of the European Union's argument that, regardless of any flaws it has identified in the United States evidence, the United States' overall methodology for estimating the financial contribution "massively undercounts" the real value of the financial contribution by not recognizing the collaborative, iterative nature of NASA and Boeing's R&D work. Along with the European Union's concerns as to the United States' evidence, it is this argument that underlies the European Union's "top-down" approach for calculating the value of the financial contribution.

8.272. Unlike the United States' methodology for calculating the value of the financial contribution to Boeing under the procurement contracts, cooperative agreements, and Space Act Agreements, the European Union's "top-down" methodology for estimating the amount of the financial contribution provided through the NASA aeronautics R&D subsidies does not correspond to the nature of the financial contributions as argued by the parties and as found by the Panel (i.e. as payments and the provision of access to NASA facilities, equipment, and employees through certain legal instruments funded under identified NASA aeronautics R&D programmes). Rather, the European Union's methodology is based on an allocation of the portion of the NASA programme budgets to Boeing based on the value of Boeing's commercial airplane sales as a proportion of total U.S. civil aircraft sales. It is not an estimate of the value of the "financial contributions" because the financial contributions that the Panel has found to exist are not all or a portion of the NASA aeronautics R&D programme budgets, but particular *transactions between NASA and Boeing* that occur through certain legal instruments which are funded by those aeronautics R&D programmes.

8.273. The European Union argues that the value of the access to NASA facilities, equipment, and employees extends beyond the "four corners" of the instruments because of the value of investments that NASA makes in itself, which cannot be quantified from payments and use of facilities, equipment, and employees. This argument is similar to an argument that the European Communities made in the original proceeding, which the panel rejected.[1364] We are not persuaded by the European Union's argument that the amount of the financial contributions cannot be captured within the "four corners" of the transactions found to constitute the financial contributions for the same reasons that the original panel rejected the European Communities' argument in the original proceeding. First, because it is at odds with the nature of the financial contributions that we find to exist; namely, the payments and access to NASA property facilities, equipment, and employees provided through procurement contracts, cooperative agreements, and Space Act Agreements with Boeing which are funded through particular NASA aeronautics R&D programmes. Second, because the European Union does not identify the "investments" that NASA allegedly makes in its own physical and human capital, or the types of transactions through which these investments are made and are shared to transmit to Boeing. Finally, we have previously found that a number of the challenged NASA programmes did not actually fund any procurement contracts, cooperative agreements, or Space Act Agreements between NASA and Boeing.[1365] In other words, these programmes *did not provide financial contributions to Boeing*. Despite this, the European Union's methodology impermissibly includes portions of the budgets of these programmes in its estimate of the financial contribution made by NASA to Boeing.

8.274. Nor are we persuaded that all, or a portion of, the CASP Program should be included in an estimate of the amount of the financial contribution, as a way of capturing NASA funding and support that allegedly operates outside of the "four corners" of the instruments that constitute the financial contributions to Boeing. First, the European Union did not include the CASP Program as one of the challenged NASA aeronautics R&D measures in section I.A of its panel request, and in our view, funding and support provided through an unchallenged programme is outside our terms of reference. Second, the European Union's justification for including funding under the CASP Program in its estimate is that its panel request covers the entirety of any "contracts, assistance instruments and other agreements" that are funded by the challenged NASA aeronautics R&D programmes, meaning that if a particular instrument is funded by a challenged programme, any

[1363] European Union's second written submission, fn 413 and para. 264.

[1364] The European Communities argued that the United States' "bottom-up" estimates of the amounts in the original proceeding should be rejected because they failed to account for the fact that NASA allegedly provided Boeing with access to the results of the R&D performed by NASA in-house and by other contractors. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1102).

[1365] These programmes are: Aeronautics Strategy and Management Program, High End Computing Program, and Strategic Capabilities Assets Program. See paras. 8.67 to 8.72 above.

other payments made by additional programmes, such as CASP, to that same instrument are also covered by the European Union's panel request.[1366] The European Union's *methodology* for including CASP payments in its estimate of the financial contribution does not, however, correspond to this reasoning. The European Union does not identify specific instruments funded by both a challenged aeronautics R&D programme and the CASP Program, which would allow it to account for what each instrument actually received from the CASP Program. Instead, it "apportions" percentages of the CASP Program budgets to each challenged aeronautics R&D programme based on each programme's share of NASA's total funding. This, as explained earlier, does not correspond to what, in the European Union's own arguments, actually constitutes the financial contribution. We are therefore unable to accept both the European Union's overall methodology for estimating the financial contribution, and its inclusion of a portion of the unchallenged CASP Program in that estimate.

Evidence regarding the value of access to facilities, equipment and employees provided under Space Act Agreements

8.275. Finally, the United States relies on evidence contained in Exhibit USA-60 and Exhibit US-13-2 for its estimate of the value of access to facilities, equipment, and employees provided under the Space Act Agreements. This list was compiled in response to Question 6 of the Panel's request for information pursuant to Article 13 of the DSU, which sought:

> {A} list of all non-reimbursable or partially reimbursable Space Act Agreements ("SAAs") that were entered into or that have provided funding and support from FY 2006-present, involving Boeing under the programs listed in question 5 or relating to NASA assets provided (i.e., managed) or funded under those programs.[1367]

8.276. The United States generated the list of Space Act Agreements it provided in response to the Panel through a five-step process. First, NASA generated a list of all Space Act Agreements entered into between NASA's four aeronautics research centres and Boeing, using NASA's Space Act Agreement Maker System, into which, as required by NASA Policy Directive 1050 1H, every Space Act Agreement must be entered.[1368] Second, ARMD had the list reviewed by all Center Agreement Managers to validate data and add any missing information. Third, these officials also provided copies of any instruments not already in the possession of ARMD and verified their values with the Chief Financial Officers of the four aeronautics research centres. Fourth, ARMD determined the programme responsible for the funding of each Space Act Agreement, and identified whether each Space Act Agreement was fully, partially, or non-reimbursable. Finally, in accordance with the parameters of the Panel's request for information pursuant to Article 13 of the DSU, fully-reimbursable Space Act Agreements, along with Space Act Agreements funded through programmes that the European Union had not challenged, were removed from the list.[1369] In the original proceeding, the panel rejected the United States' estimate of the value of goods and services provided under Space Act Agreements, because it considered that there were limitations in the evidence that the United States relied on to support its estimate.[1370] The European Union argues that, for the same reason, the Panel should reject the United States' figures for the transactions in this proceeding.[1371]

8.277. More specifically, the European Union points out that a number of the Space Act Agreements on the list provided by the United States contain no valuation information, and argues therefore that the list cannot be used as a basis for the Panel's estimate. The United States

[1366] European Union's comments on the United States' response to Panel question No. 99, para. 263.
[1367] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 6, para. 18. The United States provided a "NASA SAA List" as Exhibit US-13-2 which subsequently became Exhibit USA-60 (BCI).
[1368] NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303). These research centres are: Dryden, Langley, Ames, and Glenn. In the original proceeding, the panel found that these four centres accounted for more than 99% of NASA's aeronautics R&D, and confirmed, for the purposes of accepting the United States' methodology of generating a list of contracts between Boeing and the United States, that "*substantially all* NASA aeronautics expenditures were undertaken by these four centers". (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1079 (emphasis original)).
[1369] United States' second written submission, para. 117.
[1370] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1094.
[1371] European Union's comments on the United States' response to Panel question No. 100, para. 286.

responds, first, that certain of the Space Act Agreements on its list are "umbrella" instruments, which do not provide valuation information and merely set out the overarching terms for work that is then memorialised in subsequent annexes, which provide valuation information.[1372] Second, the United States explains that the list contains some Space Act Agreements that were signed, but for which costs were not ultimately incurred.[1373] The United States acknowledges that, of the approximately 40 Space Act Agreements on its list, NASA is missing value information for two. These instruments are SAA2-402214 and SAA3-402268.

8.278. In the original proceeding, of the 38 Space Act Agreements identified by the United States, 17 were missing value information.[1374] Unlike in the original proceeding, the United States' evidence concerning the value of access to facilities, equipment, and employees provided to Boeing under the Space Act Agreements was supplied in response to a specific request from the Panel pursuant to Article 13 of the DSU. It is far more comprehensive than the information provided by the United States in the original proceeding. In our view, the factors which led the original panel to reject the United States' valuation of the access to facilities, equipment, and employees provided to Boeing under Space Act Agreements are not present in respect of the evidence submitted by the United States in relation to that issue in this proceeding.

8.279. The European Union also argues that the United States does not indicate how NASA arrives at a valuation of the access to facilities, equipment, and employees provided to Boeing. The United States responds that each of NASA's four research centres is required to prepare a cost estimate in accordance with guidance from NPR 9090.1A, which requires a determination of the full cost of the Space Act Agreements, including direct and indirect costs. In accordance with this guidance, NASA values the costs waived in a Space Act Agreement by taking into account direct costs, which include: salaries and other benefits for employees who work directly on the output; materials and supplies used in the work; various costs associated with office space, equipment, facilities, utilities that are used exclusively to produce the output; costs of goods or services received from other segments or entities that are used to produce the output; and other costs related to the production of the output. Indirect costs include "costs of resources that are jointly or commonly used to produce two or more types of outputs, but are not specifically identifiable with any of the outputs". This includes costs of general and administrative services, general research and technical support, security, rent, employee health, and recreation facilities.[1375]

8.280. The European Union argues that the requirement in NPR 9090-1A to value costs waived under a Space Act Agreement only applies to reimbursable Space Act Agreements, and not to the non-reimbursable or partially-reimbursable Space Act Agreements that are at issue here.[1376] The United States' submissions state, however, that while formally speaking, the above-referenced directive only applies to reimbursable Space Act Agreements, another directive, NPD 1050.1I, also requires preparation of cost estimates for non- or partially-reimbursable Space Act Agreements.[1377] Although this latter directive does not set forth its own, separate methodology for calculating these costs, we understand that the methodology in NPR 9090-1A also applies here.

8.281. In light of the foregoing, we find that there is no basis not to accept the estimate provided by the United States as the best evidence available regarding the value of the access to facilities,

[1372] The United States resubmitted Exhibit USA-60 (BCI) to indicate which of the listed Space Act Agreements were "umbrella" instruments. These instruments are: Non-reimbursable Space Act Agreement between the Boeing company and National Aeronautics and Space Administration for environmentally responsible air vehicle concept research, SAA1-1018 (May 2010), (Exhibit USA-100) (BCI); Partially-reimbursable Space Act Agreement between the Boeing company and National Aeronautics and Space Administration for Aerospace Research and Development, SAA1-1145 (September 2011), (Exhibit USA-13-254); Non-reimbursable Space Act Agreement between the Boeing company and National Aeronautics and Space Administration for Aerospace Research and Development, SAA1-1155 (November 2011), (Exhibit USA-87); and Space Act Agreement SAA1-640 between the National Aeronautics and Space Administration and the Boeing company for the cooperative investigation of a cruise-efficient hybrid wing-body concept at the Langley Research Center National Transonic Facility, ("umbrella" agreement not submitted as a separate exhibit). (See NASA SAAs with Boeing (formerly Exhibit US-13-2), (Exhibit USA-60) (BCI)).

[1373] These instruments are: DRFC-276, SAA1-757, annex 13, and SAA2-401097, annex 15.

[1374] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1092.

[1375] United States' response to Panel question No. 100, para. 182; and NASA Procedural Requirements, *Reimbursable Agreements*, 9090.1A, (25 February 2013), (Exhibit USA-486).

[1376] European Union's comments on the United States' response to Panel question No. 100, para. 273.

[1377] United States' response to Panel question No. 100, fn 249 and para. 182; and NASA Policy Directive on Authority to Enter into Space Act Agreements, NPD 1050.1I (23 December 2008), (Exhibit USA-303).

equipment, and employees provided to Boeing under the post-2006 Space Act Agreements at issue.

8.282. We have conducted an extensive review of the United States' evidence supporting its estimate of the amount of the financial contributions provided through the NASA aeronautics R&D subsidies, in light of the numerous criticisms of the European Union regarding different aspects of the methodology and evidence. We consider the United States' methodology for arriving at its estimates, for each of the categories of transactions it identifies as comprising the financial contribution, to be reasonable and appropriate. We identify where the United States has made errors, and have endeavoured to make adjustments to the United States' estimates to account for those errors. We conclude that none of the errors or omissions is so serious that it undermines the overall reliability of the United States' estimates.

8.283. We would add that we do not accept the European Union's allegation that the United States has failed to cooperate in providing the information that is necessary to arrive at a reliable estimate of the amount of the financial contributions.[1378] We note that, in February 2013, in response to requests made by the Panel pursuant to Article 13 of the DSU, the United States provided the following lists of NASA instruments related to the European Union's claims:

a. A list of all NASA procurement contracts with Boeing funded under the challenged NASA aeronautics R&D programmes, that were entered into or that provided funding and support, from FY 2006 until 2012.[1379]

b. A list of all grants or cooperative agreements involving Boeing under the challenged NASA aeronautics R&D programmes relating to NASA assets provided or funded under those programmes that were entered into or that have provided funding or support from FY 2006 to 2012.[1380]

c. A list of all non-reimbursable or partially-reimbursable Space Act Agreements that were entered into or that provided funding and support from FY 2006 to 2012, involving Boeing under the challenged NASA aeronautics R&D programmes.[1381]

d. A list of all additional contracts, task orders, non-reimbursable or partially-reimbursable Space Act Agreements, grants, or agreements involving Boeing that were related to aeronautics R&D and that were entered into or have provided funding and support from FY 2006 to 2012 that were not previously listed.[1382]

8.284. Moreover, the United States provided a list of every revenue-related action that occurred for the items listed in (a) through (d) above in the FY 2007-FY 2012 period, showing the obligation amount associated with each contract and the fiscal year of the obligation on a contract action inventory.[1383] It also provided information as to the total amount of funds obligated or disbursed to Boeing for each year since FY 2006 for each of the four NASA aeronautics research centres, and information regarding the total value of access to government facilities, equipment, personnel, and other institutional support provided to Boeing for each year since FY 2006 at or by such

[1378] European Union's first written submission, para. 179.

[1379] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 5 para. 17. The United States provided a "List of NASA Contracts and Cooperative Agreements" as Exhibit US-13-1 (BCI) which subsequently became Exhibit USA-37 (BCI).

[1380] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 7, para. 19. The United States provided a "NASA List of NASA Contracts and Cooperative Agreements" as Exhibit US-13-1 (BCI) which subsequently became Exhibit USA-37 (BCI).

[1381] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 6, para. 18. The United States provided a "NASA SAA List" as Exhibit US-13-2 which subsequently became Exhibit USA-60 (BCI).

[1382] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 8, para. 20.

[1383] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 10, para. 23.

centres.[1384] In light of the above information provided by the United States, we are unable to see why the European Union considers it necessary to receive a full set of un-redacted NASA contracts and agreements in order to arrive at an estimate of the amount of the financial contribution.[1385]

8.285. In response to a Panel question in its third set of questions in September 2015, seeking information regarding the magnitude of difference in Airbus and Boeing pricing in sales campaigns, the European Union submitted an update for 2013 and 2014 of the amounts of the financial contribution from the U.S. subsidies that are alleged to cause adverse effects through a price causal mechanism.[1386] This information included updated estimates of the amounts of the financial contributions for the NASA aeronautics R&D subsidies for 2013 and 2014, based on the European Union's "top-down" methodology.[1387] Although there is no corresponding updated information regarding the amounts of the financial contributions for 2013 and 2014 based on the United States' methodology, this does not in our view, provide a reason to accept the European Union's estimates for the 2013 and 2014 amounts as the best available evidence of the amounts of the financial contributions for those years. This is because, as we have explained previously, the legal deficiencies in the European Union's methodology are too significant.[1388]

8.286. In light of our above findings regarding financial contribution, benefit, and specificity, we conclude that the European Union has established that certain transactions pursuant to post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements involve specific subsidies, within the meaning of Articles 1 and 2 of the SCM Agreement. We are unable to estimate the amount of the subsidy on the basis of the evidence on the record. To the extent that the amount of the financial contribution provided through these subsidies is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy, or taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8, the United States' methodology provides a reliable and appropriate basis for arriving at the relevant estimate. On the basis of this methodology, after making certain adjustments to the United States' estimates, **the Panel estimates that the amount of the financial contribution provided to Boeing through the NASA procurement contracts, cooperative agreements, and Space Act Agreements funded under the relevant aeronautics R&D programmes between 2007 and 2012 is approximately [***]**.

8.2.2.7 Conclusion

8.287. In light of our above findings regarding financial contribution, benefit, and specificity, we conclude that the European Union has established that certain transactions pursuant to post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement. While we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent it is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy or taken appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement, we find the United States' estimate of the financial contributions at **[***]** between 2007 and 2012 to be the most credible estimate.

[1384] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question Nos. 13 and 14, paras. 30 and 31-33; and NASA Obligations by Center, (Exhibit US-13-450) (BCI).

[1385] We recall that the European Union objected to redaction of portions of certain NASA procurement contracts referenced in the United States' first written submission in a communication to the Panel dated 9 September 2013 and requested the Panel to require the United States to produce un-redacted versions. That objection, however, related to assertions made by the United States that the fact that such instruments were export-controlled, classified or otherwise restricted demonstrated that the work performed under them could not be applied to or used to produce large civil aircraft. The European Union did not allege that the un-redacted portions of the contracts in question were necessary in order to enable it to arrive at the amounts of the financial contributions involved in those instruments. In any case, we declined the European Union's request in a ruling on that request dated 23 October 2013, attached at Annex F-2 to this Report.

[1386] European Union's response to Panel question No. 164, para. 114; and Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451). The United States did not submit a corresponding update of its estimate of the amount of the financial contributions.

[1387] Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), pp. 2 and 5-22.

[1388] The European Union's estimates also include allocations from NASA aeronautics R&D programmes for which the Panel has found there are no measures in existence. This is the case with respect to the Strategic Capabilities Assets Program, the Aeronautics Strategy and Management Program and the High End Computing Program. See Section 8.2.2.2.2 above.

8.2.3 Post-2006 DOD aeronautics R&D measures

8.2.3.1 Introduction

8.288. In this Section of our Report, we evaluate the European Union's allegations that the DOD's Research, Development, Test & Evaluation (RDT&E) Program involves specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and that by granting or maintaining these subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement.

8.289. This evaluation concerns post-2006 DOD aeronautics R&D measures that we have found to be within the scope of this proceeding in Section 7.3.[1389] It also includes an evaluation of whether the pre-2007 DOD procurement contracts involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement. This is because there were no subsidy findings, and therefore no adverse effects findings, regarding the pre-2007 DOD procurement contracts at the conclusion of the original proceeding. Therefore, the United States did not have a compliance obligation in relation to these pre-2007 aeronautics R&D measures, unlike the pre-2007 NASA aeronautics R&D subsidies and the pre-2007 DOD assistance instruments discussed in Section 8.1 above. However, for the reasons explained in Section 7.3, we have ruled that the pre-2007 DOD procurement contracts are within the scope of this proceeding. We therefore consider whether both the pre-2007 and post-2006 DOD procurement contracts are specific subsidies in this Section, as the legal issues raised are the same.

8.290. Before the original panel, the European Communities claimed that payments and access to DOD facilities provided to Boeing under 23 RDT&E program elements to conduct research into "dual-use" technologies[1390], in the sense of technologies having potential application to LCA[1391], were specific subsidies which caused adverse effects to the interests of the European Communities.[1392] The original panel identified two types of legal instruments through which DOD provided payments and access to DOD facilities to Boeing under the various RDT&E program elements; namely procurement contracts and assistance instruments.[1393]

8.291. The panel and the Appellate Body found that the payments and access to DOD facilities provided to Boeing under the *assistance instruments* at issue constituted specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement. There were ultimately no findings as to whether the payments and access to DOD facilities provided to Boeing through the *procurement contracts* entered into under the 23 RDT&E program elements constituted specific subsidies, or caused adverse effects. Rather, as explained in greater detail in Section 7.3.2.2 of this Report, the Appellate Body declared moot the original panel's finding that the DOD procurement contracts were properly characterized as "purchases of services" and thus were not financial contributions within the meaning of Article 1.1(a)(1).[1394]

8.292. The European Union disputes that the actions taken by the United States, as set forth in its Compliance Communication, including those with respect to the relevant DOD aeronautics R&D measures, bring the United States into compliance with the DSB recommendations and rulings.[1395]

[1389] We recall that with regard to pre-2007 DOD assistance instruments at issue in the original proceeding we find that the DOD-Boeing Patent Licence Agreement does not constitute a withdrawal of the subsidy, within the meaning of Article 7.8 of the SCM Agreement. See Section 8.1.3 above.

[1390] The European Communities based its assessment of whether R&D conducted by Boeing under any of the RDT&E program elements was likely to give rise to technologies with civil applications on an expert evaluation of the RDT&E program budgets. (CRA Report, (Exhibit EU-29), para. 1.1, p. 1). The European Union also relies on the 2006 CRA Report in this proceeding, along with an additional expert evaluation pertaining to post-2006 RDT&E budget activities. See also Rumpf Report, (Exhibit EU-23).

[1391] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1116 and 7.1117. We explain the different senses in which the concept of "dual-use" technologies is used in this proceeding in paras. 8.341 to 8.344 below.

[1392] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1116. The specific RDT&E program elements identified in the European Communities' panel request in the original proceeding appear at paragraph 7.1113 of that report.

[1393] See para. 8.298 below.

[1394] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 1298.

[1395] European Union's request for the establishment of a panel, para. 6.

8.293. We evaluate in Section 8.2.3.3 whether the post-2006 DOD aeronautics R&D measures that we have found to be within the scope of this compliance proceeding[1396] involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement and evaluate in Section 8.2.3.4 whether any such financial contributions confer a benefit within the meaning of Article 1.1(b). Our evaluation of whether any measures that we find to be subsidies within the meaning of Article 1 are specific within the meaning of Article 2 of the SCM Agreement appears in Section 8.2.3.5 of this Report.

8.294. Before discussing the subsidy and specificity issues, we provide relevant background factual and legal information regarding the DOD aeronautics R&D measures at issue.

8.2.3.2 The measures at issue

8.2.3.2.1 The European Union's panel request

8.295. In its panel request in this proceeding, the European Union alleges that U.S. DOD maintains subsidies benefiting U.S. LCA producers: (a) through the RDT&E Program; as well as (b) through contracts, assistance instruments, and other agreements (as modified) entered into under the RDT&E Program; in addition to (c) through specified U.S. Air Force, Navy, Army, and Defense-Wide program elements of the RDT&E Program; as well as (d) through contracts, assistance instruments, and other agreements (as modified) under these RDT&E program elements; and to the extent not entered into pursuant to the foregoing programmes (e) by entering into and following the terms of contracts and other agreements (as modified) with Boeing listed in annex B of the United States' Compliance Communication.[1397]

8.296. The forms of the subsidies are described as: (a) the provision to Boeing of funding and access to government facilities, equipment, and employees for R&D applicable to the development, design, and production of LCA on terms more favourable than would be available on the commercial market; as well as (b) the provision to Boeing of royalty-free use of the technologies developed with such funding and support or use of such technologies on preferential terms.[1398]

8.297. Although the European Union's panel request suggests that the European Union challenges *both* DOD's RDT&E Program as a whole *and* certain individual RDT&E program elements funded under (and as part of) the RDT&E Program, it is clear from the European Union's first written submission that its challenge is confined to particular "funding" and "access to government facilities, equipment and employees" provided to Boeing under *specified RDT&E program elements*, rather than DOD's RDT&E Program more generally. Hence, the "funding" and "access to government facilities, equipment and employees" challenged under those RDT&E program elements refers to payments made, and access to DOD facilities, equipment, and employees provided, *to Boeing* and not to other recipients. Such payments and access are provided through particular legal instruments entered into between DOD and Boeing (namely, procurement contracts, and assistance instruments) which are funded under the relevant RDT&E program elements.[1399] In other words, the funding and access to government facilities, equipment, and employees provided to Boeing under the relevant RDT&E program elements set forth in the European Union's panel request refer to the payments and access to facilities, equipment, and employees provided to Boeing through *procurement contracts* and *assistance instruments* entered into between DOD and Boeing and funded under the specifically identified RDT&E program

[1396] See para. 7.548 above.

[1397] European Union's request for the establishment of a panel, paras. 11-13. The panel request indicates that "Annex B of the 23 September 2012 notification is attached to this request, and the contracts listed therein are incorporated into this request". (Ibid. para. 13, p. 5 and annex B).

[1398] European Union's request for the establishment of a panel, paras. 11 and 12.

[1399] See para. 8.298 below. See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1115 (noting that it was not in dispute that DOD made payments to Boeing (and granted Boeing access to government facilities) to perform R&D pursuant to two different categories of R&D arrangements, namely, "procurement contracts" and "assistance instruments"), 7.1119 (noting that the scope of the European Union's DOD-related claim was limited to payments and access to facilities provided to Boeing, as distinguished from a broader challenged to the DOD RDT&E Program *per se*), and 7.1122 (noting that the European Communities had clarified that it did not challenge DOD allowing Boeing to "participate" in RDT&E program elements as a distinct measure).

elements.[1400] We briefly summarize the principal features of DOD procurement contracts and assistance instruments below.

8.2.3.2.2 DOD procurement contracts and assistance instruments

8.298. Boeing is commissioned to perform R&D work funded through the RDT&E program elements by means of particular legal instruments. DOD procurement activities, including for RDT&E, are generally governed by three sets of U.S. Federal Government regulations: the Federal Acquisition Regulation (FAR) which applies to the entire U.S. federal government, including DOD (unless stated otherwise); the Defense Federal Acquisition Supplement; and the unique FAR supplements for each of the Army, Air Force, Navy and Marine Corps, Defense Logistics Agency, and U.S. Special Operations Command.[1401] The original panel discussed the legal framework governing the various legal instruments through which DOD commissions R&D under the RDT&E program elements.[1402] We note several salient aspects of that discussion.

a. First, DOD has authority to fund certain kinds of R&D by means of specific legal instruments; namely "contracts", "cooperative agreements", "grants" and "technology investment agreements".[1403] The latter three (cooperative agreements, grants and technology investment agreements) are defined as "assistance and other nonprocurement instruments".[1404] In the original proceeding, these three legal instruments were referred to collectively as "assistance instruments". We use the same term to describe these three types of instruments in this proceeding. Assistance instruments are distinct from "contracts", which we refer to in this Report as "procurement contracts".

b. Second, U.S. procurement laws and regulations require that specific legal instruments be used in particular defined situations, and not otherwise. Accordingly, assistance instruments are legal instruments used to provide "assistance" which is defined in the DOD Grant and Agreement Regulations as the "transfer of a thing of value to a recipient to carry out a public purpose of support or stimulation authorized by a law of the United States".[1405] Under assistance instruments, the recipient is required to contribute its own funds to the R&D on a cost-shared basis.[1406] Moreover, at least as concerns cooperative agreements, the U.S. Government is required to have substantial involvement in the work performed, including collaboration, participation or intervention.[1407]

c. A procurement contract, by contrast, is a legal instrument which "reflects a relationship between the Federal Government and a State, a local government, or other recipient when the principal purpose of the instrument is to acquire property or services for the

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[1400] In Section 7.3.1, we explain the RDT&E Program, the particular RDT&E program elements and the relationship of the program elements challenged by the European Union to the DOD procurement contracts and assistance instruments. As explained in Section 7.3, the United States made a number of objections to the inclusion of various aspects of the DOD aeronautics R&D measures within the scope of this proceeding. Our rulings on those objections are summarized in Section 7.3.5.

[1401] M. Schwartz, Congressional Research Service, *Defense Acquisitions: How DOD Acquires Weapon Systems and Recent Efforts to Reform the Process*, (2 January 2013) (Schwartz Report), (Exhibit USA-115), p. 2.

[1402] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1140-7.1146.

[1403] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1140 and 7.1141 (referring to *United States Code*, Title 10, section 2358).

[1404] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1142 (referring to the DOD Grant and Agreement Regulations, *United States Code of Federal Regulations*, Title 32, sub-chapter c, part 21).

[1405] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1142 (referring to the *United States Code of Federal Regulations*, Title 32, section 21.615). Consistent with the character of "assistance instruments" as legal vehicles through which a thing of value is transferred to a recipient for the purpose of "support or stimulation", the payment of a "fee" or "profit" is prohibited under assistance instruments. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1152 (referring to sections 34.18 and 37.230)).

[1406] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1149. See also Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 605 (explaining that the assistance instruments reviewed by the Appellate Body committed Boeing to contribute financial resources, although in all cases, DOD funded at least 50% of the costs).

[1407] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 606 (referring to United States' response to Panel question No. 20(a), para. 45 in the original proceeding).

> direct benefit or use of the Federal Government".[1408] Consistent with the character of procurement contracts as the legal vehicles through which the U.S. Government acquires property or services for its direct benefit or use, the DOD Grant and Agreement Regulations mandate that a procurement contract, rather than an assistance instrument, be used in all cases where a fee or profit is to be paid or the instrument is to be used to carry out a programme where a fee or profit is necessary to achieving programme objectives.[1409]

8.299. Given that our evaluations of the subsidy issues presented by the European Union's DOD-related subsidy claims involve a consideration of the RDT&E program elements through which the procurement contracts and assistance instruments are funded, we set forth in the following sections relevant information concerning the nature of R&D commissioned under the various RDT&E program elements, and the processes through which that R&D is commissioned from contractors like Boeing.[1410]

8.2.3.2.3 R&D conducted under the RDT&E program elements

8.300. The R&D commissioned by DOD through the RDT&E Program falls into two general categories. The first consists of R&D commissioned under program elements that fund basic research, applied research and advanced technology development to meet a variety of current and future military needs. The second comprises R&D commissioned under program elements that fund development of technologies for specific new weapon systems or components.[1411]

8.301. Program elements in the former category are referred to as science and technology (S&T) program elements and correspond to the program elements identified by the European Union and its experts as "general aircraft" program elements. The *S&T/general aircraft* category consists of basic research to gain knowledge and understanding, applied research to identify technologies that the knowledge might enable, and advanced technology development to evaluate how the technologies work together and perform in a relevant environment.[1412] As the United States explains, the key link among these program elements is that DOD is "seeking knowledge or generalized technology options in support of current and future military missions – they do not have the objective of purchasing a particular {weapon} system".[1413] Fourteen of the 23 original RDT&E program elements challenged by the European Union are S&T/general aircraft program

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[1408] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1142 (referring to the *United States Code of Federal Regulations*, Title 32, section 21.670). See also United States' response to Panel question No. 69, para. 42; and *United States Code of Federal Regulations*, Title 48, section 2.101, (Exhibit USA-452).

[1409] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1152 (referring to section 22.205 of the DOD Grant and Agreement Regulations).

[1410] The relationship between the RDT&E program elements and the legal instruments through which funding under the program elements is provided to contractors such as Boeing is discussed further in paras. 8.335 and 8.336 below.

[1411] The parties recognize this basic distinction in categories of RDT&E program elements in their submissions, although they use different terminology for each category. (See United States' first written submission, para. 316; and CRA Report, (Exhibit EU-29), p. 5). See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1114 (where the European Communities applied the same distinction between "general aircraft" and "military aircraft" RDT&E program elements).

[1412] United States' first written submission, para. 316. Research conducted under S&T program elements corresponds generally to technology readiness levels 1 through 6 on NASA's scale. As explained by the original panel, NASA categorizes technologies according to a system reflecting the level of maturity (or technology readiness level), ranging from the highest risk, lowest maturity technology (TRL 1) to the lowest risk, highest maturity technology (TRL 9). NASA's research efforts focus on the development of higher risk technologies up to TRL 6, which is prototype demonstration. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1748).

[1413] United States' first written submission, para. 316. "Effort under S&T contracts typically revolves around researching a specific scientific or engineering question, developing technology on the basis of the resulting knowledge or understanding, or testing application of a particular principle in a particular environment. The deliverable will typically be a report or a briefing on the results of the work, or in some instances a test article or technology prototype for further evaluation by DOD. The objective is not to acquire a {weapon} system, but to study the problem presented so the knowledge gained in doing so can be used to solve broad problems or provide technology options for future systems acquisition." (United States' first written submission, para. 320).

elements.[1414] In addition, measures funded under a further three "additional" program elements that are within the scope of this proceeding are S&T/general aircraft program elements.[1415]

8.302. S&T/general aircraft research activities may be contrasted with R&D funded under program elements that develop specific new weapon systems or components.[1416] R&D directed specifically to the development of particular weapon systems or components is funded through systems acquisition program elements, which correspond to the "military aircraft" category of program elements identified by the European Union and its experts. Nine of the 23 original RDT&E program elements are *systems acquisition/military aircraft* program elements.[1417]

8.2.3.2.4 How R&D is commissioned under the RDT&E program elements

8.303. The processes by which DOD procures the RDT&E services (which are the necessary precursor to the larger-scale production and deployment of the weapons systems that DOD ultimately acquires) are complex. For present purposes, we provide an outline of what we regard as the basic but important aspects of that process in order to aid in our characterization of the DOD aeronautics R&D measures. The procurement process varies in general terms for S&T/ general aircraft program elements, as compared to systems acquisition/military aircraft program elements. We begin by outlining the basic features of the procurement process for S&T/general aircraft program elements.

8.304. S&T/general aircraft procurement is managed by the research organizations within DOD, such as the Air Force Research Laboratory (AFRL) for the U.S. Air Force and the Office of Naval Research for the U.S. Navy. The United States describes the procurement process using the example of Air Force S&T procurement managed by AFRL and states that a similar process occurs with respect to all DOD research organizations.[1418]

8.305. First, AFRL obtains information on "user needs" and "technology opportunities". User needs are identified based on sources such as "Defense Planning Guidance", issued by the U.S. Secretary of Defense, along with various other strategic documents identifying future missions and capabilities that war fighters will need in order to accomplish those missions. In addition, AFRL managers are expected to be aware of the various roles the Air Force performs in support of national defense. AFRL obtains information on technology opportunities by instructing its officials to remain up-to-date on the state of the art in all of the fields relevant to the Air Force, such as

[1414] (a) Defense Research Sciences (PE 0601102F); (b) Materials (PE 0602102F); (c) Aerospace Flight Dynamics/Aerospace Vehicle Technologies (PE 0602201F); (d) Aerospace Propulsion (PE 0602203F); (e) Aerospace Avionics/Aerospace Sensors (PE 0602204F); (f) Dual-Use Science & Technology (PE 0602805F); (g) Advanced Materials for Weapons Systems (PE 0603112F); (h) Flight Vehicle Technology (PE 0603025F); (i) Aerospace Structures/Aerospace Technology Dev/Demo (PE 0603211F); (j) Aerospace Propulsion and Power Technology (PE 0603216F); (k) Flight Vehicle Technology Integration (PE 0603245F); (l) RDT&E for Aging Aircraft (PE 0605011F); (m) Manufacturing Technology Industrial Preparedness – Air Force (PE 0603680F/0708011F); and (n) Manufacturing Technology Industrial Preparedness – Navy (PE 0708011N).

[1415] The "additional" RDT&E program elements that are S&T/general aircraft program elements and fund measures that are within the scope of this proceeding are: (a) Materials and Biological Technology (PE 0602715E); (b) Sustainment Science & Technology (PE 0603199F); and (c) Aviation Safety Technologies (PE 0606301D8Z).

[1416] "Weapon systems" refers to technically complex items such as aircraft, missiles, ships, and tanks that DOD purchases and includes the subsystems, logistical support and software needed to operate and support them.

[1417] The following original RDT&E program elements are systems acquisition/military aircraft program elements: (a) V-22/CV-22 (PE 0604262N/0401318F); (b) F/A-18 Squadrons (PE 0204136N); (c) Joint Strike Fighter (PE 0603800F/0603800N/0603800E/0604800F/0604800N); (d) C-17 (PE 0401130F/0604231F); (e) F-22 (PE 0604239F); (f) B-2 Advanced Technology Bomber (PE 0604240F); (g) Comanche (PE 0604223A); (h) A-6 Squadrons (PE 0204134N); and (i) AV-8B Aircraft (PE 0604214N). Although the European Union's panel request identified an additional four systems acquisition/military aircraft RDT&E program elements: AWACS (PE 0207417F); KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F); Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N); and Long Range Strike Bomber (PE 060415F). The Panel rules in Section 7.3.3 that the measures in question are outside the scope of the proceeding, or that the Panel is not satisfied of the existence of measures falling in the scope of the European Union's claims as identified by the European Union.

[1418] United States' first written submission, para. 319.

aerospace systems, air vehicles, space vehicles, directed energy devices, information systems, materials and manufacturing processes, munitions, and sensors.[1419]

8.306. Based on the inputs as to user needs and technology opportunities, AFRL issues a Program Objective Memorandum each year, which forms the basis for an annual Corporate Investment Strategy, setting the balance between basic research, applied research and advanced technology development, and levels of S&T/general aircraft funding for different technology areas. Within this framework, AFRL decides for each S&T objective whether to conduct the research in-house or to commission it from external sources such as industry or academia. In the latter case, the acquisition strategy depends on whether the objective of the research is within the scope of an existing effort, a follow-on effort, or requires a new effort. That decision guides the choice of an acquisition strategy.[1420]

8.307. ARFL may then commission research by issuing a Broad Agency Announcement which sets out a research objective and invites white papers on how to achieve that goal. It may also issue a an RFP. AFRL evaluates all proposals based on, at minimum, technological merit, contribution to agency mission, cost and realism, and selects the offer that represents the best combination of all of them. A similar process occurs for all DOD research organizations.[1421]

8.308. Systems acquisition/military aircraft program elements involve a different process for procuring the R&D required to develop a specific weapon system or component. From concept to deployment, a weapon system goes through a three-step process of: (a) identifying the required weapon system; (b) establishing a budget; and (c) acquiring the system.[1422] These three processes, which are intended to work in concert, are as follows[1423]:

a. *the Joint Capabilities Integration and Development System (JCIDS), for identifying requirements*. The process involves the identification, assessment and prioritization of capabilities the military requires to fulfil the military's mission (sometimes referred to as a requirements generation process). The JCIDS process analyses the military's capability needs and gaps, and recommends both materiel and non-materiel (e.g. a change in training or strategy) ways to address them[1424];

b. *the Planning, Programming, Budgeting, and Execution System (PBBES), for allocating resources and budgeting*. During the planning phase of PBBES, the needs of combatant commands are analysed and the findings are published in the Joint Programming Guidance document, which guides the DOD components' efforts to propose acquisition programmes. The programming and budgeting phases occur concurrently[1425]; and

[1419] United States' first written submission, para. 318.
[1420] United States' first written submission, para. 319.
[1421] The United States asserts that a similar arrangement is in place for all other DOD research organizations beyond the AFRL. (United States' first written submission, para. 319).
[1422] Schwartz Report, (Exhibit USA-115), pp. 2 and 3.
[1423] A 2012 Instruction of the Chairman of the Joint Chiefs of Staff explains that together, the three processes provide a means to determine, validate and prioritize capability requirements and associated capability gaps and risks, and then fund, develop and field non-materiel and materiel capability solutions for the warfighter in a timely manner. (Chairman of the Joint Chiefs of Staff Instruction, "Joint Capabilities Integration and Development System", 3170.01, 10 January 2012, (Exhibit USA-114), p. A-5).
[1424] The JCIDS is managed by the Joint Staff and military services. If a materiel solution such as a weapon system is considered, it must be justified on the basis of an initial capabilities document which must be approved by the Joint Requirements Oversight Council, the organization responsible for identifying and prioritizing warfighter requirements. (Schwartz Report, (Exhibit USA-115), pp. 3 and 4).
[1425] During these phases, Program Objective Memoranda (which outline the anticipated missions and objectives of the proposed weapon programmes and anticipated budget requirements) are submitted to propose these programmes. These memoranda are reviewed and, as deemed appropriate, integrated into an overall Defense programme. Budgets are reviewed and program budget decisions are issued. Simultaneously with the programme and budget reviews, programmes are evaluated and measured against established performance metrics, including the rates of funding obligations and expenditures. (Schwartz Report, (Exhibit USA-115), p. 5).

c. *the Defense Acquisition System (DAS), for developing and/or buying the item*. The Defense Acquisition System is the management process by which DOD develops and buys weapon and other systems.[1426]

8.309. There are five major phases of the DAS process: (a) materiel solution analysis; (b) technology development; (c) engineering and manufacturing development; (d) production and deployment; and (e) operations and support.[1427]

8.310. The Materiel Solution Analysis phase involves assessment of potential materiel solutions for a military need, conduct of an "Analysis of Alternatives" to explore alternative methods of meeting the identified requirement and creation of a "Technology Development Strategy". The Material Solution Analysis phase ends when the Analysis of Alternatives is completed, the lead component recommends materiel solutions identified by the initial capabilities document, and the programme meets criteria for the DAS milestones. "Milestones" are used by DAS as a way to oversee and manage acquisition programmes. There are three formal milestones for determining whether an acquisition is ready to move forward. At each milestone, a programme must meet specific statutory and regulatory requirements before it can proceed to the next phase of the acquisition process. The milestones are: A (technology development); B (engineering and manufacturing development); and C (production and deployment):

> *Milestone A Technology Development phase.* During this phase, technologies are developed, matured and tested. In order to be considered sufficiently mature for product development, technologies must be tested and demonstrated in either a "relevant" or "operational" environment. In this phase, a "Capability Development Document", which details the operational performance parameters for the anticipated system is developed. In addition, a "Reliability, Availability and Maintainability" strategy is developed.[1428] Competitive prototyping occurs in this phase. The Technology Development phase is complete when, among other things, an affordable programme (or increment) is identified and the technology and manufacturing processes have been demonstrated in a relevant environment.
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> *Milestone B Engineering and Manufacturing Development (EMD) phase:* To enter this phase, the acquisition program must have mature technology, approved requirements and full funding.[1429] In addition, the "Milestone Decision Authority" must have approved the acquisition strategy, the acquisition programme baseline (which details the performance, schedule and cost goals of the programme) and the type of contract that will be used to acquire the system.[1430] It is at this stage that DOD conducts a process to choose a contractor to integrate the technologies and capabilities into a single system in preparation for the manufacturing process.[1431] A Program Office will be created to oversee the execution of the contract and with responsibility to ensure that the contractor completes the work in the appropriate amount of time. EMD consists of two sub-stages: (a) system integration, and (b) system demonstration. During system integration, various sub-systems are integrated into one system and a development model or prototype is produced. During system demonstration, the

[1426] DAS is managed by the Under Secretary for Acquisition, Technology, and Logistics. Each acquisition programme for a weapon system is managed by an Acquisition Program Office, which is headed by a Program Manager, and who is usually supported by a staff that can include engineers, logisticians, contracting officer and specialists, budget and financial managers, and test and evaluation personnel. The line of reporting is such that Program Managers usually report to Program Executive Officers, who themselves report to a component acquisition executive, who generally reports to the Under Secretary of Defense for Acquisition, Technology, and Logistics (who also serves as the Defense Acquisition Executive). (Schwartz Report, (Exhibit USA-115), p. 6).

[1427] Chairman of the Joint Chiefs of Staff Instruction, "Joint Capabilities Integration and Development System", 3170.01, 10 January 2012, (Exhibit USA-114), p. A-6.

[1428] Schwartz Report, (Exhibit USA-115), p. 8. "Reliability, Availability and Maintainability" is a term of art encompassing, respectively, the probability of a system performing a specific function under stated conditions for a specified time, the time a system is operable and able to be committed to a mission, and the extent to which a system can be kept in or restored to a specific operating condition.

[1429] Schwartz Report, (Exhibit USA-115), p. 9.

[1430] Schwartz Report, (Exhibit USA-115), p. 9.

[1431] United States' first written submission, para. 324. The United States explains that some of the effort in the EMD phase will involve development activities, particularly with regard to integrating multiple technologies into a functioning whole and devising a production process that ensures the necessary quality at an affordable price.

model or prototype enters into developmental testing to demonstrate its military usefulness, and that the system can be supported through manufacturing processes. Much of the testing and evaluation of the system occurs in this sub-stage.[1432] The EMD phase is complete when, among other things, the system meets performance requirements as demonstrated by a model in an intended environment, and when manufacturing processes have been demonstrated.[1433]

Milestone C Production and Deployment phase: The Production and Deployment phase is the phase in which a weapon system is produced and deployed. To enter this phase, a program must have: (a) passed developmental testing and operational assessment, (b) demonstrated that it is interoperable with other relevant systems and can be supported operationally, (c) shown that it is affordable, (d) be fully funded, and (e) had the Milestone Decision Authority authorize the beginning of low-rate initial production.[1434] Once operational test and evaluation is complete, and adequate control over manufacturing processes has been demonstrated, a programme can, with the approval of the Milestone Decision Authority, go into full-rate production.[1435]

8.2.3.2.5 Legal restrictions on the dissemination of military technologies and data

8.311. Information generated by work performed under DOD procurement contracts and assistance instruments is subject to a number of legal restrictions such as export-controls and classification.

8.312. The export control regime comprises the International Traffic in Arms Regulations (ITAR), which govern military items and technologies, and the Export Administration Regulations (EAR) which govern other items and technologies. The ITAR implement the Arms Export Control Act (AECA).[1436]

8.313. Section 2778(a) of the AECA authorizes the U.S. President to control the import and export of defense articles and defense services and to provide foreign policy guidance to U.S. persons involved in the import and export of such articles and services.[1437] The AECA authorizes the President to designate items as defense articles and defense services and to promulgate regulations for the import and export of such articles and services. The items so designated constitute the United States Munitions List. The AECA defines "defense items" as "defense articles, defense services and related technical data". The lengthy definitions of "defense articles" and "defense services" set forth in the AECA in general terms cover weapons, munitions, or other implements of war and the services used in making sales of such articles.[1438]

8.314. In other words, information controlled under the ITAR generally covers technical data related to weapons, munitions, or other implements of war or the services used in making sales of such articles.[1439] The EAR govern other items and technologies.[1440] The rationale for EAR is

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[1432] Schwartz Report, (Exhibit USA-115), p. 10. To move from system integration to system demonstration, the "Milestone Decision Authority" must complete a post-preliminary design review assessment (reviewing the extent to which the system meets requirements) and a post-critical design review assessment (reviewing whether the overall design is mature).

[1433] Schwartz Report, (Exhibit USA-115), p. 10.

[1434] Low-rate initial production is intended to both prepare manufacturing and quality control processes for a higher rate of production and provide test models for operational test and evaluation. (Schwartz Report, (Exhibit USA-115), p. 10).

[1435] Schwartz Report, (Exhibit USA-115), p. 10.

[1436] *United States Code*, Title 22, sections 2751-2799aa-2.

[1437] The rationale for export controls under the ITAR is expressed in section 2778(a)(2) of the AECA:

> Decisions on issuing export licences under this section shall take into account whether the export of an article would contribute to an arms race, aid in the development of weapons of mass destructions {WMD}, support international terrorism, increase the possibility of outbreak or escalation of conflict, or prejudice the development of bilateral or multilateral arms control or non-proliferation agreements or other arrangements.

[1438] Arms Export Control Act, *United States Code*, Title 22, section 2794, (Exhibit USA-477), paras. 3 and 4.

[1439] United States' response to Panel question No. 86, para. 146.

[1440] Specifically, EAR, part 730.3 provides that the EAR control:

generally to serve the national security, foreign policy, non-proliferation of weapons of mass destruction, and other interests of the United States.[1441] In the original proceeding, the panel accepted that, although the scope and coverage of the ITAR was not entirely clear, the ITAR restrict Boeing's ability to use certain R&D performed for DOD towards its civil aircraft, that Boeing complies with the ITAR in general, and took steps to ensure that the 787 would be "ITAR-free".[1442]

8.315. Another less prevalent but more restrictive limitation is the classification of information under Executive Order 12958.[1443] Certain types of information, including information concerning military plans, weapon systems or operations, and scientific, technological or economic matters related to the national security, can be subjected to three levels of classification ("Top Secret", "Secret" and "Confidential") based on the harm that could reasonably be expected to result from unauthorized disclosure.[1444] Classified information (as well as information derived from classified information) cannot be shared with persons lacking the requisite security clearance and a need to use that information for government purposes. Executive Order 12958 also provides for special access programmes for specific classes of classified information that impose safeguarding and access requirements that exceed those normally required for information at the same classification level, in certain defined situations.[1445]

8.316. Pursuant to its authority to establish policies for R&D for all DOD program elements, DOD adopted Instruction 5230.24 to establish a standard framework and markings for managing, sharing, safeguarding, and disseminating technical documents.[1446] These different "distribution statements" indicate the classes of persons permitted to access the information contained in a document.[1447]

8.2.3.3 Whether there is a financial contribution

8.2.3.3.1 Introduction

8.317. In Section 7.3 of this Report, we make rulings regarding certain DOD aeronautics R&D measures that were identified by the European Union in its panel request, which the United States challenged as being outside the scope of this proceeding. In Section 7.8 above, we set forth the categories of DOD aeronautics R&D measures that are properly before the Panel based on the measures identified by the European Union in its panel request, and the outcomes of the Panel's rulings regarding the various scope-related challenges brought by the United States.[1448] These are

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> {A}ny item warranting control that is not exclusively controlled for export, reexport, or transfer (in-country) by another agency of the U.S. Government or otherwise excluded from being subject to the EAR pursuant to § 734.3(b) of the EAR.

Thus, items subject to the EAR include purely civilian items, items with both civil and military, terrorism or potential WMD-related applications, and items that are exclusively used for military applications but that do not warrant control under the ITAR.

[1441] Export Administration Regulations, part 730, (Exhibit USA-482), para. 730.6.

[1442] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1160.

[1443] Executive Order 12958, "Classified National Security information", 17 April 1995, (Exhibit USA-483).

[1444] Executive Order 12958, section 1.3(a) provides for a "Top Secret" classification for exceptionally grave damage to the national security that the original classification authority is able to identify or describe, a "Secret" classification for serious damage to the national security that the original classification authority is able to identify or describe, and a "Confidential" classification for damage to the national security that the original classification authority is able to identify or describe.

[1445] Executive Order 12958, "Classified National Security information", 17 April 1995, (Exhibit USA-483), sections 4.1(h) and 4.4. A special access programme applied to the Long-Range Strike Bomber program elements after 2011. (See Long Range Strike Bomber Budgets for FY 2007-FY 2013 (PE 0604015F), (Exhibit EU-78), frame 37/47, p. 1).

[1446] DOD Instruction, "Distribution Statements on Technical Documents", 5230.24, 23 August 2012, (Exhibit USA-485), p. 1.

[1447] "Distribution A" statements are for materials available to the general public, "Distribution B" statements for information restricted to U.S. Government agencies, "Distribution C" for information restricted to U.S. Government agencies and contractors, "Distribution D" for information restricted to DOD and DOD contractors, and "Distribution E" for information restricted to DOD. "Distribution F" is a residual category covering non-standard access restrictions, allowing the DOD entity that sponsored the work that generated the information to specify permitted uses of information. (DOD Instruction, "Distribution Statements on Technical Documents", 5230.24, 23 August 2012, (Exhibit USA-485), pp. 19 and 27).

[1448] See para. 7.548 above.

the "DOD aeronautics R&D measures" to which we refer in our subsidy analysis in this and subsequent sections of the Report.

8.318. We first consider whether: (a) the post-2006 assistance instruments; and (b) both pre-2007 and post-2006 procurement contracts, involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.[1449] We then consider whether the financial contributions so identified confer a benefit, within the meaning of Article 1.1(b) of the SCM Agreement.

8.2.3.3.2 Main arguments of the parties and third parties

8.319. The European Union submits that the parties appear to be in agreement that the *DOD assistance instruments* (both pre-2007 and post-2006) are financial contributions.[1450] Moreover, it considers that the characterization of transactions between DOD and Boeing under U.S. law as either assistance instruments or procurement contracts does not change the fact that all of the transactions are "akin to a species of joint venture". Both DOD assistance instruments and DOD procurement contracts involve more than simply payments in exchange for research.

8.320. The European Union argues that *DOD procurement contracts* funded through "general research" program elements and DOD procurement contracts funded through "military aircraft" program elements, like the DOD assistance instruments before the original panel, constitute transactions that are "akin to a species of joint venture", which are "analogous to a type of equity infusion", and therefore constitute financial contributions under Article 1.1(a)(1)(i) of the SCM Agreement. In particular, the European Union considers that payments under the DOD procurement contracts are a direct transfer of funds under Article 1.1(a)(1)(i), while the provision of access to facilities, equipment, and employees constitutes a government provision of goods and services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.

8.321. Like the DOD assistance instruments and NASA procurement contracts before the original panel, under the DOD procurement contracts: (a) both parties commit resources; (b) the parties share the fruits of their research; and (c) the subjects to be researched are often determined collaboratively. The European Union submits that the Appellate Body relied on these three primary characteristics to find that the measures were "akin to a species of joint venture". Moreover, in finding that the funds were "analogous" to an equity infusion under Article 1.1(a)(1)(i) of the SCM Agreement, the European Union submits that the Appellate Body underscored the following four characteristics: (a) funding is provided in expectation of some kind of return; (b) there is no certainty that research will be successful; (c) the funders' risks are limited to the amount of money they commit and the opportunity cost of other support they provide; and (d) the funders also contribute to the project by providing access to facilities, equipment, and employees, as some equity investors would also do.[1451] The European Union considers that all of the DOD procurement contracts feature all of these characteristics.

8.322. In respect of procurement contracts for systems acquisitions under the "military aircraft" program elements, the European Union rejects the United States' argument that the procurement contracts are in some cases a "purchase of goods". The European Union argues that there is a distinction between "RDT&E" appropriation and "procurement" appropriation, where the latter is the category resulting in the purchase of goods. The European Union clarifies that it does not challenge procurement appropriations. It also notes that the United States itself disagreed with the argument that RDT&E appropriations could be purchases of goods in the original proceedings.[1452]

8.323. The European Union submits that the United States has failed to demonstrate that, even if certain of the DOD procurement contracts were considered to be "purchases of services",

[1449] See para. 8.289 for an explanation of why we include within our evaluation of the *post-2006* DOD aeronautics R&D measures in this Section 8.2.3 an evaluation of whether the *pre-2007* procurement contracts that are within the scope of this proceeding involve specific subsidies to Boeing.

[1450] European Union's second written submission, para. 441 (referring to United States' first written submission, paras. 280 and 383).

[1451] European Union's first written submission, paras. 363-369; second written submission, paras. 442-445 and 452-455; and response to Panel question No. 17, paras. 115-119.

[1452] European Union's second written submission, paras. 459-462.

purchases of services are excluded from the scope of Article 1.1(a)(1). The United States has failed to demonstrate on the basis of a proper Vienna Convention analysis of Article 1.1(a)(1) that purchases of services are excluded. In light of the Appellate Body's decision to declare the panel's interpretation of this issue "moot and of no legal effect", the United States has no basis to argue that the Appellate Body would have agreed with the panel's reasoning as to why purchases of services are excluded from the scope of Article 1.1(a)(1).[1453]

8.324. The European Union also argues, in the alternative, that "the transfer to Boeing of patent and other intellectual property rights in the technologies and data developed under the NASA and DOD aeronautics R&D programmes *additionally* constitutes a provision of 'goods … other than general infrastructure' within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement". The European Union does not ask the Panel to consider this "alternative" conception of the financial contribution "unless it rejects the European Union's primary contentions, with respect to the characterisation of the challenged aeronautics R&D measures".[1454]

8.325. The United States does not dispute that, consistent with the findings of the Appellate Body with regard to the pre-2007 DOD assistance instruments, the *DOD assistance instruments* involve financial contributions in the form of a collaborative relationship "akin to a species of joint venture" having "characteristics analogous to equity infusions".[1455] It agrees that the DOD assistance instruments "operate basically the same today as they did in the period covered by the original panel and Appellate Body findings".[1456]

8.326. However, the United States also makes a number of factual assertions regarding the DOD assistance instruments. It asserts that, of the 50 assistance instruments between Boeing and DOD at issue in the original proceeding, DOD only made additional payments under six in the FY 2007-FY 2012 period, for a total of USD **[***]**.[1457] Moreover, these assistance instruments did not provide for use of DOD facilities. It states that DOD has only entered into three post-2006 assistance instruments with Boeing funded through the original 23 RDT&E program elements, and submits evidence that these provided a total of USD **[***]**.[1458] The United States also submits evidence that Boeing entered into three post-2006 assistance instruments which received funding through the "additional" RDT&E program elements for a total value of USD **[***]** in FY 2007-FY 2012.

8.327. As to *DOD procurement contracts*, the United States argues that the European Union has failed to establish that the payments and access to facilities that DOD provided to Boeing through any of the DOD procurement contracts identified in this proceeding constitute financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. The European Union's analysis addresses only whether the DOD procurement contracts can *possibly* be characterized as joint ventures, without also examining whether they would be *more appropriately* characterized as purchases of services. The United States considers that, following the guidance from the Appellate Body, a panel should take account of all of the relevant characteristics of the measure, and the features which are most central to the measure itself. As the Appellate Body acknowledged in *Canada – Renewable Energy / Canada – Feed-in Tariff Program*, one transaction may have multiple aspects and a panel's analysis must take those complexities into account.[1459] Thus, even if the European Union were correct that the DOD procurement contracts had characteristics that

[1453] European Union's second written submission, paras. 450, 451, and 463.

[1454] European Union's response to Panel question No. 32, para. 197. The European Union explains that this is an alternative manner of bringing the aeronautics R&D contracts within the scope of Article 1.1(a)(1) of the SCM Agreement.

[1455] United States' first written submission, paras. 279 and 280; second written submission, para. 257.

[1456] United States' second written submission, para. 257.

[1457] United States' first written submission, para. 278. Funds Obligated to Air Force Agreements with Boeing for FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI).

[1458] These assistance instruments are: N001-08-2-C009, FA8650-08-2-3834, and FA8650-11-2-2138. The United States says that the only access to U.S. Government facilities involved was the use of NASA Langley's 14x22 foot V/STOL wind tunnel in connection with FA8650-08-2-3834. (See United States' first written submission, para. 274).

[1459] United States' second written submission, para. 371 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 586).

were "akin to a joint venture", the Panel would still need to weigh the relative merits of each possible characterization, which the European Union's arguments fail to do.[1460]

8.328. The United States distinguishes between two types of DOD procurement contracts: those funded under S&T program elements (which the European Union refers to as "general research" program elements); and those funded under "systems acquisition" program elements (which the European Union refers to as "military aircraft" program elements). In both cases, the United States submits that the R&D has a military objective and that any potential civil uses are not in themselves an objective of the procurement contracts.[1461] The United States argues that the European Union fails to "thoroughly scrutinize the measure" in order to identify all relevant characteristics of the DOD procurement contracts so as to establish the existence of a financial contribution. Thus, it submits that the European Union has failed to demonstrate that any of the DOD procurement contracts have the same characteristics as the NASA procurement contracts and DOD assistance instruments addressed by the original panel.[1462]

8.329. Taking into account the operation of the DOD procurement contracts under law, their particular purpose, and the fact that DOD's primary contribution consists of payments (as provision of equipment and employees is either outside the Panel's terms of reference, or is otherwise "minimal or non-existent" and "rarely" made available), the United States argues that the DOD procurement contracts are not "akin to a species of joint venture", but rather, are either purchases of research services to assist DOD in developing technologies to be available for incorporation into products and processes to meet military needs, or in certain cases, purchases of goods. Specifically, the United States contends that the DOD procurement contracts funded under "general research" program elements and those "for improvements and upgrades under the military aircraft" program elements are purchases of services. Otherwise, DOD procurement contracts that are specifically for systems acquisitions under the "military aircraft" program elements are purchases of goods, under Article 1.1(a)(1)(iii) of the SCM Agreement.[1463]

8.330. Regarding the procurement contracts that it considers are properly characterized as purchases of services, the United States argues that the measures do not involve financial contributions under any of the subparagraphs of Article 1.1(a)(1) of the SCM Agreement. While the Appellate Body declared "moot" the original panel's interpretation of Article 1.1(a)(1)(i) of the SCM Agreement as excluding transactions properly characterized as "purchases of services", such a declaration means only that the panel should not have reached the issue.[1464] The original panel's reasoning is nevertheless still compelling and persuasive.[1465] Accordingly, the procurement contracts that are properly characterized as purchases of services do not fall within the definition of a financial contribution under Article 1.1(a)(1) of the SCM Agreement.[1466]

[1460] United States' second written submission, paras. 371 and 415.

[1461] United States' second written submission, para. 272. Moreover, the United States argues that procurement contracts or assistance instruments are the only mechanisms through which DOD is legally authorized to provide payments, facilities, or equipment to private entities, and therefore, contracts pursuant to these are the only evidence to determine whether DOD provides any payments or support to Boeing. (United States' second written submission, para. 274).

[1462] United States' first written submission, paras. 312, 317, 379-388, and 412-414. In addition, the United States argues that the European Union has failed to provide evidence on "military aircraft" program elements for the period after 2006, and that all evidence prior to that time "consists exclusively of cross-references to the 2006 CRA Report", which, according to the United States, "relies almost entirely on the subjective impressions of CRA staff at that time". For one, the United States submits that the failure to include evidence cited in the CRA reports as exhibits to its submission in this dispute violates the Panel's Working Procedures. In addition, it submits that reliance on the CRA Report, amounts to "an entirely *ex post* and speculative approach to the facts" that runs afoul of the "*ex ante*, fact-based examination" that is required by the SCM Agreement. Thus, the United States argues "{t}here is nothing identifying the relevant transactions, explaining their terms or putting them in the context of the time at which the parties entered into the agreement", thereby preventing the Panel from thoroughly scrutinizing the measures, and signifying that the European Union failed to make a *prima facie* case in respect of these transactions. (United States' first written submission, para. 399 and fns 664 and 665 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 706)). See also United States' response to Panel question No. 30, para. 133.

[1463] United States' first written submission, para. 309; second written submission, paras. 363, 388, and 390.

[1464] United States' second written submission, para. 383.

[1465] United States' second written submission, paras. 383, 401, and 425. See also ibid. paras. 226-231.

[1466] United States' first written submission, paras. 310, 389, and 419-424. Moreover, the United States considers the logic of the Appellate Body in *Canada – Renewable Energy / Canada – Feed-In Tariff Program*, in

8.331. Finally, the United States argues that the European Union has failed to establish that intellectual property rights accruing to Boeing pursuant to activities conducted under the aeronautics R&D measures are financial contributions. First, as a factual matter, the United States argues that there is no transfer of intellectual property rights to Boeing under U.S. law, as the patent is the property of the person who made the invention. Second, intellectual property is not a "good" and therefore cannot be the subject of a financial contribution in the form of a government provision of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement. Third, any intellectual property rights developed as a result of work under a DOD procurement contract are an effect of the contract, not an independent financial contribution.[1467]

8.332. Certain of the third parties (Brazil, Canada, Japan, and Korea) make arguments as to the appropriate scope of Article 1.1(a)(1) of the SCM Agreement in relation to the aeronautics R&D measures and transactions that may be characterized as involving purchases of services. These arguments are summarized in our assessment of whether the post-2006 NASA aeronautics R&D measures involve financial contributions, in Section 8.2.2.3.1 above.

8.2.3.3.3 Evaluation by the Panel

8.333. The task before us is to determine whether the DOD aeronautics R&D measures involve financial contributions to Boeing within the meaning of Article 1.1(a)(1) of the SCM Agreement. This requires us to determine whether the DOD aeronautics R&D measures can properly be characterized as involving any of the particular forms of financial contribution identified in subparagraphs (i) through (iii) of Article 1.1(a)(1).

8.334. In order to undertake that evaluation, we must first examine the measures to determine their relevant characteristics, and then consider whether, in light of a proper interpretation of Article 1.1(a)(1), these measures, properly characterized, fall within the scope of that provision.[1468]

8.335. There are aspects of the DOD aeronautics R&D measures that it is important to bear in mind as part of this characterization exercise. First, the measures involve payments and the access to DOD facilities (and for some of the measures, equipment, and employees). Second, those payments and access to DOD facilities, equipment, and employees occur through particular categories of legal instruments, namely "assistance instruments" and "procurement contracts". Finally, those legal instruments are funded through particular RDT&E program elements with particular programmatic objectives that are reflected also in the objectives of the legal instruments funded under them.

8.336. In examining the relevant characteristics of the DOD aeronautics R&D measures, it is important to consider both the program elements as well as the legal instruments which are the means through which the research goals of those program elements are implemented, and which set forth the terms and conditions on which particular aspects of the research work are to be conducted. The program elements and legal instruments are integrally connected with each other. While the characterization exercise ultimately focuses on the assistance instruments and procurement contracts as the direct legal means through which the payments and access to facilities (and in some cases equipment and employees) are provided, which is consistent with the approaches taken by the panel and the Appellate Body in the original proceeding, these legal instruments cannot be characterized in the abstract, but only in the context of the DOD RDT&E program elements through which they are funded.

8.337. In Sections 8.2.3.2.3 and 8.2.3.2.4 of this Report, we describe the nature of R&D conducted under the two general categories of RDT&E program elements, namely, S&T/general aircraft and systems acquisition/military aircraft program elements, and the differing procedures by which that R&D is commissioned. It is clear to us from that discussion, as well as from our

concluding that a purchase of goods under Article 1.1(a)(1)(iii) occurs "when a 'government' … obtains possession … over a good by making a payment of some kind (monetary or otherwise)" means that where a government obtains entitlement to the supply of a service by making a payment of some kind, there would likewise be a purchase of a service. (United States' first written submission, para. 390 (citing Appellate Body Reports, *Canada – Renewable Energy / Canada – Feed-In Tariff Program*, para. 5.123)).

[1467] United States' second written submission, paras. 443-447.

[1468] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 589.

review of the RDT&E program budgets, procurement contracts, assistance instruments, and other evidence concerning the RDT&E program elements, that the acquisition of a weapon system is a large and complex engineering development project that occurs over many years, covers a multitude of technical and bureaucratic processes and phases and involves a wide variety of participants.

8.338. Systems acquisition/military aircraft RDT&E procurement commences with the JCIDS process, which is a "requirements generation" process for analysing the military's capability needs and gaps.[1469] The materiel solutions are those that are determined to meet the military needs identified in the JCIDS process.[1470] The technologies that are developed, matured, and tested are those that will be integrated into the weapon system.[1471] The integration of the technologies into a single weapon system and the development of manufacturing processes that occurs during the EMD phase are all necessary prerequisites to production and deployment of the weapon system.[1472] In other words, these long-term, highly complex research and engineering projects are ultimately directed towards equipping the U.S. armed forces with highly specialized, technical items, for which DOD is the only buyer in the United States and the predominant buyer in the world.

8.339. Similarly, S&T/general aircraft RDT&E procurement, while not directed towards technology solutions for a specific weapon system, is directed towards the same objective of equipping the U.S. armed forces. With the exception of the explicitly "dual-use" RDT&E program elements, which we discuss in paragraph 8.346 below, there is no reference in the objectives of the S&T/general aircraft program elements to the goal of promoting the competitiveness of the U.S. aeronautics industry. This is an important and fundamental distinction between the NASA aeronautics R&D programmes and the DOD RDT&E program elements before us.

8.340. In addition, the DOD assistance instruments and procurement contracts should be understood in the broader context of the function and activities of DOD. The mission of the DOD is to provide the military forces needed to deter war and protect the security of the United States. Title 10 of the United States Code governs the organization, structure and operation of the U.S. Armed Forces. Several sections within the title charge the secretaries of the military departments (Army, Navy, and Air Force) with responsibility to "equip" the armed forces.[1473] DOD is the *exclusive* buyer of air weaponry and weapons technology in the United States.[1474] The products that DOD ultimately procures are highly sophisticated and technically complex weapon systems designed to meet identified military needs of the United States Government. They require extensive technological development over a period of many years as a necessary precursor to their production and deployment.

8.341. As we have explained in Section 8.2.3.2.3 of this Report, DOD assistance instruments and procurement contracts fund R&D work to produce military technologies for military purposes, with the exception of DOD assistance instruments funded under RDT&E program elements that have the explicit objective of developing dual-use technologies. This concept of "dual-use", which describes the explicit objectives of certain of the DOD RDT&E program elements, encompasses *both* the application *to* military needs of technology solutions developed by industry for civilian application (military in-bound) and the flow of technologies *from* military-developed contexts to commercially useful application in civilian contexts.[1475]

8.342. It is important to note that the European Union uses the term "dual-use" in a *different* sense from the sense outlined in the preceding paragraph.

[1469] Schwartz Report, (Exhibit USA-115), pp. 3 and 4.
[1470] Schwartz Report, (Exhibit USA-115), p. 7.
[1471] Schwartz Report, (Exhibit USA-115), p. 8.
[1472] Schwartz Report, (Exhibit USA-115), p. 10.
[1473] Schwartz Report, (Exhibit USA-115), p. 2.
[1474] The United States also has the largest defence budget of any country in the world. For example, the U.S. defence budget was estimated to be USD 600.4 billion in 2013, compared to the next largest defence budgets of USD 112.2 billion for China and USD 68.2 billion for Russia. (IISS, Military Balance 2014 Press Statement, 5 February 2014, (Exhibit USA-487), p. 2). The U.S. defense budget is divided into five broad budget categories: military personnel, operations & maintenance, procurement, RDT&E and military construction. (CRA Report, (Exhibit EU-29), p. 4).
[1475] Second Supplemental Razgaitis Declaration, (Exhibit EU-1398) (BCI), para. 14.

8.343. The European Union uses the term "dual-use" to refer to the military technologies developed by Boeing under the various RDT&E program elements that the *European Union considers*, based on the opinions of its experts, have *potential* applicability to Boeing LCA.[1476] As explained in paragraph 8.296 the European Union's DOD-related subsidy challenge concerns the funding and access to facilities, equipment, and employees provided to Boeing for "R&D applicable to the development, design and production of LCA".[1477] In paragraphs 7.86 to 7.88 of Section 7.3.1 of this Report, we explain the process by which the European Union identified the specific aspects of the various RDT&E program elements that *it considers could potentially* have application to Boeing's LCA development.[1478]

8.344. Accordingly, the European Union's conception of what it considers to be "dual-use" R&D should not be confused with the meaning of "dual-use" used to describe the explicit objectives of certain of the DOD RDT&E program elements.

8.345. In the original proceeding, the panel identified the Dual-Use Applications and Dual-Use Science and Technology (PE 0602805F) program element, and the Manufacturing Technology/Industrial Preparedness program elements for both the Air Force (PE 0603771F and 0708011F) and Navy (PE 0708011N), as having the explicit objective of developing "dual-use" R&D.[1479] As the budget estimates for the Air Force Dual Use Science & Technology (DUS&T) program element explain, the policy underlying the DUS&T program element was to enable the Air Force to leverage *industry investments* in advanced technologies that are mutually advantageous to both the Air Force and Industry (i.e. military in-bound dual-use).[1480] A DOD Directive explains that the fundamental policy underlying the various ManTech program elements is to address the situations in which the private sector cannot or will not make the necessary investments in manufacturing technologies that are necessary to produce DOD materiel on a timely basis.[1481]

8.346. The European Union's claims in this proceeding cover the DUS&T and Air Force and Navy ManTech program elements.[1482] In addition, the European Union's claims cover the Defense-Wide ManTech (PE 0603860Z) program element which funded two assistance instruments with Boeing in the 2007-2012 period.[1483] These RDT&E program elements have explicit dual-use objectives. Moreover, these program elements have funded only assistance instruments with Boeing, so are not relevant to our characterization of the DOD procurement contracts.[1484]

8.347. In identifying the relevant characteristics of the DOD assistance instruments and procurement contracts, below, we bear in mind the foregoing aspects which we consider relevant to their proper characterization.

[1476] See also Section 7.3.6 of this Report.

[1477] European Union's request for the establishment of a panel, paras. 11 and 12.

[1478] The European Union's expert, Mr Rumpf, describes his assignment as being to estimate the amounts of funding provided to Boeing by the RDT&E program elements that *could* benefit Boeing's commercial airplane division. (Rumpf Report, (Exhibit EU-23), para. 1.1). Rumpf indicates that his identification of the relevant S&T/general aircraft RDT&E program elements is based on his opinion as to the program elements and activities that he considers involve "dual-use", non-engine aircraft R&D. (See Rumpf Report, (Exhibit EU-23), para. 2.1). Similarly, Mr Rumpf's discussion of the systems acquisition/military aircraft RDT&E program elements often refers to his opinion regarding the "potential" applicability to Boeing LCA, or "potential" to benefit Boeing's LCA development. (See e.g. Rumpf Report, (Exhibit EU-23), para. 4.2 in relation to the C-17 and KC-46, and para. 4.3.4 in relation to the P-8A).

[1479] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1148. The original panel appears to have counted the Air Force and Navy ManTech program elements as a single program element.

[1480] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1147.

[1481] U.S. DOD Directive, "Manufacturing Technology (ManTech) Program", No. 4200.15 (19 September 2002), (Exhibit EU-295), p. 2.

[1482] We note that Boeing received no funding under the DUS&T or ManTech (Navy) program elements over the 2007-2012 period. (United States' first written submission, paras. 348 and 365).

[1483] The European Union also challenges particular projects under both the IP ManTech (PE 0708011S) program element and Technology Transfer (PE 0604317F) program element, but as explained in Section 7.3.3 of this Report, the Panel is not satisfied that any measures exist under these program elements and accordingly does not further consider these alleged measures in its analysis of whether the DOD aeronautics R&D measures involve specific subsidies that cause adverse effects.

[1484] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1149.

8.2.3.3.3.1 DOD assistance instruments

8.348. The assistance instruments before us encompass those that were funded under the 23 original RDT&E program elements since the original proceeding, and certain post-2006 assistance instruments funded under "additional" RDT&E program elements that we have found to be within the scope of this proceeding (collectively, post-2006 assistance instruments).[1485]

8.349. In the original proceeding, the Appellate Body found that the payments and access to DOD facilities provided to Boeing under the DOD assistance instruments constituted financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.[1486]

8.350. As we explain in Section 8.1.3 of this Report, the United States has modified the pre-2007 DOD assistance instruments, and certain post-2006 DOD assistance instruments, to grant a commercial use licence to DOD in respect of Boeing-owned patents.[1487] We note that the United States does not allege that it has modified the terms of any post-2006 assistance instruments in a way that results in those assistance instruments no longer constituting financial contributions.[1488]

8.351. Moreover, the United States concedes that those post-2006 assistance instruments that have not been modified by the DOD-Boeing Patent Licence Agreement operate in the same manner as the DOD assistance instruments that were before the panel and Appellate Body in the original proceeding, and that the Appellate Body's characterization of those assistance instruments would apply to those post-2006 assistance instruments.

8.352. We agree that there is nothing in the nature or terms of the modified post-2006 DOD assistance instruments, or the unmodified post-2006 DOD assistance instruments, that would warrant characterizing them, under Article 1.1(a)(1), any differently from the way that the Appellate Body had characterized the DOD assistance instruments before it in the original proceeding.

8.353. **We therefore find that the payments and access to DOD facilities, equipment, and employees, provided to Boeing through the post-2006 assistance instruments are financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. Specifically, the payments provided by DOD constitute financial contributions as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i), and the provision of access to facilities, equipment, and employees qualifies as a government provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement**.

8.2.3.3.3.2 DOD procurement contracts

8.354. We now consider the proper characterization of the DOD procurement contracts for purposes of Article 1.1(a)(1). The procurement contracts before us encompass those that were at issue in the original proceeding which, for reasons we explain in Section 7.3.2 of this Report, we have found to be within the scope of this compliance proceeding, as well as post-2006 procurement contracts funded under the 23 original RDT&E program elements and certain post-2006 procurement contracts funded under "additional" RDT&E program elements that we have found to be within the scope of this proceeding.

8.355. As there were no findings at the conclusion of the original proceedings as to whether the DOD procurement contracts constituted financial contributions, the United States has not modified the terms of the pre-2007 procurement contracts, whether through the DOD-Boeing Patent Licence Agreement or otherwise. There is accordingly no basis for distinguishing between pre-2007

[1485] Para. 7.548 above provides a summary of the DOD aeronautics R&D measures that we have found are within the scope of this proceeding, including the DOD assistance instruments funded under the "additional" RDT&E program elements.

[1486] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 625.

[1487] DOD-Boeing Patent Licence Agreement, (Exhibit EU-401) (BCI). See Section 8.1.3.2 for a summary of the relevant terms of the DOD-Boeing Patent Licence Agreement.

[1488] Rather, the modifications to those assistance instruments are said to go to the issue of whether the measures continue to confer a benefit.

and post-2006 procurement contracts in our analysis of whether these instruments involve financial contributions. Our analysis of the relevant characteristics of the DOD procurement contracts therefore covers both the pre-2007 procurement contracts that were before the original panel and the post-2006 procurement contracts challenged for the first time in this compliance proceeding.

8.356. The European Union argues that the DOD procurement contracts share all of the relevant characteristics of the pre-2007 NASA procurement contracts and DOD assistance instruments that led the Appellate Body to conclude that those instruments were collaborative research arrangements "akin to a species of joint venture", which involved financial contributions to Boeing. The United States responds that pointing to certain common characteristics is not sufficient, and that a proper consideration of all of the characteristics of the DOD procurement contracts in fact leads to the conclusion that some are properly characterized as purchases of services and outside the scope of Article 1.1(a)(1), or as purchases of goods under Article 1.1(a)(1)(iii).

8.357. In the original proceeding, the Appellate Body examined various aspects of the NASA procurement contracts and DOD assistance instruments, and ultimately concluded that both sets of measures were most properly characterized as collaborative research undertakings. For example, with respect to the NASA procurement contracts, the Appellate Body said:

> The transactions are collaborative arrangements that are composite in nature in that they involve various elements that are interlinked. The arrangements are akin to a species of joint venture.[1489]

8.358. Of particular significance, the Appellate Body referred to evidence suggesting that the relationship between NASA and Boeing in the particular context was one of "partnership".[1490] Similarly, when discussing the DOD assistance instruments, the Appellate Body referred to the composite nature of the transactions (as involving a combination of funding and access to facilities), the collaborative nature of the transactions (as involving a pooling of monetary and non-monetary resources on the input side and a sharing of the fruits of the research on the output side) and crucially, that these transactions were undertaken in pursuit of a *common goal for the benefit of both DOD and Boeing*.[1491]

8.359. We will examine the relevant characteristics of the DOD procurement contracts with a view to determining whether, like the NASA procurement contracts and DOD assistance instruments before the Appellate Body, the relationship between DOD and Boeing in the particular context is one of partnership, involving collaboration in pursuit of a common goal for the mutual benefit of DOD and Boeing.

8.360. To begin, we recall that under U.S. law, procurement contracts are used where the U.S. Government is acquiring property or services for its direct benefit or use.[1492] The original panel noted that all of the DOD procurement contracts that had been submitted in that proceeding provided for the payment of a fee.[1493] The vast majority of the DOD procurement contracts before the Panel follow the same structure: Boeing as the contractor receives reimbursement of its costs actually incurred (primarily in the form of salaries, materials and overheads) and in most cases, a fixed fee (as opposed to an "incentive" fee). According to the United States, the fee typically represents between **[[HSBI]]** of the reimbursable costs.[1494]

8.361. Although the European Union's claims cover the provision of DOD facilities, and in some cases, equipment and employees to Boeing under the procurement contracts, there is nothing before us to suggest that the provision of facilities, equipment, and employees is anything but marginal. We note that the European Union does not specifically identify any facilities, equipment or employees that DOD allegedly provides to Boeing under any of the DOD procurement contracts. Indeed, in summarizing the reasons why the DOD procurement contracts "satisfy the Appellate Body's test" for demonstrating that they are "akin to joint ventures that provide equity infusions",

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[1489] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 597.
[1490] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 598-600.
[1491] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 609.
[1492] See para. 8.298(c) above.
[1493] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1151.
[1494] United States' response to Panel question No. 67, para. 33.

the European Union notes only that DOD commits to provide financial resources, and argues that the absence of any provision of non-monetary resources and employees by DOD is not fatal to the characterization of the DOD procurement contracts as "akin to joint ventures that provide equity infusions".[1495]

8.362. In short, under the DOD procurement contracts, DOD provides payments to Boeing, in return for which Boeing performs specific R&D work as set forth in the various delivery orders and as described in accordance with statements of work or performance requirements. The payments for the most part represent Boeing's costs of performing the R&D work, plus a negotiated fee, representing Boeing's profit.

8.363. The European Union argues that Boeing additionally contributes financial resources such as non-reimbursed Independent Research and Development (IR&D) expenditures, which it uses to develop its background intellectual property to the "joint undertaking" between DOD and Boeing under the procurement contracts.[1496] These expenditures are internal costs that contractors like Boeing incur in order to maintain the technological competence and expertise that enable them to provide the R&D services for which they are contracted. These expenditures are not specified in the procurement contracts as contributions to be made by Boeing and we do not consider that Boeing's privately funded IR&D expenditures can be considered a contribution of "financial resources" to a "joint undertaking" with DOD. Nor do we consider that, in making use of its own intellectual property and know-how in order to carry out the R&D work for DOD, Boeing can be said to be "contributing" its intellectual property to a joint venture with DOD.

8.364. While there are payments provided by DOD in exchange for the performance of R&D by Boeing, it is important to understand that this exchange occurs in a particular commercial context. As is clear from our discussion in Section 8.2.3.2.4 of the way in which R&D is commissioned under the RDT&E program elements, the research topics are set by DOD and are based primarily on "user needs"; i.e. military needs identified by DOD on the basis of strategic defense imperatives. In the systems acquisition/military aircraft context, those user needs are further refined in that they are directed to the development of specific technologies necessary for the creation or upgrading of specific weapon systems. Given the scale and complexity of the R&D work, it is reasonable that contractors such as Boeing would have input into the process in order to ensure that they are able to perform the work, and that the R&D will meet DOD's requirements and presumably, ultimately lead to full-rate production of weapon systems. However, unlike the situation where NASA commissions aeronautics research, the R&D commissioned under DOD procurement contracts is solely directed to meeting DOD's military needs, independent of enhancing the competitive position of contractors such as Boeing. The interaction between DOD and Boeing therefore takes place in this different commercial context, and while it necessarily involves DOD and Boeing working together, the nature and purpose of this interaction is not the same as when two partners work together to set research topics based on their aligned interests in the outcomes.

8.365. The European Union also points to the allocation of intellectual property rights between DOD and Boeing under the DOD procurement contracts as a "sharing of the fruits of the research" that is indicative of a joint undertaking or collaborative arrangement. As the original panel explained, the allocation of patents is uniform across all U.S. Government R&D contracts and agreements, including NASA procurement contracts, DOD assistance instruments and DOD

[1495] European Union's second written submission, paras. 446-448. The United States responds that any such access to facilities, equipment, and employees is "not significant" with respect to S&T/general aircraft procurement contracts and is "rare" as regards systems acquisition/military aircraft procurement contracts. (United States' first written submission, paras. 388 and 418; second written submission, paras. 375 and 377). The United States asserts that in any case, the European Union has provided no evidence in support of its contention that DOD provides Boeing with access to DOD facilities or employees, and any provision of equipment is highly limited. (United States' first written submission, para. 385; second written submission, para. 367).

[1496] European Union's second written submission para. 446, as clarified in European Union's response to Panel question No. 16, paras. 112 and 113. Specifically, the European Union clarifies that it does not argue that Boeing's non-reimbursed, internal IR&D expenditures are a contribution of financial resources under the DOD procurement contracts in the same way as Boeing shares costs under DOD assistance instruments. Rather, with respect to the former, there is a time lag between the time that Boeing funds its own IR&D and then uses the background intellectual property created from that IR&D as its "contribution" to the "joint undertaking" pursuant to a particular procurement contract.

procurement contracts.[1497] For present purposes, we note that where DOD employees and Boeing employees work together under a DOD procurement contract on a research effort that results in an invention, the allocation of ownership of patent rights is as follows:

a. Where a DOD employee makes an invention in the course of work, the U.S. Government will have sole ownership of the invention, and thus the right to obtain a patent. This is because the U.S. Government employee who made the invention would be recognized as the inventor, and his or her interest in the patent that would issue in that employee's name would pass to the U.S. Government.[1498]

b. Where a Boeing employee makes an invention in the course of work, Boeing has title to the invention and thus the right to obtain a patent.[1499] This results from the application of the Bayh-Dole Act and associated legislative instruments and implementing regulations. The U.S. Government receives a government use license in Boeing inventions made in the performance of a DOD procurement contract.[1500]

c. Where DOD and Boeing employees jointly make an invention in the course of work, the resulting patent would issue jointly in the names of the DOD and Boeing employees, and by operation of the laws, regulations and contract clauses discussed in (a) and (b) above, DOD and Boeing would each own an undivided share in rights under the patent.[1501]

8.366. In respect of rights to technical data, such as research results developed or delivered under DOD procurement contracts, any data delivered under an R&D contract funded solely by the U.S. Government (such as the DOD procurement contracts) is "unlimited rights data", meaning that the U.S. Government obtains unlimited rights to use the technical data as it sees fit, both inside and outside the government.[1502]

8.367. Therefore, under a DOD procurement contract, there is a "sharing" of intellectual property rights resulting from Boeing's performance of the R&D work, which occurs by operation of U.S. law in relation to all U.S. Government R&D contracts, regardless of the agency or the contractor. However, as we explain in Section 8.2.3.4, contextual factors suggest that the "balance" of that sharing is substantially more in DOD's favour and less in Boeing's favour than under the DOD assistance instruments, or NASA procurement contracts. Most significantly, DOD is commissioning R&D services to support the development of military systems for DOD's own distinct purposes. Unlike the DOD assistance instruments, or NASA procurement contracts, DOD's objectives do not include, or align with, advancing Boeing's development of technologies applicable to LCA. With

[1497] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1149.

[1498] This is by virtue of a U.S. regulation which provides for the U.S. Government to obtain the title to any invention made by a U.S. Government employee. The *United States Code of Federal Regulations*, Title 37, section 501.6 provides that, with certain limited exceptions, the U.S. Government obtains title to any invention made by a U.S. Government employee during working hours, or with a contribution of government facilities, equipment, materials, funds or information, or of time or services of other government employees on official duty, or which bears a direct relation to or is made in consequence of the official duties of the inventor.

[1499] As Razgaitis explains, in the United States, patent ownership generally vests with the party whose employees are its inventors. (Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 24).

[1500] *United States Code of Federal Regulations*, Title 48, section 52.227-12, (Exhibit USA-368). This government use license gives the U.S. Government the rights to: (a) use the invention without paying additional fees or royalties to Boeing in all future contracts between Boeing and any agency of the U.S. Government anywhere in the world; and (b) authorize other contractors to use the invention without any additional fees or royalties in all future contracts between that contractor and any agency of the U.S. Government anywhere in the world (thereby providing such other contractors with a license defence against an infringement proceeding covering the contractor's use of the patented invention in the performance of a contract for the U.S. Government).

[1501] *United States Code of Federal Regulations*, Chapter 37, section 501.6, (Exhibit USA-310); Patent Rights in Inventions Made with Federal Assistance, *United States Code*, chapter 35, sections 200-212, (Exhibit EU-220), sections 201 (c), (e) and (i), and 202(a); Memorandum on Government Patent Policy, (Exhibit EU-1062); Executive Order 12591, "Facilitating access to science and technology", 10 April 1987, (Exhibit EU-238); and *United States Code of Federal Regulations*, Title 48, sections 27.300-306, (Exhibit EU-221), sections 27.303(a) and (b).

[1502] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1300. As the original panel explained, data rights apply to so-called "technical data", which means "recorded information (regardless of the form or method of the recording) of a scientific or technical nature (including computer databases and computer software documentation)". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1298).

respect to Boeing-owned patents that may arise from performing the R&D work for DOD, DOD obtains a government use licence that enables it to fully exploit Boeing's patents for DOD's purposes, as we explain more fully in paragraphs 8.422 and 8.423. DOD also obtains unrestricted rights to the data. Boeing's ownership of the patents to inventions made by its employees in the course of work under a DOD procurement contract does give Boeing the legal right to exploit the military technologies in question for commercial purposes. However, as we explain in paragraphs 8.422 to 8.425 the particular commercial context means that this legal right is in practice restricted.

8.368. This different "balance" of allocation of intellectual property rights that results from the performance of work under a DOD procurement contract also affects our assessment of whether DOD and Boeing can be said to share in the "risks and rewards" of the commissioned R&D. While the outcome of R&D performed under many of the DOD procurement contracts (especially under S&T/general aircraft program elements) is uncertain, the risks and rewards are borne principally by DOD. Under the vast majority of the DOD procurement contracts, Boeing is paid its costs for performing the R&D and earns a negotiated fee or profit, which is a smaller proportion of the overall cost.[1503] Boeing does not appear to risk very much at all, as it is paid its costs and will make a profit regardless of whether the research yields the desired outcomes for DOD. Aside from the fee or profit that Boeing earns on completion of the contracted research tasks, the rewards of the successful outcome of the research are primarily and in practical terms captured by the government use licence, owing to the fact that the technologies in question are military and DOD is Boeing's only customer for such technologies. Although some of the military technologies may also have potential civil applications, Boeing's practical ability to exploit those technologies for civil applications is limited by legal restrictions on the use of information and technologies developed under the DOD procurement contracts outside the military context.[1504]

8.369. We have considered the relevant characteristics of the DOD procurement contracts in their particular context, including: the objectives of the RDT&E program elements through which the procurement contracts are funded, which are purely military in nature and independent of objectives such as promoting the competitiveness of the U.S. aeronautics industry (an important difference we see between DOD and NASA in commissioning aeronautics R&D); the nature of the research conducted under the RDT&E program elements; the ways in which R&D is commissioned under the RDT&E program elements; as well as the nature of the respective performance obligations of DOD and Boeing under the procurement contracts.[1505] We have considerable difficulty in concluding that the DOD procurement contracts are functionally like or equivalent to joint venture arrangements or collaborative undertakings. We do not see enough in the relationship between DOD and Boeing under the DOD procurement contracts that points to it being one of "partnership", "collaboration" or "joint-venture", in which both parties act in pursuit of a common goal for their mutual benefit.

8.370. As we have explained, we do not regard the allocation of intellectual property rights between DOD and Boeing under DOD procurement contracts as transforming the relationship between DOD and Boeing under DOD procurement contracts from purchaser and seller to joint venture partners.[1506] We regard the risks and rewards of the R&D as being principally for DOD.

8.371. In sum, we are not persuaded, when we consider all of the relevant characteristics of the DOD procurement contracts in their totality and proper context, that DOD and Boeing can be

[1503] Mr Razgaitis explains that the essential feature of "cost plus a fee" or "profit" R&D contracts from the perspective of the commissioned party is that it does not expect to lose money on the R&D. If the challenges of performing the R&D are greater than proposed, the commissioned party will either receive additional funding (at the commissioning party's option) or will reduce the scope of work. All that is at risk for the commissioned party is possibly the relatively small fee. (Second Supplemental Razgaitis Declaration, (Exhibit EU-1398), para. 40). We do not consider that the same conclusion applies with respect to the NASA procurement contracts that involve payment of a fee to Boeing because, as we explain in para. 8.151, the fact that one of the objectives of the NASA commissioned R&D is to promote the competitiveness of the U.S. aeronautics industry means that Boeing indirectly shares the risks of the R&D being unsuccessful.

[1504] The principal legal restrictions on the dissemination of military technologies and data are described in Section 8.2.3.2.5 above.

[1505] These characteristics are discussed in detail in Sections 8.2.3.2.2 through 8.2.3.2.4 above.

[1506] If it were, it would effectively mean that every time the U.S. Government commissions R&D under a procurement contract, regardless of the identity of the agency or commissioned party, the objectives of the research, or the other terms of the contract, the parties would be considered to be in a form of joint venture or collaborative undertaking. We do not think this would be a reasonable outcome.

considered to be parties with broadly aligned interests engaging in a collaborative enterprise in which they both have a significant stake in the risks and returns.[1507] Rather, their relationship is principally one in which DOD acquires R&D services from Boeing.

8.372. We acknowledge that there are special features of the DOD procurement contracts that in some respects obscure what we see as this basic relationship between DOD and Boeing of buyer and seller. DOD procurement contracts are the legal instruments through which DOD commissions contractors such as Boeing to undertake complex processes of developing and maturing technologies for application to particular military systems in various stages and over long periods of time.[1508] However, the interaction that occurs between DOD and Boeing in connection with this engagement is qualitatively different from the collaboration that occurs between partners in a collaborative venture, in which both are mutually invested in the outcome. The interaction between DOD and Boeing under the DOD procurement contracts is fundamentally directed to DOD acquiring what *DOD* needs (independently of Boeing's commercial interests), and to Boeing performing the work that meets DOD's needs.

8.373. The United States argues that certain of the procurement contracts that are for systems acquisition (i.e. "military aircraft" program elements) are most appropriately characterized as involving purchases of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement. According to the United States, where the work performed by Boeing under a procurement contract involves modifying an existing aircraft, the proper characterization of that procurement contract is as a purchase of services because Boeing would not be producing a new good. However, if the work requires Boeing to either bring a product into service (e.g. bringing a systems acquisition project to the point where full rate production could begin) or to produce a new component for integration into the aircraft, the transaction should be treated as a purchase of goods.[1509]

8.374. We note, first, that whether we characterize the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the procurement contracts as purchases of services, or as purchases of goods, this characterization does not affect the outcome of our analysis of whether the measures are subsidies.[1510] The key point emerging from our analysis above is that the DOD procurement contracts involve *purchases* by DOD as buyer, from Boeing as seller, and that, as such, there is no basis to characterize these contracts in the same way that the Appellate Body characterized the NASA procurement contracts and DOD assistance instruments in the original proceeding. This conclusion does not depend upon whether the objects of the purchases are services or goods. Moreover, as discussed below, in view of our characterization of the transactions as purchases of services, our determination of whether these measures confer a benefit, assuming that they are financial contributions, involves an examination of whether DOD paid more than adequate remuneration for these services. If we treated the transactions as purchases of goods, we obviously would apply the same approach, consistent with Article 14(d) of the SCM Agreement, and arrive at the same conclusion.

8.375. In any event, we consider that while the work performed by Boeing under DOD procurement contracts funded under the military aircraft RDT&E program elements is directly related to the development of particular weapon systems, and may result in a new product or a new version of an existing system, this does not alter the fact that the immediate objects of these contracts are activities, including research, testing and evaluation, which are best characterized as

[1507] The DOD procurement contracts differ from the NASA procurement contracts in this fundamental respect.

[1508] The processes through which DOD commissions R&D under the RDT&E program elements are described in general terms in Section 8.2.3.2.4 above.

[1509] United States' first written submission, paras. 309 and 419-423; second written submission, paras. 390, 400, 405, and 413. Thus, the United States argues that the pre-2007 funding for the V-22/CV-22 and Joint Strike Fighter projects is most appropriately characterized as a purchase of goods, as was certain of the F/A-18 project funding that involved bringing the new version into service, and the C-17 product development funding for bringing the C-17 into service. This work can be contrasted with procurement contracts involving upgrades to existing systems, which the United States considers are better characterized as purchases of services. (United States' second written submission, para. 388).

[1510] We also recall that, in respect of a number of the program elements that the United States considers to involve purchases of goods, we have found in Section 7.3 that there is either no measure in existence involving the particular program element, or the measures involving such program elements are not within the scope of this proceeding.

services.[1511] As we have previously explained, the weapon systems that DOD ultimately buys are complex. Their acquisition necessarily entails an extensive period of technological development, which is the work that Boeing performs under the DOD procurement contracts at issue in this proceeding. Boeing is paid for performing the R&D work, which may involve integrating various sub-systems and producing models or prototypes for developmental testing and evaluation. However, this aspect of producing a product for the purpose of development and testing is part of the overall R&D activity, and is distinct from the full-rate production of a weapon system, which is covered by distinct contractual arrangements between DOD and its contractors.[1512]

8.376. We therefore find ourselves unable to characterize the DOD procurement contracts in a similar manner to the way in which the Appellate Body: (a) characterized the NASA procurement contracts and DOD assistance instruments; and (b) through an interpretive process that involved analogizing them to equity infusions, concluded that the payments that were part of the joint venture arrangement constituted a direct transfer of funds within the meaning of Article 1.1(a)(1)(i), and that the provision of facilities, equipment, and employees constituted a provision of goods or services within the meaning of Article 1.1(a)(1)(iii).[1513] **Given the nature of the research that DOD commissions Boeing to undertake under the DOD procurement contracts, DOD's objectives in commissioning that research and the consequent nature of the relationship between DOD and Boeing in performing their respective obligations under the DOD procurement contracts, we regard payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts, as most appropriately characterized as purchases of services**.

8.377. The issue that next arises is whether these transactions, properly characterized as purchases of R&D services, fall within the scope of transactions that are financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement.

8.378. We have concluded that it is not necessary for us to definitively address this interpretive issue because, even if we were to consider that the DOD procurement contracts, properly characterized as purchases of R&D services, constitute financial contributions within the meaning of Article 1.1(a)(1), we would ultimately conclude, for the reasons we explain in Section 8.2.3.4 of this Report, that the European Union has failed to establish that the DOD procurement contracts confer a benefit within the meaning of Article 1.1(b).

8.379. Since we do not make a finding on the primary argument of the European Union that the payments and provision of access to facilities, equipment, and employees pursuant to DOD procurement contracts funded under the challenged RDT&E program elements constitute financial contributions, within the meaning of Article 1.1(a)(1) of the SCM Agreement, we now proceed to consider an argument made by the European Union in the alternative with respect to how the DOD aeronautics R&D measures constitute financial contributions.

8.380. According to this alternative argument, "the transfer to Boeing of patent and other intellectual property rights in the technologies and data developed under the RDT&E Program additionally constitutes a provision of 'goods … other than general infrastructure' within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement".[1514] The European Union argues, first, that

[1511] See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1162.

[1512] The European Union also notes that DOD itself distinguishes RDT&E appropriations, which fund the development, test and evaluation of equipment, materiel or computer application software from "procurement" appropriations, which fund the purchases of major end items and defense systems. The European Union submits therefore that the "procurement" appropriations category of DOD's budget funds purchases of goods, not the RDT&E appropriations category. (European Union's second written submission, para. 462; and Defense Acquisition University, "Lesson 10: Financial Management: Program/Budget Execution", available at: <https://learn.dau.mil/CourseWare/1_9/rem/summary_L10.html>, accessed 1 September 2016, (Exhibit EU-1101), pp. 2/9 and 3/9).

[1513] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 624.

[1514] European Union's first written submission, para. 370; second written submission, para. 464. The European Union has explained that while it agrees that "the intellectual property rights are an effect of the contract" it considers that "in the alternative, it is possible to conceptualise one of the financial contributions arising from that same contract as a provision of goods". The European Union indicates in this connection that, unlike the original proceeding, in this compliance proceeding it "is not challenging the provision of patent rights as a separate subsidy distinct from the DOD RDT&E contracts from which they arise, as it did before the original panel". (European Union's second written submission, para. 465).

patents, rights to trade secrets, and rights to data are goods on the basis that the term "good" is generally defined as "property or possessions" and that therefore "the transfer of a patent, as well as of rights to trade secrets and undisclosed data, constitutes the transfer of property – i.e. the transfer or provision of a good".[1515] Second, the European Union submits that "the United States 'provides' Boeing with these patents and other rights in association with the RDT&E funding agreements" because U.S. law and regulations generally provide contractors with the right to receive title to inventions that arise from a funding agreement with the U.S. Government.[1516]

8.381. The European Union's alternative argument as to how the DOD procurement contracts give rise to financial contributions, within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement raises two questions: (a) whether patents and other intellectual property rights can be treated as "goods" within the specific sense of the term as used in Article 1.1(a)(1)(iii) of the SCM Agreement; and, if so, (b) how under the transactions at issue the government could be construed as "providing" such goods to Boeing.

8.382. While there is wide and uncertain use of the term "goods" in general parlance, the term is typically applied to tangible products, as distinguished from intangible services (a distinction made in the context of trade law and trade policy).[1517] Specifically with respect to Article 1.1(a)(1)(iii), the Appellate Body has observed that the ordinary meaning of the term "goods" "includes items that are tangible and capable of being possessed" and that "'goods' are tangible items".[1518] The European Union argues that intellectual property rights are "goods" within the meaning of Article 1.1(a)(1)(iii) because: (a) the term "good" is defined as "property or possessions"; and (b) patents, rights to trade secrets and rights to data are considered intellectual *property*, as evidenced by the fact that U.S. law explicitly states that "patents shall have the attributes of personal property".[1519] However, in making these arguments the European Union fails to take into account the fact that the Appellate Body has only defined "goods" as used in Article 1.1(a)(1)(iii) in terms of tangible items. Given the context of this term, and the use of the term "services" in the same sentence, the dictionary definition, as well as the Appellate Body's earlier finding, we see no basis to extend the sense of goods in this context to encompass all possible forms of property.

8.383. We note, in this connection, that intellectual property rights are generally understood to be economic assets and, in the form of patents, are tradeable categories of property; they are usually treated by national jurisdictions and international organizations as immaterial property[1520], or intangible assets.[1521]

8.384. Patent law distinguishes a product or process from the patent right which can prevent third parties from making, using, offering for sale, selling, or importing the product that is the subject matter of a patent, or in case of patent-protected process, from using the process, and from using, offering for sale, selling, or importing a product obtained directly by this process.[1522] Similarly, the

[1515] European Union's first written submission, para. 370.

[1516] European Union's first written submission, para. 370.

[1517] This practice conforms with the Oxford English Dictionary's most pertinent definition of "goods" as "{t}hings that are produced for sale; commodities and manufactured items to be bought and sold; merchandise, wares … Now also (Econ.): economic assets which have a tangible, physical form (contrasted with services)." (Oxford English Dictionary online, definition of "good", available at: <http://www.oed.com/view/Entry/79925>, accessed 1 September 2016).

[1518] Appellate Body Report, *US – Softwood Lumber IV*, para. 59. ("{i}n particular, we agree with the Panel that the ordinary meaning of the term 'goods', as used in Article 1.1(a)(1)(iii), includes items that are tangible and capable of being possessed.") See also ibid. paras. 58-60 and 64. See also Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 619 and fn 1295 ("'{g}oods' are tangible items. They are often contrasted against services, which are intangible").

[1519] European Union's first written submission, para. 370. We recall that, as in other contexts, the Appellate Body emphasized that "municipal law classifications are not determinative" in the context of characterizing "goods" for purposes of Article 1.1(a)(1) of the SCM Agreement. (See Appellate Body Report, *US – Softwood Lumber IV*, para. 56).

[1520] See e.g. the reference to "*Immaterialgüterrechte*" for industrial property in Germany.

[1521] WIPO defines intellectual property rights as intangible assets. (See e.g. The Value of Intellectual Property Assets at <http://www.wipo.int/sme/en/ip_business/ip_asset/value_ip_assets.htm>, accessed 1 September 2016). The Oxford Dictionary lists "intangible" as a synonym of "immaterial": "{n}ot tangible; incapable of being touched; not cognizable by the sense of touch; impalpable." (Oxford English Dictionary online, definition of "intangible", available at: <http://www.oed.com/view/Entry/97332?redirectedFrom=intangible#eid>, accessed 1 September 2016).

[1522] See TRIPS Agreement, Article 28.1.

data rights that have been discussed in this dispute refer to the right to prevent a party from using data or disseminating data to third parties for their use for a period of time.

8.385. As property rights and assets, intellectual property rights are thus usually distinguished from goods as such: This is apparent in the TRIPS Agreement itself, which distinguishes between goods, and intellectual property rights that are embedded in such goods. Consequently, the TRIPS Agreement refers, for example, to "goods or services protected by the trademark" and defines the function of trademarks as distinguishing goods or services of one enterprise from another, setting such an intellectual property right in a different category from goods as such. Similarly, a trademark is "applied" to a good and trademarks are registered "in respect of" goods.[1523] The TRIPS Agreement's requirements relating to the enforcement of intellectual property rights, including border measures, systematically distinguish intellectual property rights from goods that involve such rights, involve the infringement of intellectual property rights, or that are protected by them.[1524]

8.386. In sum, in light of the foregoing considerations, we find unpersuasive the European Union's argument that intellectual property rights are goods within the meaning of Article 1.1(a)(1)(iii).

8.387. On the basis of this conclusion, we do not, strictly speaking, need to address the second, consequent question, that of whether "the United States 'provides' Boeing with these patents and other rights in association with the RDT&E funding agreements".[1525] For the sake of completeness, however, we turn to that question, assuming *arguendo* that intellectual property rights may be considered as goods under Article 1.1(a)(1)(iii).

8.388. The European Union argues that the United States "provides" Boeing with patents and other rights on the grounds that "US law and regulations generally provide contractors with the right to receive title to inventions that arise from a funding agreement with the US government".[1526] Hence, this use by the European Union of the term "provides" does not refer to the transfer or assignment to Boeing of existing intellectual property rights, and particularly of patents, actually held by the U.S. Government. The intellectual property rights that may be concerned are "foreground" intellectual property, based on inventions developed in the course of the contracted research. By definition, no such intellectual property rights could have existed at the time of the contract; they could only come into existence subsequently. None of the intellectual property rights resulting from DOD procurement contracts were at any stage owned by the U.S. Government, and could therefore not have been transferred or assigned by the Government.

8.389. Accordingly, the use of the term "provide" in this context would need to encompass the enactment of legislation that allocated to Boeing the entitlement "to receive title to" inventions that result from research undertaken by Boeing pursuant to a U.S. Government R&D contract. This is the view that the European Union appears to take; i.e. that where a law lays down the conditions under which rights to title to inventions can be obtained, the government thereby "provides" these rights within the meaning of Article 1.1(a)(1)(iii). The Appellate Body has observed that the term "provide" has been defined as "supply or furnish for use; make available" and "to put at the disposal of".[1527] The Appellate Body has also explained that there must be a "reasonably proximate relationship" between the governmental action of providing the good or service and the use or enjoyment of the good or service by the recipient.[1528] It stated that "a government must have some control over the *availability* of a specific thing being 'made available'".[1529] The European Union does not explain how its interpretation of "provide" can encompass situations where a law merely defines the conditions under which a "right to take title" can be acquired in the future, in the event that a patentable invention, yet to exist, is subsequently developed, and in particular does not explain how its reading is consistent with these Appellate Body pronouncements.

[1523] See TRIPS Agreement, Articles 15, 16, 19, and 20.
[1524] See TRIPS Agreement, Articles 53, 51, and 44.
[1525] European Union's first written submission, para. 370.
[1526] European Union's first written submission, para. 370.
[1527] Appellate Body Report, *US – Softwood Lumber IV*, para. 69.
[1528] Appellate Body Report, *US – Softwood Lumber IV*, para. 71.
[1529] Appellate Body Report, *US – Softwood Lumber IV*, para. 71. (emphasis original)

8.390. **For the foregoing reasons, we reject the European Union's alternative argument that the alleged "transfer to Boeing of patent and other intellectual property rights in the technologies and data developed under the challenged DOD RDT&E programmes" constitutes a financial contribution in the form of government provision of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement**.

8.391. In light of our findings in this Section, we address in the next section: (a) whether the payments and access to DOD facilities, equipment, and employees provided through DOD assistance instruments, which we find to be financial contributions within the meaning of Article 1.1(a)(1), confer a benefit within the meaning of Article 1.1(b); and (b) whether, assuming *arguendo* that the payments and provision of access to DOD facilities, and where applicable, DOD equipment and employees, provided through DOD procurement contracts, properly characterized as purchases of R&D services, are financial contributions within the meaning of Article 1.1(a)(1), these measures confer a benefit within the meaning of Article 1.1(b).

8.2.3.4 Whether there is a benefit

8.2.3.4.1 Main arguments of the parties and third parties

8.392. The European Union argues that the financial contributions provided through the post-2006 DOD assistance instruments, the terms of which were modified by the DOD-Boeing Patent Licence Agreement of 23 September 2012, confer a benefit for the same reasons as in the case of the pre-2007 DOD assistance instruments modified by the DOD-Boeing Patent Licence Agreement.[1530]

8.393. In addition, with respect to the DOD procurement contracts, the European Union argues that the Appellate Body's reasoning in the original proceeding; i.e. that the NASA procurement contracts and DOD assistance instruments conferred a benefit based on the distribution of patent rights, applies equally to the DOD procurement contracts, given the finding that the distribution of patent rights between DOD and its contractors is uniform across all DOD procurement contracts and assistance instruments.[1531] The European Union considers that the market-based comparisons performed by the Appellate Body to determine whether the NASA procurement contracts and DOD assistance instruments conferred a benefit on Boeing are highly relevant to the benefit determination in respect of other aeronautics R&D measures, such as the DOD procurement contracts. However, the Panel may also consider additional evidence provided by the parties in this proceeding to establish a market benchmark for those other aeronautics R&D measures.[1532]

8.394. The European Union refers to the examples of collaborative R&D agreements commissioned by non-U.S. Government entities discussed by its technology licensing expert, Mr Razgaitis. The private collaborative R&D agreements surveyed and discussed by Mr Razgaitis demonstrate that the U.S. Government offers Boeing better terms with respect to the allocation of intellectual property rights than Boeing could receive in the market.[1533] Similarly, the Bayh-Dole regime for allocating intellectual property rights under U.S. Government R&D contracts, as well as DOD's elimination of its recoupment policy (both of which the European Union considers have the explicit, non-commercial purpose of assisting U.S. industry), demonstrate that the financial contributions with respect to DOD procurement contracts are not provided on the basis of commercial considerations.[1534] Indeed, the European Union considers that the benefit resulting

[1530] See paras. 8.8 to 8.15 above.
[1531] European Union's first written submission, para. 374. See also European Union's opening statement at the meeting with the Panel, para. 28. The European Union argues that, based on precisely the same evidence considered by the Appellate Body in its own analysis of "benefit", it demonstrates that the "funding and support" provided to Boeing by DOD, whether through procurement contracts or assistance instruments, confers exactly the same benefit in the same manner. (European Union's second written submission, para. 482).
[1532] European Union's opening statement at the meeting with the Panel, para. 28.
[1533] European Union's response to Panel question No. 24, para. 135.
[1534] European Union's second written submission, para. 520 (referring to U.S. DOD, Final Rule, "Recoupment of Nonrecurring Costs on Sales of U.S. Items", 58 FR 16497 (29 March 1993), (Exhibit EU-279)); response to Panel question No. 24, para. 135.

from the DOD procurement contracts is evidenced, in part, by the "systematically skewed (in comparison to the market) allocation of patent rights" in U.S. Government R&D contracts.[1535]

8.395. The European Union argues that the fact that the primary objective of the "LCA-relevant" R&D at issue in this dispute may be military does not affect the overall conclusion that the DOD procurement contracts (and assistance instruments) provide a benefit to Boeing. Under all such procurement contracts and assistance instruments, the U.S. Government "systematically receives less than a commissioning party would in a market-based transaction, and Boeing systematically receives more than a commissioned party would in a market-based transaction".[1536] In any case, one would also expect the U.S. Government, if it were acting according to market considerations, to "use its tremendous bargaining power to extract economic benefit from the dual use aspects of the resulting technologies" so that it could re-invest in further R&D with a military objective.[1537]

8.396. The European Union rejects the arguments of the United States that competitive bidding in the award of DOD procurement contracts ensures that DOD did not pay more than adequate remuneration in its DOD procurement contracts. It argues that the Appellate Body rejected a similar argument made by the United States in the context of the original DOD assistance instruments, and submits that these arguments can be rejected by the Panel on the same basis.[1538]

8.397. The European Union considers that both evidence of the terms that the market would have offered, and evidence of whether a financial contribution was provided on the basis of commercial considerations, can be relevant to determining the existence of benefit.[1539] In the present case, both types of evidence indicate that the DOD procurement contracts provide a benefit. In addition, the United States has provided no evidence to support its assertions that the intellectual property rights allocated to Boeing through any of the aeronautics R&D contracts and agreements were provided in exchange for Boeing accepting a lower profit margin, lower levels of cost reimbursement, or a lower fixed-price contract.[1540]

8.398. The United States argues, that, for the same reasons as in the case of the pre-2007 assistance instruments[1541], the financial contributions provided through the DOD post-2006 assistance instruments modified by the DOD-Boeing Patent Licence Agreement, do not confer a benefit.

[1535] European Union's response to Panel question No. 25, para. 138. See also European Union's response to Panel question No. 26, para. 162: "{r}ather, once, as here, it is clear that there is a benefit associated with systematically gifting the relevant IP rights in advance, that should be sufficient for the purposes of the {benefit} analysis." European Union's comments on the United States' response to Panel question No. 67, paras. 13 and 65: "{t}he distribution of IP {under DOD procurement contracts and assistance instruments} is always the same, and it is always more favourable to Boeing than it is to any commissioned party in the market, and less favourable to DOD than any commissioning party in the market. As the development of technology and IP is the whole purpose of the R&D contracts, this necessarily leads to a finding that benefit exists, as was well understood by the Appellate Body". Mr Razgaitis also opines that the lack of bargaining power over intellectual property ownership under U.S. Government R&D contracts discredits the United States' arguments regarding the impact of competitive bidding on the exchange of value in DOD and NASA procurement contracts. According to Mr Razgaitis, because of the provisions of U.S. law that "preclude" DOD and NASA from bargaining over ownership of intellectual property rights, Boeing does not need to "underbid" to fully account for the net present value of the foreground intellectual property. Mr Razgaitis considers that there is no evidence that Boeing, or any other commissioned party, in practice reduces its RDT&E costs because of the Bayh-Dole provisions. (Second Supplemental Razgaitis Declaration, (Exhibit EU-1398), para. 49).

[1536] European Union's comments on the United States' response to Panel question No. 67, para. 13.

[1537] European Union's comments on the United States' response to Panel question No. 67, para. 13.

[1538] European Union's second written submission, para. 519; response to Panel question No. 25, para. 140. The European Union also argues that the discussion by the Appellate Body of the potential relevance of competitive bidding to the benefit determination in the *Canada – Renewable Energy / Canada – Feed-in Tariff Program* case should be understood in the context of the market situation in that case: a standard contract established by a provincial power authority *vis-à-vis* a large number of suppliers for a fungible good (electricity) at a standard price. By contrast, the present situation involves a small number of privately-informed, heterogeneous suppliers submitting bids to asymmetrically informed government agencies over a heterogeneous product (R&D) with an uncertain outcome. (European Union's response to Panel question No. 25, para. 137; comments on the United States' response to Panel question No. 83, para. 119 and fn 201).

[1539] European Union's response to Panel question No. 24, para. 134.

[1540] European Union's comments on the United States' response to Panel question No. 67, para. 25.

[1541] See paras. 8.16 to 8.22 above.

8.399. With respect to DOD procurement contracts, the United States argues that the fact DOD was "buying something" in the transactions must play a role in the benefit analysis, even if the Panel ultimately rejects the United States' arguments that these measures are not financial contributions because they are purchases of services.[1542]

8.400. The context provided by Article 14(d) of the SCM Agreement indicates that the proper standard for assessing whether government purchases confer a benefit is the adequate remuneration standard. Under this standard, a benefit would exist only if the U.S. Government paid too much for the rights it obtained. The European Union fails to address this standard.[1543] The United States considers this a critical point because governments often seek to buy things that a commercial actor would not want or does not need. The adequate remuneration standard therefore focuses on what the government purchased, and not what a private entity would have purchased in similar circumstances, and asks whether the government paid too much (i.e. more than adequate remuneration) for what it sought to buy.[1544]

8.401. The United States disagrees with the European Union that the Appellate Body's rejection of the relevance of competitive bidding to the question whether the pre-2007 DOD assistance instruments conferred a benefit, applies also to DOD procurement contracts.[1545] The United States argues that the Appellate Body's statement regarding competitive bidding in the original proceeding addressed only DOD assistance instruments, which the Appellate Body had differentiated from DOD procurement contracts. The Appellate Body's statements regarding competitive bidding in *Canada – Renewable Energy / Canada – Feed-in-Tariff Program* indicate that the relevance of competitive bidding to the analysis of benefit depends on the facts.[1546] Moreover, economically a rational bidder will factor the cost or value of a fixed term of a bid into the economic value of the overall package, and adjust its bid accordingly.[1547]

8.402. The United States asserts that most DOD procurement contracts were subject to full and open competition, and those that were not arose primarily because Boeing was doing follow-on work, or had been down-selected from contracts that had been subject to full and open competition. The Panel can therefore have a high degree of confidence that DOD did not pay more than adequate remuneration in its procurement contracts.[1548]

8.403. The United States criticises the European Union's approach to determining the commercial consistency of the aeronautics R&D contracts and agreements as being based on only one term of the contract (i.e. the allocation of patent rights). According to the United States, a thorough and systematic review of the evidence indicates that the terms under which the U.S. Government commissions research work are no more advantageous to the recipient than comparable

[1542] United States' first written submission, paras. 391 and 425.

[1543] United States' first written submission, paras. 392 and 426; second written submission, paras. 384 and 426.

[1544] United States' second written submission, paras. 232 and 233. Although this argument appears in the section of the United States' submission concerning the NASA aeronautics R&D measures, the United States explains that its observations as to why the post-2006 NASA procurement contracts do not confer a benefit apply also to the DOD procurement contracts. (United States' second written submission, para. 384).

[1545] United States' second written submission, para. 235. See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 665: "intellectual property is not open to bidding; it is determined by US law. Because each bidder knows in advance that this particular aspect of the transaction will not be altered with respect to the competitors, ownership of any resulting intellectual property will not be a determinative element in how each bidder structures its proposals."

[1546] Appellate Body Reports, *Canada – Renewable Energy / Canada – Feed-in-Tariff Program*, para. 5.228: "{a}lternatively, such benchmark may also be found in price-discovery mechanisms such as competitive bidding or negotiated prices, which ensure that the price paid by the government is the lowest possible price offered by a willing supply contractor."

[1547] United States' second written submission, para. 237.

[1548] United States' first written submission, paras. 393 and 427. The United States asserts that 23 out of 30 NASA procurement contracts and 41 out of 61 DOD procurement contracts were subject to "full and open competition", which involved a public solicitation of proposals and consideration of all offers. Where that was not the case, U.S. procurement regulations gave DOD and NASA "alternative strategies to inject competition into the process". The United States asserts that only three of 29 NASA procurement contracts and 19 of 61 DOD procurement contracts resulted from "sole source" solicitation. (United States' response to Panel question No. 83, para. 82; Competition in DOD contracts with Boeing for FY 2007-FY 2012, (Exhibit USA-508); and Competition in NASA contracts with Boeing for FY 2007-FY 2012, (Exhibit USA-509)).

commercial transactions.[1549] This analysis should extend beyond patent rights to consider how other aspects of the contract affect the balance of value between the parties, in particular the price that commercial commissioning parties pay for the rights they acquire.[1550]

8.404. Moreover, the United States considers that the evidence of commercial collaborative R&D arrangements before the Panel shows that, except for the issue of ownership of patent rights "where NASA and DOD contracts mirror the most prevalent commercial practice", there is no standard division of intellectual property rights. Rather, parties to commercial research contracts delineate patent rights in a variety of ways to suit their interests and objectives. The only normal market practice is for the parties to pay for the intellectual property rights that they require, and not to pay for the rights they do not require.[1551]

8.405. In this context, the United States notes that DOD is the exclusive buyer of modern air weaponry and weapons technology in the United States. Thus, when it comes to military applications of an invention invented during work under a DOD or NASA procurement contract, the government use licence is *de facto* exclusive, in the sense that the contractor "loses the economic leverage provided by ownership of the intellectual property rights with respect to future sales to its primary customer, DoD".[1552] For an invention with purely or predominantly military applications, the government use licence represents essentially all of the economic value of a patent. In this respect, the United States argues that the area covered by the government use licence granted to DOD (and NASA) under the procurement contracts is broader than the comparable rights granted to commissioning parties in the non-government collaborative R&D arrangements in evidence before the Panel and discussed by Messrs Berneman and Razgaitis. **[***]**.[1553]

8.406. Certain of the third parties (Brazil, Japan, and Korea) make arguments regarding the existence of a benefit within the meaning of Article 1.1(b) of the SCM Agreement. These arguments are summarized in Section 8.1.2 above.

8.2.3.4.2 Evaluation by the Panel

8.407. In this Section of the Report, we evaluate whether three categories of DOD aeronautics R&D measures confer a benefit on Boeing within the meaning of Article 1.1(b) of the SCM Agreement:

a. six post-2006 DOD assistance instruments included in annex B of the United States' Compliance Communication (these having been amended by the DOD-Boeing Patent Licence Agreement)[1554];

b. post-2006 DOD assistance instruments that have not been modified by the DOD-Boeing Patent Licence Agreement; and

c. DOD procurement contracts (both pre-2007 and post-2006).

[1549] United States' response to Panel question No. 67, para. 11.
[1550] The United States argues that a narrow approach to benefit, focused on isolated terms of a transaction, is contrary to the SCM Agreement. It notes that in *EC and certain member States – Large Civil Aircraft*, the panel and Appellate Body considered all aspects of the transaction, including the interest rate, term of loan, royalties, fees, and expected delivery schedules as part of the evaluation as to whether, as a whole, the terms the EU member States offered to Airbus were more favourable than those available in the market. (United States' response to Panel question No. 67, para. 13).
[1551] United States' response to Panel question No. 67, para. 28.
[1552] United States' response to Panel question No. 67, para. 15.
[1553] United States' response to Panel question No. 67, paras. 24 and 27.
[1554] Annex B to the United States' Compliance Communication lists the DOD assistance instruments that were subject to the DSB recommendations and rulings in the original proceeding (the pre-2007 DOD assistance instruments), along with a further six DOD assistance instruments that came into existence after the panel request in the original proceeding. These "modified post-2006 DOD assistance instruments" are referred to in paragraph 5 of the United States' Compliance Communication and are explicitly identified in the United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 23(c), para. 48.

8.2.3.4.2.1 Certain post-2006 DOD assistance instruments that have been modified by the DOD-Boeing Patent Licence Agreement

8.408. We find in Section 8.1.3 of this Report that the grant to DOD of commercial use rights in respect of Boeing-owned patents under the pre-2007 DOD assistance instruments effected by the DOD-Boeing Patent Licence Agreement has not brought those instruments into line with prevailing market practices for collaborative R&D arrangements in such a way as to remove the benefit that the Appellate Body had found was conferred through the pre-2007 DOD assistance instruments in the original proceeding. This finding and the underlying analysis equally apply to the six post-2006 assistance instruments that have been modified by the DOD-Boeing Patent Licence Agreement.[1555]

8.409. **We therefore find that the financial contributions in the form of payments and access to DOD facilities, equipment, and employees, provided through certain post-2006 assistance instruments that have been modified by the DOD-Boeing Patent Licence Agreement, confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement**.

8.2.3.4.2.2 Post-2006 assistance instruments that have not been modified by the DOD-Boeing Patent Licence Agreement

8.410. The United States confirms that the DOD-Boeing Patent Licence Agreement applies only to the agreements listed in Attachment A thereto, and does not affect patent rights in respect of any other DOD assistance instruments, such as the post-2006 assistance instruments (other than the six post-2006 assistance instruments specifically identified as having been modified by the DOD-Boeing Patent Licence Agreement).[1556]

8.411. As explained above, the DOD-Boeing Patent Licence Agreement granted DOD, as commissioning party, a limited commercial use licence in respect of Boeing-owned patents arising from work performed by Boeing under the DOD assistance instruments to which it applies. In Section 8.2.3.4.2.1 above, we conclude, based on our assessment of the evidence of comparable private collaborative R&D agreements, and of the opinions of the parties' respective technology licensing experts, that Boeing as commissioned party under the modified DOD assistance instruments remains in a more favourable position as regards its ability to commercially exploit Boeing-owned patents than the commissioned parties under the private collaborative R&D agreements.

8.412. The "unmodified" DOD assistance instruments do not grant DOD a commercial use licence in respect of Boeing-owned patents. Boeing therefore has a more extensive ability to commercially exploit its patents under these DOD assistance instruments than it has under the pre-2007 DOD assistance instruments and those post-2006 DOD assistance instruments that have been modified by the DOD-Boeing Patent Licence Agreement. Given that we conclude that the pre-2007 DOD assistance and those post-2006 DOD assistance instruments that have been modified by the DOD-Boeing Patent Licence Agreement, confer a benefit on Boeing, logically we must also conclude that the post-2006 DOD assistance instruments that have not been modified to grant DOD a commercial use licence, confer a benefit.

8.413. This conclusion is also consistent with the Appellate Body's finding that the pre-2007 DOD assistance instruments in the original proceeding, which contain the same allocation of rights in respect of patents as the "unmodified", post-2006 DOD assistance instruments now before us, involved a more favourable allocation of intellectual property rights to Boeing as commissioned party than the allocations to commissioned parties under **[***]** and therefore conferred a benefit on Boeing.

8.414. **We therefore find that the financial contributions in the form of payments and access to DOD facilities, equipment, and employees, provided to Boeing through the post-2006 DOD assistance instruments that have not been modified by the DOD-Boeing Patent Licence Agreement, confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement**.

[1555] See para. 8.49 above.
[1556] United States' response to Panel question No. 87, para. 158.

8.2.3.4.2.3 DOD procurement contracts

8.415. In Section 8.2.3.3.3, we characterize the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts as principally and predominantly being purchases of R&D services by DOD from Boeing. In this Section of the Report, we evaluate whether, assuming *arguendo* that these transactions constitute financial contributions within the meaning of Article 1.1(a)(1), they confer a benefit within the meaning of Article 1.1(b).

8.416. We recall that the original panel made no benefit findings as regards the DOD procurement contracts, owing to its view that the DOD procurement contracts were properly characterized as "purchases of services" and thus were outside the scope of Article 1.1(a)(1). The issue of whether the payments and access to DOD facilities provided to Boeing through the DOD procurement contracts constitute financial contributions that confer a benefit, was not addressed on appeal.[1557]

8.417. In evaluating whether the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts properly before us in this proceeding confer a benefit, we must first address the relevant standard that we should apply. The European Union argues that we should apply the same benefit analysis as that applied by the Appellate Body in concluding that the original NASA procurement contracts and DOD assistance instruments conferred a benefit. The United States argues that the proper standard for assessing whether a financial contribution confers a benefit depends on the nature of the financial contribution, and in the case of the DOD procurement contracts, the fact that DOD was "buying something" in the transactions must play a role.

8.418. Given our characterization of the DOD procurement contracts as principally and predominantly involving purchases of R&D services by DOD from Boeing, we consider that, consistent with Article 14(d) of the SCM Agreement, the determination of whether the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts confer a benefit on Boeing, involves an assessment of whether Boeing was paid adequate remuneration for performing the R&D work.

8.419. The European Union's benefit arguments in respect of the DOD procurement contracts are premised on the assumption that the DOD procurement contracts, like the NASA procurement contracts and DOD assistance instruments, are properly characterized as composite transactions that are "akin to a species of joint venture", which are "analogous to" equity infusions, and therefore involve financial contributions within the meaning of Article 1.1(a)(1)(i) and (iii) of the SCM Agreement. The European Union has presented evidence of private actor collaborative R&D arrangements, which it regards as demonstrating that DOD essentially "paid too much" because Boeing, as the commissioned party, obtained ownership of the inventions resulting from the R&D work that it performed (and thus the rights to obtain patents in respect of those inventions), while DOD obtained a government use licence in respect of those patents. According to the European Union, such an allocation of ownership of inventions is inconsistent with what market actors commissioning and performing R&D would negotiate, as evidenced by the various private actor collaborative R&D arrangements submitted into evidence and discussed in the BCI Appendix.[1558]

8.420. As we explain in Section 8.2.3.3.3, we do not characterize the DOD procurement contracts as collaborative R&D arrangements. We therefore do not consider that a focus on the allocation of intellectual property rights as the "output" of a joint venture undertaking is an appropriate means of determining whether DOD as the purchaser of R&D services from Boeing, paid too much for what it acquired. The question of whether Boeing was paid adequate remuneration for performing the R&D work for DOD requires a consideration of all of the terms of the transaction, including how much DOD paid in relation to the work that Boeing performed.

[1557] The Appellate Body declared moot the panel's finding that DOD procurement contracts are properly characterized as "purchases of services", and thus not financial contributions under Article 1.1(a)(1). It then indicated that it did not "complete the analysis regarding the USDOD procurement contracts at issue in this dispute" as neither party had requested it to do so. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 620, fn 1298).

[1558] See Appendix 1.

8.421. Even if we were to assess whether the financial contributions assumed to be provided through the DOD procurement contracts confer a benefit on Boeing by focusing solely on the allocation of the intellectual property rights arising from the performance of the R&D, in isolation from the other terms of the transaction, we would not regard the private collaborative R&D agreements as appropriate benchmarks. As we note in paragraph 8.337, the DOD procurement contracts involve complex, long-term purchases of R&D services by DOD from Boeing for the development of weapon systems. While the examples of private collaborative R&D agreements submitted in evidence (and discussed in greater detail in the BCI Appendix[1559]) sufficiently resemble the relevant characteristics of the NASA procurement contracts and DOD assistance instruments, in terms of the mutuality of interests that is an inherent feature of collaborative R&D arrangements or R&D alliances, there is no such similarity between the private collaborative R&D agreements and the DOD procurement contracts.[1560] Unlike DOD assistance instruments, there is no cost-sharing between DOD and Boeing, and no relationship of collaboration between DOD and Boeing wherein they can be said to undertake a project of mutual interest. Unlike the NASA procurement contracts, the objectives of the commissioned R&D do not include enhancing the competitiveness of the U.S. aerospace industry. Rather, as we have said, the fundamental nature of the DOD-Boeing relationship under the DOD procurement contracts is one of purchaser of R&D services for DOD and supplier of those services for Boeing.

8.422. In the context of the DOD procurement contracts, it appears to us that the government use licence granted to DOD in respect of Boeing-owned patents that may result from the performance of the R&D work captures the economic value of the R&D for DOD. The European Union's technology licensing expert, Mr Razgaitis, says that the value of intellectual property rights depends upon what such rights permit the recipient to do "in real commercial terms".[1561] Under the DOD procurement contracts, the government use licence enables DOD to use Boeing-owned patents without paying royalties. Third-party contractors to the U.S. Government (including Boeing's competitors) also have the right to practice those patents royalty-free in any work they conduct for the U.S. Government. As DOD is the sole purchaser of modern air weaponry in the United States, Boeing's ability to commercially exploit the R&D is, in a practical sense, limited. Moreover, Boeing's practical ability to exploit any military technologies for commercial purposes outside the military context is circumscribed by U.S. legal restrictions on the use of military technologies and data, such as classification of information under Executive Order 12958 and export-controls under the ITAR and EAR.[1562]

8.423. Boeing's practical ability to commercially exploit patents that it owns as a result of performing R&D work for DOD, and the practical consequences of the government use licence granted to DOD, differ in the context of DOD assistance instruments and DOD procurement contracts. Although the formal allocation of patent ownership and use rights is the same under both types of instrument, DOD assistance instruments by definition involve "assistance" in the sense of a transfer of a thing of value to a recipient.[1563]

8.424. It is reasonable to assume that the nature of R&D undertaken in such a collaborative context would be expected by the parties to yield outcomes that Boeing would have the practical ability to commercially exploit, otherwise a commercial actor like Boeing would be unlikely to contribute to the costs of performing the R&D and there would be no legal basis for the DOD to have selected an assistance instrument as the appropriate instrument for the transaction with Boeing. Indeed, the fact that many of the assistance instruments were funded through program elements with explicitly dual-use objectives would tend to support this conclusion.

[1559] See Appendix 1.

[1560] We discuss the relevant characteristics of the DOD procurement contracts in Section 8.2.3.3.3 of this Report. Our discussion of the private collaborative R&D agreements submitted in evidence is set forth in the BCI Appendix (Appendix 1).

[1561] Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 43. We note also that the European Union suggests that the "formal ownership over patents" is not nearly as relevant as a focus on the "actual *effective distribution* of the rights, taking into account the value of various non-exclusive and exclusive licences", noting that the value of patent ownership can be, and often is, redistributed through licensing, including through exclusive licences. (European Union's comments on the United States' response to Panel question No. 67, para. 46). (emphasis original)

[1562] See Section 8.2.3.2.5 for a description of the main legal restrictions on the dissemination of military technologies and data.

[1563] See Section 8.2.3.2.2 for a discussion of the legal framework governing the use of DOD procurement contracts and assistance instruments.

8.425. On the other hand, DOD and Boeing engage with each other on a different footing in the context of the DOD procurement contracts. As we have explained above, in this context, the government use licence would, as a practical matter, occupy the field of possibilities for commercial exploitation of the military technologies, and Boeing's practical ability to commercially exploit its patented technologies, whether in a military or non-military context, is consequently more limited. We therefore disagree with the assertions made by the European Union that, whether the R&D in question is funded through procurement contracts or assistance instruments, "the US Government systematically receives less than a commissioning party would in a market-based transaction, and Boeing systematically receives more than a commissioned party would in a market-based transaction."[1564]

8.426. For the foregoing reasons, we do not regard the evidence of allocation of intellectual property rights under the private actor collaborative R&D agreements discussed in the BCI Appendix[1565] as being probative of whether the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts, confer a benefit on Boeing.

8.427. We also wish to address a line of argumentation advanced by the European Union concerning the relevance of DOD's termination of its recoupment policy in 1992 to the question of whether the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts, confer a benefit.

8.428. Between 1967 and 1992, the U.S. Government required contractors to reimburse DOD for nonrecurring costs when contractors made or intended to make commercial sales using dual-use technologies that had been funded with DOD investment.[1566] DOD's stated purpose of this policy was as follows:

> It is the policy of the Department of Defense to recover a *fair share* of its investment in nonrecurring costs related to products, and/or a *fair price* for its contribution to the development of related technology, when the products are sold, and/or when technology is transferred … .[1567]

8.429. The U.S. Government terminated the DOD recoupment policy in June 1992.[1568] In doing so, it noted that the change in policy "will assist the U.S. defense industry to be more competitive on a global basis by reducing contracting costs through economies of scale, pricing incentives, and reduced administrative burdens".[1569]

8.430. The European Union argues that the recoupment policy that was in place from 1967 until 1992 had been implemented by the U.S. Government to ensure that DOD did not subsidize industry. It refers in this regard to a U.S. Government response to a report on U.S. Government support to the U.S. commercial aircraft industry that had been commissioned by the European Communities:

> These policies also recognize the potential for crossover into development and production of civilian aircraft of benefits that may result from government support of research and development (R&D) on military items. … *One of the objectives in*

[1564] See e.g. European Union's opening statement at the meeting with the Panel, para. 30; response to Panel question No. 67, paras. 69 and 74; and comments on the United States' response to Panel question No. 67, paras. 13, 17-22, and 63-67.

[1565] See Appendix 1.

[1566] Letter from GAO to D. B. Fascell, Chairman, Committee on Foreign Affairs, House of Representatives, B-214394, 6 September 1984, (Exhibit EU-274), p. 2.

[1567] *United States Code of Federal Regulations*, Title 48, section 271.002 (1989), (Exhibit EU-275), section 271.002(a). (emphasis added)

[1568] Statement of M. Fitzwater, White House Press Secretary, "New Policy on Federal Defense Procurement", Dispatch, Vol. 3, No. 26, 29 June 1992, (Exhibit EU-277); U.S. DOD Directive, No. 2140.2 (13 January 1993), (Exhibit EU-278), reference (a). The 1992 *Agreement between the European Communities and the Government of the United States of America concerning the application of the GATT Agreement on Trade in Civil Aircraft on trade in large civil aircraft*, which was the subject of a serious prejudice claim by the European Communities in the original proceeding entered into force on 17 July 1992.

[1569] U.S. DOD, Final Rule, "Recoupment of Nonrecurring Costs on Sales of U.S. Items", 58 FR 16497 (29 March 1993), (Exhibit EU-279), p. 1.

> *implementing this policy is to ensure that civil aircraft companies remain commercially competitive based on their own investment and technology*.[1570]

8.431. The European Union considers that the recoupment policy "is evidence that DOD research in-fact has dual-use benefits for civil aircraft" and demonstrates the United States' knowledge of the technological and pricing advantages for LCA that contractors receive from participating in DOD research.[1571] Furthermore, by "maintaining its policy of *not* recouping a fair share of DOD's contribution to commercial sales" since 1992, it can be *inferred* that the United States intends that Boeing receive such advantages.[1572]

8.432. The United States argues that the change in recoupment policy in 1992 is irrelevant to this proceeding and does not support the European Union's contentions.[1573] This is because the recoupment regulations, when they were in effect, would not have applied to the research challenged in this proceeding, or to the Boeing aircraft that allegedly applied those technologies.[1574] Moreover, the United States argues that DOD did not terminate the recoupment policy to give industry free access to commercially applicable technology. Rather, as DOD explained in 1992 when implementing the final rule terminating the recoupment policy, "this final rule will assist the U.S. defense industry to be more competitive on a global basis by reducing contracting costs through economies of scale, pricing incentives, and reduced administrative burdens".[1575] The United States asserts that the recoupment policy was terminated because it imposed unnecessary burdens on both the U.S. Government and on contractors.[1576] In addition, as many of DOD's procurement contracts are cost-based, the anticipated cost reductions would translate directly to lower acquisition costs for DOD. Consequently, the United States argues, the recoupment regulations and their subsequent cancellation do not indicate that the challenged RDT&E program elements have the objective of conferring commercial advantages on commercial products.[1577]

8.433. We are satisfied that the termination of the 1992 recoupment policy suggests that the U.S. Government recognizes "the potential for crossover into development and production of civilian aircraft of benefits that may result from government support of research and development (R&D) on military items".[1578] However, this recognition is expressed in very general terms and is not

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[1570] European Union's first written submission, para. 240(emphasis original); second written submission, para. 396; response to Panel question No. 29, para. 176 (referring to U.S. Government, *Response to the EC-Commissioned Report "U.S. Government Support of the U.S. Commercial Aircraft Industry"*, (March 1992), (Exhibit EU-276), p. 13).

[1571] European Union's second written submission, para. 397; response to Panel question No. 29, para. 176.

[1572] European Union's second written submission, para. 397 (emphasis original); response to Panel question No. 29, para. 176.

[1573] United States' second written submission, para. 325; comments on the European Union's response to Panel question No. 29, para. 164.

[1574] United States' second written submission, para. 325; comments on the European Union's response to Panel question No. 29, para. 164. The United States notes that this issue was raised by the European Communities in the original proceeding and that the United States had explained the application of the former recoupment rules in comments on a question posed by the original panel:

> Under those rules, DoD required recoupment fees only for commercial sales of a "DoD developed item or a derivative of a DoD developed item." A "DoD developed item" would be a weapons system itself or other product whose development costs DoD paid, while a "derivative" of a DoD developed item was defined as one that "consists of common parts equal to, or more than 10 percent of the Defense item." DoD does not develop large civil aircraft, and Boeing's large civil aircraft do not have a commonality of more than ten percent with any DoD-developed article. Therefore, the old recoupment rules would not have applied to sales of large civil aircraft.

(United States' comments on the European Communities' response to Panel question No. 196(ii), para. 340 (fns omitted))

The United States emphasizes that current Boeing LCA do not meet the definition of a derivative defense product for purposes of the former recoupment policy because they do not use parts that represent 10 percent of the value of a defense item. (United States' comments on the European Union's response to Panel question No. 29, para. 164 and fn 236).

[1575] U.S. DOD, "Recoupment of Nonrecurring Costs on Sales of U.S. Items", *United States Code of Federal Regulations*, Title 58, No. 16497 (29 March 1993), (Exhibit USA-400), p. 1.

[1576] United States' comments on the European Union's response to Panel question No. 29, para. 164.

[1577] United States' second written submission, para. 325; comments on the European Union's response to Panel question No. 29, para. 164.

[1578] U.S. Government, *Response to the EC-Commissioned Report "U.S. Government Support of the U.S. Commercial Aircraft Industry"*, (March 1992), (Exhibit EU-276), p. 13.

sufficiently linked to the DOD-sponsored R&D at issue in this proceeding. Indeed, we are not persuaded, based on the evidence before us, that DOD's previous recoupment policy would have applied to the DOD-sponsored R&D at issue in this proceeding. This is because there is insufficient evidence before us that would enable us to conclude that Boeing LCA would have fallen within the definition of a "derivative" of a DOD developed item under the previous recoupment rules. In sum, we do not regard DOD's termination of the recoupment policy in 1992 as providing probative evidence in support of an inference that the DOD procurement contracts (or assistance instruments) before us in this proceeding confer a benefit on Boeing.

8.434. In sum, the European Union has not discharged its burden of demonstrating that the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts, assuming these transactions involved financial contributions, confer a benefit on Boeing.

8.435. The United States has presented evidence that in its view demonstrates that DOD employed competitive practices in awarding the DOD procurement contracts to ensure that DOD did not pay too much for the services that it contracted Boeing to perform. In light of our conclusion that the European Union has failed to discharge its burden to demonstrate that the payments and access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD procurement contracts, confer a benefit on Boeing, we do not consider it necessary to further address this evidence, or the United States' arguments that the DOD procurement contracts were awarded on a competitive basis and that this demonstrates that DOD did not pay more for the R&D than it should have.

8.436. Therefore, the Panel finds that, assuming *arguendo* that the payments and access to DOD facilities, and where applicable, equipment and employees, provided to Boeing through DOD procurement contracts funded under the relevant RDT&E program elements, which we have characterized as principally purchases of R&D services by DOD from Boeing, were to involve financial contributions within the meaning of Article 1.1(a)(1), the European Union has not established that they confer a benefit within the meaning of Article 1.1(b). As a consequence, there is no basis to find that the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement through these measures.

8.437. In this Section 8.2.3.3 of the Report, we find that:

a. Transactions between DOD and Boeing under post-2006 DOD assistance instruments, whether or not modified by the DOD-Boeing Patent Licence Agreement, involve financial contributions that confer a benefit.

b. Assuming *arguendo* that the payments and access to any DOD facilities, and where applicable, equipment or employees provided to Boeing through DOD procurement contracts funded under the relevant RDT&E program elements, which we have characterized as principally purchases of R&D services by DOD from Boeing, were to involve financial contributions within the meaning of Article 1.1(a)(1), the European Union has not established that they confer a benefit within the meaning of Article 1.1(b).

8.438. In light of this finding, we next evaluate whether the subsidies provided through the post-2006 DOD assistance instruments are specific within the meaning of Article 2 of the SCM Agreement.

8.2.3.5 Whether the subsidy is specific

8.2.3.5.1 Main arguments of the parties

8.439. The European Union argues that the subsidies provided through the post-2006 DOD assistance instruments are specific within the meaning of Articles 2.1(a) and 2.1(c) of the SCM Agreement.[1579]

8.440. With regard to Article 2.1(a), the European Union relies on the original panel's finding that the DOD aeronautics R&D subsidies were specific to a "group of enterprises or industries" within the meaning of Article 2.1(a) "given the fairly narrow focus of R&D performed" under the challenged RDT&E program elements.[1580] With regard to Article 2.1(c), the European Union recalls that the original panel found that the DOD aeronautics R&D subsidies were specific because, whether viewed at the level of the individual RDT&E program elements, or the RDT&E Program as a whole, DOD RDT&E went predominantly to firms in the defence industry.[1581] The European Union notes that the United States did not appeal these findings, and argues that they should continue to hold true for the original RDT&E program elements and are fully applicable to any additional RDT&E program elements, given that these additional program elements have the same relevant characteristics and are funded pursuant to the same overarching DOD RDT&E Program.[1582]

8.441. The European Union rejects the argument of the United States that, for purposes of the analysis under Article 2.1(a), the subsidy at issue is the allocation of rights in patents on terms more favourable than available in the market. The European Union submits that the subsidies consist not just of patent rights but also the provision of funding and support to Boeing for LCA-relevant R&D through certain of the original program elements, royalty-free beneficial use of LCA technologies developed with the subsidies provided under the original RDT&E program elements and additional subsidies to Boeing in the form of funding and access to government facilities, equipment, and employees provided under additional program elements. The European Union explains, in this respect, that while it considers the intellectual property rights distribution when evaluating the benefit conferred, the "benefit" comprises not only the provision of intellectual property, but also the provision of payments, and access to government facilities, equipment, and employees, "for less than what a market-based actor would demand". The consideration of intellectual property rights distribution, and comparison to intellectual property rights distribution in market benchmarks is "just *a means to the end of determining the existence of benefit* from these financial contributions – it is not the 'benefit' of the 'subsidy', in and of itself".[1583]

8.442. Thus, the European Union considers that the reasoning of the Appellate Body in the original proceeding, regarding the non-specificity of the allocation of patent rights as a self-standing subsidy, is not applicable to the assessment of specificity of the DOD aeronautics R&D subsidies before this Panel. The European Union recalls the Appellate Body's statement that its findings in connection with the specificity of the allocation of patent rights, if considered to be a self-standing subsidy, "do not traverse" the original panel's findings related to the payments and access to NASA facilities, equipment, and employees. The European Union alleges that the United States is now attempting to use the Appellate Body's findings to traverse the original panel's findings, in exactly the way that the Appellate Body cautioned that they could not be used.[1584] The European Union denies the United States' allegation that it has alleged a different subsidy with respect to DOD aeronautics R&D funding and other support for aeronautics R&D from that in the original proceeding, and asserts that its claims address the exact same subsidies as were found to exist in the original proceedings, and the continuation of those subsidies through successor and closely-related aeronautics R&D programmes.[1585]

[1579] European Union's first written submission, paras. 386 and 387. We note that the European Union does not appear to make its argument under Article 2.1(c) in the alternative.
[1580] European Union's first written submission, para. 386; second written submission, para. 523.
[1581] European Union's first written submission, para. 386; second written submission, para. 523.
[1582] European Union's second written submission, para. 524.
[1583] European Union's second written submission, paras. 526-530. (emphasis original)
[1584] European Union's second written submission, paras. 531-533.
[1585] European Union's comments on United States' response to Panel question No. 28, para. 181.

8.443. The United States argues that "the patent rights subsidy alleged by the European Union" is not specific, within the meaning of Article 2.1(a) of the SCM Agreement, because it is available under any U.S. Government contract.[1586] The standard addressed by Article 2.1(a) of the SCM Agreement is whether access to the *subsidy* is limited. With respect to DOD assistance instruments, which the European Union alleges involve financial contributions in the form of payments and provision of goods and services, the only benefit alleged is that Boeing receives more favourable rights in patents than would be the case if a commercial actor had funded the research. The specificity analysis should therefore be based on that subsidy.[1587]

8.444. The United States argues that the European Union incorrectly characterizes its claims as to the existence of a benefit with regard to NASA and DOD contracts and agreements. According to the United States, the European Union has not argued "that {DOD} paid Boeing too much for the work Boeing conducted and the intellectual property rights that resulted", or "that no market-based actor would make payments, or provide facilities, equipment, and employees to obtain research results that the market-based actor sought".[1588] Rather, the European Union's allegation of the existence of a benefit is limited to the fact that Boeing receives more favourable rights in respect of patents than would be the case if a commercial actor had funded the research. Thus, the specificity analysis must be limited to Boeing's allocation of rights in patents that is more favourable than under a commercial transaction.[1589]

8.445. The United States recalls, in this respect, that the Appellate Body in the original proceeding found that the attribution of patent rights, if considered as a "free-standing subsidy" is not specific, because it is available under any U.S. Government R&D contract, by any agency, in any sector.[1590] The United States also recalls that the Appellate Body indicated that a subsidy provided through a particular programme, considered separately, will not be considered specific where multiple authorities implement the same measure.[1591]

8.446. The United States considers that the Appellate Body's statement that its findings with respect to whether the allocation of patent rights, if considered as a subsidy by itself, was specific "do not traverse the panel's findings of specificity relating to the payments and other support provided under the NASA USDOD contracts and agreements", is not germane to this proceeding because the European Union is alleging a different financial contribution and benefit, which requires a different analysis of specificity.[1592]

8.447. The United States considers that the European Union's contention that specificity exists under Article 2.1(a) because R&D performed is limited to defence topics, does not address the standard established by the SCM Agreement (whether access to the *subsidy* is limited) because the European Union has never established or even claimed that DOD aeronautics R&D programmes, taken as a whole, are a subsidy to Boeing.[1593]

8.448. The United States argues that the European Union's specificity arguments concerning Article 2.1(c) are similarly flawed in that they address only the DOD aeronautics R&D programmes. The European Union has presented no evidence as to *de facto* specificity because access to the treatment in question (the allocation of patent rights) is available through U.S. Government contracting.[1594]

8.2.3.5.2 Evaluation by the Panel

8.449. The issue before us is whether the subsidies provided through the post-2006 DOD assistance instruments are specific within the meaning of Article 2.1 (a); i.e. whether "the granting

[1586] United States' first written submission, section 3.3.4.4.4.
[1587] United States' first written submission, para. 292; second written submission, para. 269.
[1588] United States' second written submission, paras. 252, and 269. See also United States' first written submission, paras. 259 and 260; second written submission paras. 248 and 255.
[1589] United States' first written submission, para. 259; second written submission, paras. 248, 252, 255, and 269.
[1590] United States' first written submission, para. 291.
[1591] United States' second written submission, para. 269.
[1592] United States' first written submission, paras. 254 and 255.
[1593] United States' first written submission, para. 292; second written submission, para. 249.
[1594] United States' first written submission, para. 293.

authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to the subsidy to certain enterprises".[1595]

8.450. The disagreement between the parties on whether access to the subsidy is explicitly limited pertains to the same issue that we considered above in Section 8.2.2.5 in relation to the post-2006 NASA procurement contracts and Space Act Agreements; namely, the appropriate characterization of the "subsidy" provided to Boeing through the DOD assistance instruments and the corresponding identification of the "legislation" pursuant to which the "granting authority" operates[1596], which frames the assessment of whether access to the subsidy is explicitly limited to certain enterprises for purposes of Article 2.1(a).

8.451. The European Union argues that, for purposes of determining of whether access to the subsidy is explicitly limited, the "subsidy" should be defined, in this case, as payments and the provision of access to facilities, equipment, and employees on terms more favourable than available in the market and that, as such, the subsidy is exactly the same "subsidy", access to which the original panel found to be explicitly limited.[1597] The United States argues that the subsidy should be defined in terms of the allocation of rights in patents on terms more favourable than available in the market and that, as such, the subsidy is the same "subsidy", access to which the Appellate Body found *not* to be explicitly limited in the original proceeding.[1598]

8.452. Before addressing this question of how the relevant subsidy should be defined in this case in order to ensure a proper analysis of whether access to the subsidy is explicitly limited, we briefly recall the relevant findings made in the original proceeding by the panel and the Appellate Body which are relied upon by the parties in support of their opposing views.

8.453. First, in the original proceeding, the panel found that the payments and access to DOD facilities provided to Boeing through DOD assistance instruments were financial contributions that conferred a benefit on Boeing, on the basis that no commercial entity would provide payments and access to its facilities and personnel to another commercial entity on the condition that the other entity perform R&D activities principally for the benefit and use of that other entity.[1599] The panel then assessed whether these subsidies were specific within the meaning of Article 2 on the basis that the individual RDT&E program elements appeared to be the "relevant frame of reference".[1600] Thus, the question the panel asked was whether the *individual RDT&E program elements* were "specific" for purposes of Article 2 of the SCM Agreement. Answering that question in the affirmative, the panel found that the "fairly narrow focus of R&D" performed under the 23 individual RDT&E program elements indicated that the subsidies provided through the assistance instruments under those program elements were specific within the meaning of Article 2.1(a) of the SCM Agreement.[1601]

8.454. Although the panel's specificity findings were not appealed, its financial contribution and benefit findings were. The Appellate Body upheld the panel's findings on financial contribution and

[1595] See paras. 8.208 through 8.210 above.

[1596] While an explicit limitation on access to the subsidy may also result from "pronouncements or other actions of the granting authority" (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 757), our understanding is that the European Union bases its allegation that "access to the subsidy" is subject to an explicit limitation on what it considers to be relevant legislative and regulatory provisions pursuant to which the subsidy is granted.

[1597] In this view, the relevant "legislation pursuant to which the granting authority operates" consists of the relevant legislative and regulatory provisions that authorize, and define the objectives of, DOD aeronautics and space R&D programmes.

[1598] In this view, the relevant "legislation pursuant to which the granting authority operates" consists of the legislative framework and implementing regulations governing the distribution of intellectual property rights in U.S. Government R&D contracts.

[1599] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1184.

[1600] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1195.

[1601] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1196. The panel also considered that, even if it were necessary to examine specificity at the level of the RDT&E Program as a whole, the European Communities had demonstrated *de facto* specificity, within the meaning of Article 2.1(c) of the SCM Agreement, by showing that between 1991 and 2005, almost half of all RDT&E funding went to five enterprises, all of which form part of the same industry. (Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1197).

benefit, but on the basis of significantly different reasoning, particularly as regards the benefit determination.[1602]

8.455. Second, the question of specificity of the subsidies provided through the original DOD assistance instruments was also considered in the original proceeding in respect of the European Communities' separate claim regarding the allocation of NASA and DOD patent rights, when viewed independently from the provision of payments and access to facilities, equipment, and employees, as a self-standing subsidy.[1603] In addressing this claim, the original panel concluded that the allocation of patent rights, if assumed *arguendo* to be a self-standing subsidy, would not in any event be specific, given that "the allocation of patent rights is uniform under all U.S. Government R&D contracts, agreements, and grants, in respect of all U.S. Government departments and agencies, for all enterprises in all sectors".[1604] The European Union appealed this finding, as well as the panel's interpretation of Article 2.1 of the SCM Agreement.

8.456. The Appellate Body observed that there may have been "some overlap" in the relationship between the European Communities' claim that payments and access to facilities, equipment, and employees were subsidies, on the one hand, and its claim that the allocation of patent rights was a self-standing subsidy, on the other.[1605] The Appellate Body proceeded to address the parties' appeal of the panel's finding on the basis that neither party had appealed the panel's approach to the potential overlap between the European Communities' claims; however, the Appellate Body emphasized that "any findings {it} make{s} in connection to the specificity of the allocation of patent rights do not traverse the Panel's findings of specificity relating to the payments and other support provided under the NASA/USDOD contracts and agreements".[1606]

8.457. While the Appellate Body expressed reservations regarding the panel's use of *arguendo* reasoning[1607], it ultimately upheld the panel's finding that the allocation of patent rights under the challenged DOD assistance instruments, if conceived as a separate subsidy, was not specific within the meaning of Article 2.1(a). In particular, the Appellate Body:

a. Affirmed the panel's assessment of whether the "patent rights" subsidies in question were specific by reference to the legal framework that exists in the United States for the

[1602] The Appellate Body found that the panel had not made a proper comparison of the terms of the DOD assistance instruments (and NASA procurement contracts) with the terms of a market transaction, as required under Article 1.1(b), and that the panel's reasoning as to whether the payments and access to facilities provided under the DOD assistance instruments conferred a benefit could not be sustained. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 647). The Appellate Body completed the analysis by determining whether the "disposition of intellectual property rights under the NASA/USDOD measures at issue is consistent with what occurs in transactions between two market actors". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 653). In the course of undertaking this analysis, the Appellate Body expressed the view that "the allocation of intellectual property rights is pre-determined under the US legal framework". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 661). It concluded, based on a comparison of the intellectual property rights terms of certain contracts, which it had decided to treat as market benchmarks for purposes of completing the analysis, that "transactions in the market result in an equilibrium that is more favourable to the commissioning party than in the measures before us". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 662). Consequently, it found that the funding and support provided under the DOD assistance instruments conferred a benefit on Boeing, within the meaning of Article 1.1(b) of the SCM Agreement. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 666).

[1603] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294, for a description of Bayh-Dole Act, its associated legislative instruments and implementing regulations, and accompanying NASA-specific implementing regulations.

[1604] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294. The panel found that the U.S. Government has a general policy in place granting government contractors the option to retain title to inventions that arise from a funding agreement with the U.S. Government, pursuant to the Bayh-Dole Act, 1983 Presidential Memorandum, the 1987 Executive Order, and the general and NASA-specific regulations. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1276-7.1294).

[1605] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 726-728 and 740.

[1606] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 730.

[1607] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 741. The Appellate Body expressed the view that the panel should have first determined whether a subsidy exists, stating that "the assessment of specificity under Article 2.1 depends on how the subsidy was defined under Article 1.1, leaving little, if any, room for the adoption of an *arguendo* approach". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 739).

allocation of patent rights under U.S. Government R&D contracts and agreements, and pursuant to which NASA and DOD as granting authorities operate.[1608]

b. Focused on the legislative and regulatory framework regulating the allocation of patent rights arising from R&D funded by the U.S. Government, which revealed that the eligibility to receive the alleged "subsidy" is not limited to the class of enterprises that conducts aerospace R&D, and thus concluded that there was no a basis on which to find that such a subsidy is explicitly limited to certain enterprises, and therefore specific within the meaning of Article 2.1(a) of the SCM Agreement.[1609]

8.458. The Appellate Body reversed the panel for failing to address the European Communities' claim of *de facto* specificity under Articles 2.1(c).[1610]

8.459. As noted above, the parties disagree on whether the subsidies at issue in this proceeding are the same subsidies as those that were found to exist by the original panel, and should be found to be specific under Article 2.1(a) based on the same analysis that led the original panel to find the original measures to be specific; or whether the subsidies at issue here are different, such that the subsidies should be found to be non-specific, in accordance with the Appellate Body's analysis of the European Union's separate claim with respect to the allocation of NASA and DOD patent rights as a self-standing subsidy.

8.460. While we disagree with the European Union's assertion that its claim in this proceeding regarding the alleged post-2006 DOD assistance instruments concerns the exact same subsidies as were found to exist in the original proceeding and were found to be specific by the original panel, we also do not accept the United States' argument that the subsidies at issue are the same subsidies found to be non-specific by the Appellate Body in the context of its analysis of the European Communities' challenge to the allocation of patent rights under all NASA and DOD procurement contracts and assistance instruments as a self-standing subsidy.

8.461. The measures challenged by the European Union in this proceeding are factually the same type of measures as those challenged in the original proceeding i.e. payments and the provision of access to facilities, (and in some cases) equipment and employees, under DOD assistance instruments. However, we have found these measures to constitute subsidies on a legal basis that differs from the basis upon which the panel in the original proceeding found the measures to be subsidies. In our view, this different legal characterization of the measures as subsidies means that in determining whether "access to the subsidy" is explicitly limited, we cannot presume that the finding of the original panel, that the subsidies granted through the original DOD assistance instruments were specific under Article 2.1(a), is still applicable.

8.462. Particularly with regard to our finding on how the financial contributions at issue confer a benefit on Boeing, we note that in the original proceeding the panel found a benefit on the basis that "no private entity acting pursuant to commercial considerations, would provide payments (and access to its facilities and personnel) to another commercial entity on the condition that the entity perform R&D activities principally for the benefit and use of that other entity. At a minimum, it would be expected that some form of royalties or repayment would be required in the event that financial contributions were provided on such terms."[1611] In this proceeding, we find that the financial contributions provided under the DOD assistance instruments confer a benefit on the basis that the allocation of rights to own and use patents under those measures is more favourable to Boeing as commissioned party than the allocation of rights to own and use patent is to commissioned parties under collaborative R&D agreements between private parties. In our view, the different basis on which we determine in this proceeding that the payments and any access to DOD facilities, equipment, and employees provided through the DOD assistance instruments

[1608] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 760.
[1609] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 782, 788, and 789.
[1610] The Appellate Body found that the panel's overall analysis was "incomplete and cannot be sustained" because the panel chose not to address the European Communities' claim of *de facto* specificity under Article 2.1(c) of the SCM Agreement. (Appellate Body Report *US – Large Civil Aircraft (2nd complaint)*, para. 793). Having reversed the panel, the Appellate Body stated that it was not persuaded that NASA or DOD exercised discretionary authority with respect to the allocation of patent rights, or that the share of NASA contracts and DOD funding received by Boeing was disproportionate, so as to support a finding of specificity under Article 2.1(c). (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 799 and 800).
[1611] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1039.

constitute a financial contribution that confers a benefit means that we cannot adopt the original panel's finding of specificity regarding the pre-2007 DOD assistance instruments without first examining whether such an approach remains appropriate.[1612]

8.463. However, we do not consider that, as argued by the United States, the fact that the focus of our benefit analysis is the allocation of patent rights logically leads to the conclusion that the subsidy at issue should be defined as the allocation of patent rights on terms more favourable than available in the market and that, for purposes of determining whether access to the subsidy is limited we must treat the Bayh-Dole Act, its associated legislative instruments and implementing regulations as the relevant subsidy scheme. Since a subsidy within the meaning of Article 1 is defined in terms of financial contribution and benefit, it stands to reason that both financial contribution and benefit must be taken into consideration in an analysis of whether access to the subsidy is explicitly limited. Therefore, while we agree that the nature of the benefit found to exist obviously is a key consideration in the specificity analysis under Article 2.1(a), the question of whether access to the subsidy is explicitly limited cannot always be answered by focusing solely on the benefit.[1613] In our view, the United States' argument fails to properly consider the benefit in relation to the financial contribution and the particular context in which that financial contribution occurs.

8.464. As is clear from Sections 8.1.3 and 8.2.3.5.2, our benefit assessment has been conducted in the context of a characterization of the DOD assistance instruments as collaborative R&D agreements between DOD and Boeing. In this context, we considered it appropriate to assess whether the financial contributions provide a benefit on the basis of an examination of how the R&D partners agree to allocate the ownership of inventions, the right to licence patents obtained from inventions discovered in the course of the collaboration, and the use of data generated from the collaboration. Whether this will be the case for other R&D contracts and agreements concluded between NASA, DOD or indeed, any other U.S. Government agencies, will depend very much on the programmes in question, and a consideration of all of the terms of the transactions, including those relevant to the characterization of the financial contribution and benefit.

8.465. For example, our characterization of the payments (and any access to DOD facilities, equipment or employees) provided to Boeing through DOD procurement contracts, as principally involving purchases of R&D services, has led us to conclude that, even assuming such transactions involved financial contributions, it would not be appropriate to undertake the benefit determination by focusing exclusively on the allocation of patent rights, or intellectual property rights more generally, in isolation from the other terms of the purchase. Thus, in the context of our characterization of the DOD procurement contracts as purchases of R&D services, the same allocation of patent rights that applies by virtue of the Bayh-Dole Act and related legislative instruments and implementing regulations would not result in the measures in question being subsidies.[1614]

8.466. Because the role of the allocation of intellectual property rights in our analysis of whether a measure constitutes a subsidy depends upon the particular context, we consider that, in ascertaining whether access to the subsidy, is explicitly limited, we cannot treat the allocation of intellectual property rights on terms more favourable than available in the market as being the relevant "subsidy" in and of itself. We therefore disagree with the premise on which the United States' argument is based, namely, that the "subsidy" at issue is the "same subsidy" that the Appellate Body addressed in the context of the European Communities' challenge to the allocation of patent rights under all NASA procurement contracts and DOD assistance instruments with Boeing as a "self-standing subsidy". While our benefit determinations in respect of the DOD assistance instruments do turn in certain respects on the allocation of patent rights set forth in the Bayh-Dole regime, this is not because of the Bayh-Dole regime itself, but because, *in the context of the DOD assistance instruments*, a focus on the allocation of patent rights is appropriate. This is not necessarily the case for every U.S. Government R&D procurement contract, agreement or grant, as is demonstrated by our conclusion that a focus on the same allocation of patent rights in

[1612] In this respect, we interpret the Appellate Body's statement, at para. 730 of its report, that any findings it makes in connection with the specificity of the allocation of patent rights "do not traverse the Panel's findings of specificity relating to the payments and other support provided under the NASA USDOD contracts and agreements" particularly in light of footnote 1534, as a statement regarding the scope of the appeal.

[1613] See also Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, paras. 377 and 378.

[1614] See paras. 8.420 through 8.426 above.

the context of the DOD procurement contracts is inadequate to demonstrate that those measures, assuming they are financial contributions, confer a benefit.

8.467. This being so, we consider that the appropriate legislative and regulatory framework for assessing whether the payments (and any access to DOD facilities, equipment or employees) provided to Boeing through DOD assistance instruments, are specific within the meaning of Article 2 of the SCM Agreement, involves DOD as the granting authority, and the RDT&E program elements which fund the DOD assistance instruments. Given that the focus of R&D performed under the RDT&E program elements is narrowly directed toward research to meet current and future military needs in relation to the development of specific weapon systems, and that even those few RDT&E program elements that have explicitly dual-use objectives concern development of technologies with military and civil applications that are narrowly-focused, we conclude that the subsidies provided to Boeing through the post-2006 DOD assistance instruments funded under the RDT&E program elements are specific within the meaning of Article 2.1(a) of the SCM Agreement.

8.468. In light of this finding, we do not consider it necessary to address the European Union's argument under Article 2.1(c).

8.469. **Therefore, the Panel finds that subsidies provided to Boeing through the post-2006 DOD assistance instruments are specific within the meaning of Article 2.1(a) of the SCM Agreement**.

8.470. Finally, we note that the European Union also argues that the subsidies provided to Boeing through the post-2006 DOD assistance instruments are specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because, in Section 10 of this Report, we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.3.6 Amount of the subsidy and amount of the financial contribution

8.2.3.6.1 Amount of the subsidy provided to Boeing through the DOD assistance instruments

8.471. In the previous Section, we find that payments and access to DOD facilities, equipment, and employees, provided to Boeing through the post-2006 DOD assistance instruments funded under the relevant RDT&E program elements are specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.

8.472. In this Section, we address the parties' arguments regarding the amount of the subsidy provided to Boeing by the post-2006 DOD assistance instruments. The amount of the subsidy refers to the amount or magnitude of the benefit conferred by the financial contribution; i.e. the quantification of the advantage conferred on Boeing by the financial contribution, compared to what Boeing would have obtained in a market transaction.[1615]

8.473. The European Union does not propose a specific estimate of the amount of the benefit conferred by the payments and provision of access to DOD facilities, equipment, and employees under the DOD assistance instruments funded through the relevant RDT&E program elements. Rather, as with the NASA procurement contracts, cooperative agreements, and Space Act Agreements, the European Union argues that the amount of the benefit is a *multiple* of the financial contribution. Specifically, the European Union argues that, given the Appellate Body's "focus on the allocation of IP rights", the value of the benefit conferred on Boeing by the DOD assistance instruments is based on the value of the technology developed from those aeronautics R&D instruments.[1616]

[1615] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 690 and 691 (explaining that the original panel, in seeking to estimate the amount of funds transferred to Boeing under the relevant NASA procurement contracts, as well as the value of Boeing's access to NASA facilities, equipment, and employees under the NASA instruments, had been estimating the amount of the "financial contribution", rather than the amount of the "benefit").

[1616] European Union's first written submission, para. 385.

8.474. To recall, in Section 8.2.3.4.2, the Panel finds that the payments and provision of access to DOD facilities, equipment, and employees to Boeing through the post-2006 DOD assistance instruments (those that were modified by the DOD-Boeing Patent Licence Agreement, as well as those that were not so modified), funded under the relevant RDT&E program elements, confer a benefit on Boeing because the allocation of intellectual property rights and related licence rights under those instruments is more favourable to Boeing as commissioned party than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel which evidence prevailing market practices for collaborative R&D arrangements. Accordingly, the amount of the benefit (and thus, the subsidy) must logically correspond to the value of the difference between the terms regarding the allocation of intellectual property rights and related licence rights on which the financial contributions were provided to Boeing under the DOD assistance instruments, and the terms regarding the allocation of intellectual property rights and related licence rights under which the financial contributions would have been provided in a market-based collaborative R&D arrangement.

8.475. We address above the European Union's argument that the value of the benefit conferred on Boeing by the NASA aeronautics R&D subsidies is a multiple of the financial contributions provided by those instruments.[1617] In doing so, we conclude that the European Union's approach is not based on a correct legal understanding of what constitutes the benefit conferred by the aeronautics R&D subsidies, and conflates the concept of the "benefit" conferred by the financial contribution with the "effects" of a subsidy.[1618] Consistent with its arguments on this issue in the context of the NASA aeronautics R&D subsidies, the European Union cites as support for its approach statements by the Appellate Body in the original proceeding.[1619] However, these statements were made in the context of the Appellate Body's adverse effects findings, not its benefit findings. We reject the European Union's arguments that the value of the benefit conferred by the DOD assistance instruments is a multiple of the financial contribution for the same reasons that we reject this argument in the context of the NASA aeronautics R&D subsidies.[1620]

8.476. There is insufficient evidence on the record as to the amount of the subsidy in the sense of the advantage conferred on Boeing resulting from the difference between the terms regarding the allocation of intellectual property rights and related licence rights on which financial contributions were provided to Boeing under the post-2006 DOD assistance instruments at issue and the terms regarding the allocation of intellectual property rights and related licence rights on which financial contributions would have been provided to Boeing in a market-based collaborative R&D arrangement.

8.477. In light of the foregoing, we are unable to accept the European Union's arguments regarding the amount of the benefit provided to Boeing through the post-2006 DOD assistance instruments under the relevant aeronautics R&D programmes. **We therefore find that there is insufficient evidence on the record as to the amount of the subsidy**.

8.2.3.6.2 Amount of the financial contribution provided to Boeing through the DOD assistance instruments

8.478. The European Union estimates that the total amount of the financial contribution, comprising all post-2006 payments as well as the value of access to DOD facilities, equipment, and employees, under both procurement contracts and assistance instruments, is USD 2.895 billion between 2007 and 2012.[1621] The United States submits evidence valuing the payments received by Boeing under the DOD assistance instruments at **[***]** between 2007 and 2012.[1622] With respect

[1617] See paras. 8.238 to 8.240 above.
[1618] See paras. 8.238 to 8.240 above.
[1619] See European Union's first written submission, para. 385 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 945, quoting Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1760: "by their nature, the aeronautics R&D subsidies 'multiply the benefit from a given expenditure'").
[1620] See paras. 8.238 to 8.240 above.
[1621] European Union's first written submission, para. 371. The European Union also provides an updated estimate of USD 4.513 billion between 2007 and 2014. (See Subsidies to Boeing's LCA Division (2013-2014 Update) (Exhibit EU-1451), p. 3).
[1622] Funds Obligated to Air Force Agreements with Boeing for FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); Funds obligated to other DOD entities' contracts and agreements with Boeing, FY 2007-FY 2012 (revised 1 December 2014), (Exhibit USA-157) (BCI); and Funds obligated to Navy contracts and agreements with Boeing, FY 2007-FY 2012, (Exhibit USA-273) (BCI). This figure includes payments

to access to DOD facilities, equipment, and employees, the United States argues that only one agreement provided for access to facilities, the value of which is negligible.[1623]

8.2.3.6.2.1 Main arguments of the parties

8.479. In arriving at its estimate of the amount of the financial contribution, the European Union takes as a starting point the full amount of the annual budget appropriation for each of the challenged DOD RDT&E program elements. To recall, these are the program elements identified by the European Union under which so-called "dual-use" research that allegedly contributed to Boeing's LCA division was conducted. These program elements can be divided into two categories; S&T/general aircraft program elements, and systems acquisition/military aircraft program elements.[1624] The European Union's approach to the valuation of the amount of the financial contributions provided by the relevant RDT&E program elements varies depending on the category of program element.

8.480. For the S&T/general aircraft program elements, after having identified the total amounts of annual DOD funding for the relevant program element, the European Union allocates to Boeing a portion of that total based on the percentage of Boeing's share of the market for U.S. military products.[1625]

8.481. For the systems acquisition/military aircraft program elements, the European Union first determines the amount of total annual funding for each program element that was provided to Boeing, and then determines, based on the opinion of its expert Mr Rumpf, the percentage of funding received under each such program element that can be deemed to be associated with so-called "dual-use" R&D.[1626]

8.482. This methodology results in a figure of USD 5.275 billion between 2007 and 2012.[1627] The European Union notes, however, that this figure represents DOD spending on "dual-use" technology; i.e. technology with both military and civil applications, and that it is appropriate to consider only the portion related to civil application as constituting the financial contribution to Boeing. The European Union therefore allocates to Boeing a percentage of this total figure, based on the percentage of Boeing's total revenue represented by Boeing's LCA division.[1628] The resulting figure, which the European Union treats as its estimate of the total annual amount of the financial contribution provided to Boeing by DOD, is USD 2.895 billion between 2007 and 2012, and USD 4.513 billion between 2007 and 2014.

8.483. The European Union acknowledges that this "top-down" methodology for calculating the amount of DOD's financial contribution to Boeing does not distinguish between procurement contracts and assistance instruments, but argues that this is irrelevant because the original panel's distinction between these types of instruments was rendered moot by the Appellate Body.[1629] The European Union considers that the United States' evidence of the amounts paid to Boeing under specific assistance instruments and procurement contracts is unreliable, pointing to a U.S. Government Accountability Office report criticising DOD's financial management systems.[1630]

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received under the Long Range Strike Bomber program element, for which we have previously found there is no measures in existence within the scope of the European Union's claims regarding that RDT&E program element. (See para. 7.216 above).

[1623] This was assistance instrument FA8650-08-2-3834, which provided access to NASA Langley's V/STOL wind tunnel. The United States notes that the assistance instrument does not place a value on this access but asserts that Boeing had limited access, the value of which would be unlikely to modify the total value of DOD contributions appreciably. (See United States' first written submission, para. 277; and Air Force Agreement FA8650-08-2-3834, SOW, (Exhibit USA-110) (HSBI), p. 1).

[1624] See Section 8.2.3.2.3.

[1625] Rumpf Report, (Exhibit EU-23). This is calculated using data from Boeing's annual financial reports, and industry-wide data compiled by the Aerospace Industries Association.

[1626] Rumpf Report, (Exhibit EU-23), pp 9-16.

[1627] European Union's first written submission, para. 371.

[1628] European Union's first written submission, para. 371; and DOD Subsidies to Boeing's LCA Division (Exhibit EU-37).

[1629] European Union's second written submission, para. 469 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 1298).

[1630] European Union's second written submission, para. 472 (citing U.S. Government Accountability Office, "DOD Financial Management: Improved Controls, Processes and Systems Are Needed for Accurate and Reliable Financial Information", No. GAO-11-933T, 23 September 2011, (Exhibit EU-1102)).

Further, the European Union argues that the value of the financial contribution is not limited to the value of payments made to Boeing, and thus the United States' estimate impermissibly excludes the value of other forms of support that DOD has provided.[1631]

8.484. The United States submits evidence of the payments made under the assistance instruments funded by the challenged RDT&E program elements since 2006.[1632] The United States confirms that this evidence is based on reporting by DOD agencies responsible for overseeing the expenditure of funds under the challenged program elements.[1633] The United States also argues that, while the European Union criticises the United States' figures for being based on allegedly unreliable DOD financial management systems, the European Union's figures, which are based on DOD budget data for each program element, are also the product of DOD's financial management systems.[1634]

8.485. The United States considers that the European Union's "top-down" methodology for calculating DOD's financial contribution to Boeing is based on a number of impermissible assumptions. First, the European Union's methodology assumes that the amount of funding received by Boeing under a particular program element is in proportion to Boeing's share of the military aircraft market.[1635] Further, there is no basis for the European Union's assumption that the percentage of so-called "dual-use" funding received by Boeing that is "attributable" to LCA has any relationship to the percentage of total Boeing revenues that is represented by Boeing's LCA sales.[1636] Finally, the European Union's methodology fails to distinguish between payments received by Boeing under DOD procurement contracts and those received under DOD assistance instruments.[1637] The United States concludes that its evidence is the more probative as to the value of the financial contributions.[1638]

8.2.3.6.2.2 Evaluation by the Panel

8.486. The parties' estimates of the amount of the financial contribution provided to Boeing by DOD through the assistance instruments differ significantly because they are based on different calculation methodologies.

8.487. Like its estimate of the financial contribution provided by the NASA aeronautics R&D subsidies, the European Union adopts a "top-down" methodology, based on estimating the proportion of the total annual budgets of the relevant DOD RDT&E program elements through which DOD's procurement contracts and assistance instruments with Boeing are funded that can be allocated to Boeing. The United States adopts a "bottom-up" methodology, which estimates the value of payments made to Boeing under the individual DOD assistance instruments which, since 2006, received funding under the challenged RDT&E program elements.

8.488. We recall that in the original proceeding, the European Communities estimated the amount of the financial contribution represented by the DOD aeronautics R&D measures as USD 2.4 billion between 1991 and 2006, using broadly the same methodology for estimating the amount of the financial contribution that the European Union uses in this proceeding.[1639] The original panel rejected the European Communities' estimate because it did not distinguish between payments received by Boeing under procurement contracts, and those received under assistance instruments.[1640] This was significant because the panel had previously found that, while the DOD

[1631] European Union's second written submission, para. 471.
[1632] Funds obligated to Air Force Agreements with Boeing, FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); Funds obligated to other DOD entities' contracts and agreements with Boeing, FY 2007-FY 2012 (revised 1 December 2014), (Exhibit USA-157) (BCI); and Funds obligated to Navy contracts and agreements with Boeing, FY 2007-FY 2012, (Exhibit USA-273) (BCI).
[1633] United States' second written submission, para. 261.
[1634] United States' second written submission, para. 260.
[1635] United States' first written submission, para. 299; second written submission, para. 260.
[1636] United States' first written submission, para. 300.
[1637] United States' first written submission, para. 301.
[1638] United States' second written submission, para. 260.
[1639] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1199-7.1204.
[1640] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1206.

assistance instruments constituted a specific subsidy to Boeing, the DOD procurement contracts did not.[1641]

8.489. We are similarly unable to accept the European Union's estimate of the amount of the financial contribution for the DOD aeronautics R&D subsidies in this proceeding. The European Union's estimate suffers from the same legal deficiencies as its "top-down" estimate of the financial contribution element of the NASA aeronautics R&D subsidies.[1642] First, it does not correspond to the nature of the financial contributions as found by the Panel; i.e. as payments and the provision of access to DOD facilities (and where applicable, DOD equipment and employees) provided *to Boeing through assistance instruments* funded under the relevant RDT&E program elements. Additionally, there is no rational basis to justify the main assumptions underpinning the European Union's methodology; namely, that the portion of the total annual budget for each RDT&E program element received by Boeing corresponds to Boeing's share of the U.S. military aviation market, or that the share of DOD funding of "dual-use" R&D that is applicable to LCA corresponds to the percentage of Boeing's total revenues represented by Boeing's LCA sales. These deficiencies are compounded by the fact that it is impossible under the European Union's methodology to distinguish between payments and access provided under procurement contracts, and payments and access provided under assistance instruments. We have previously determined that only payments and access provided under assistance instruments involve specific subsidies to Boeing. It would therefore be improper to adopt an estimate of the payments and access to facilities (and equipment and employees) provided to Boeing under DOD assistance instruments that includes the value of payments and access to facilities (and equipment and employees) provided to Boeing under DOD procurement contracts. We do not consider, therefore, that the European Union's methodology for estimating the amount of the financial contributions provided to Boeing through the DOD aeronautics R&D subsidies is capable of yielding an estimate that is probative of the value of those financial contributions.

8.490. The United States' estimate of the value of the financial contributions provided to Boeing by the DOD aeronautics R&D subsidies is based on evidence submitted originally in response to the Panel's request under Article 13 DSU. Question 23 of the Panel's request to the United States sought:

> {A} list describing all technical data developed by Boeing, in whole or in part in the course of work performed, or with the use of government facilities, equipment, property, funds, or services of government employees, under each of the program elements listed in question 26, and any additional program elements identified in response to question 25, from FY 2006 – present … .[1643]

8.491. In response, the United States submitted a list of all DOD assistance agreements under which Boeing received payments or access to facilities, equipment or employees under the challenged RDT&E program elements.[1644] The United States later submitted, for those assistance instruments which received payments after 2006, a list of the specific payments received.[1645] This list covers payments received by Boeing under the three categories of assistance instruments that we find involve specific subsidies to Boeing:

a. pre-2007 DOD assistance instruments funded under the original challenged RDT&E program elements that received payments from the relevant program elements in the post-2006 period[1646];

[1641] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1206.

[1642] See paras. 8.272 and 8.273 above.

[1643] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 23, para. 76. The United States provided a "List of DOD Cooperative Agreements, TIAs and OTAs" as Exhibit US-13-6.

[1644] List of DOD Cooperative Agreements, TIAs and OTAs, (Exhibit US-13-6).

[1645] Funds Obligated to Air Force Agreements with Boeing for FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); Funds obligated to other DOD entities' contracts and agreements with Boeing, FY 2007-FY 2012 (revised 1 December 2014), (Exhibit USA-157) (BCI); and Funds obligated to Navy contracts and agreements with Boeing, FY 2007-FY 2012 (Exhibit USA-273) (BCI).

[1646] There is some discrepancy in the United States' submissions as to the number of DOD assistance instruments funded by the "additional" challenged RDT&E program elements. A review of the United States' evidence indicates that only one such program element which has been found to be within the scope of the

b. post-2006 assistance instruments funded under the original RDT&E program elements that received payments from the relevant program elements in the post-2006 period[1647];

c. post-2006 assistance instruments funded under the "additional" RDT&E program elements that the Panel has ruled are within the scope of this proceeding and which received payments from those program elements in the post-2006 period.[1648]

8.492. According to the United States' evidence, the total amount of post-2006 payments received under the aforementioned three categories of assistance instruments is approximately **[***]**.[1649]

8.493. As regards the value of access to DOD facilities, and where applicable, DOD equipment and employees, provided to Boeing through the DOD assistance instruments, the United States argues that only one assistance instrument provided such access. This was Air Force Agreement FA8650-08-2-3834, which provided Boeing with access to the NASA's Langley 14x22 foot V/STOL wind tunnel for a "defined series of tests".[1650] The United States argues that, given the relatively limited nature of Boeing's access to the wind tunnel facilities, it is "unlikely to modify the total value of DOD's contributions appreciably".[1651] The European Union did not specifically address this issue, and there is no indication in the United States' evidence with respect to Air Force Agreement FA8650-08-2-3834 as to the value of the temporary access provided to the NASA wind tunnel facility.[1652] We note, however, that the United States' evidence with respect to the NASA aeronautics R&D subsidies estimates the value of access to a different wind tunnel model at approximately **[***]**.[1653] We consider it reasonable for present purposes to treat this figure as the best available evidence before us as to the value of access provided to the NASA wind tunnel facility under Air Force Agreement FA8650-08-2-3834.

8.494. The European Union argues that the United States' data as to the value of payments made under individual DOD instruments is unreliable because DOD's financial management systems

proceeding, the Materials and Biological Technology (PE 0602715E) program element funded any assistance instruments. These were: HR011-06-2-0008, FA8650-07-2-7716 and HR0011-10-2-0001. (See Funds obligated to Air Force Agreements with Boeing, FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); and Funds obligated to other DOD entities' contracts and agreements with Boeing, FY 2007-FY 2012 (revised 1 December 2014), (Exhibit USA-157) (BCI)). None of the remaining "additional" RDT&E program elements funded any assistance instruments.

[1647] These are the following assistance instruments: N00173-08-2-C009 (this instrument was funded by an "unknown PE" but the United States nonetheless includes it in an "abundance of caution", (see United States' first written submission, para. 274); FA8650-08-2-3834; and FA8650-11-2-2834. (See United States' first written submission, para. 271; second written submission, para. 258; Funds obligated to Air Force Agreements with Boeing, FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); and Funds obligated to Navy contracts and Agreements with Boeing, FY 2007-FY 2012, (Exhibit USA-273) (BCI)).

[1648] These are the following assistance instruments: F49620-00-2-0384, F33615-03-2-2200, F3315-03-2-5202, FA8650-04-2-3449, FA8650-04-2-5000, and FA8650-2-3503. (See United States' first written submission, para. 278; and Funds obligated to Air Force Agreements with Boeing, FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI)).

[1649] Funds obligated to Air Force Agreements with Boeing, FY 2007-FY 2012, by program element, (Exhibit USA-108) (BCI); Funds obligated to other DOD entities' contracts and agreements with Boeing, FY 2007-FY 2012 (revised 1 December 2014), (Exhibit USA-157) (BCI); and Funds obligated to Navy contracts and agreements with Boeing, FY 2007-FY 2012 (Exhibit USA-273) (BCI). Unlike in the original proceeding, the United States' evidence includes post-2006 payments made under both procurement contracts and assistance instruments funded by all of the challenged RDT&E program elements, including the systems acquisition/military aircraft program elements. This figure of USD 39.97 million represents USD 44.37 million less the USD 4.4 million in pre-2011 payments made under the Long Range Strike Bomber program element which we have previously ruled is outside the scope of the European Union's claims regarding that program element. (See para. 7.216 above).

[1650] United States' first written submission, para. 277; Air Force Agreement FA8650-08-2-3834, SOW, (Exhibit USA-110) (HSBI), p. 1.

[1651] United States' first written submission, para. 277.

[1652] Air Force Agreement FA8650-08-2-3834, SOW, (Exhibit USA-110) (HSBI), p. 1.

[1653] Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI). This exhibit also values access to different wind tunnel facilities, provided under a different procurement contract, at USD 2,000, but this figure represents only the cost of sending the wind tunnel model to Boeing. (See Equipment provided under NASA contracts and agreements (revised 1 December 2014), (Exhibit USA-271) (BCI), fn 3).

have been criticised by the U.S Government Accountability Office.[1654] We do not consider that a review that is generally critical of DOD's financial management systems necessarily impugns the specific reports that the United States received from the DOD agencies responsible for overseeing the expenditure of funds under the challenged program elements, which is the basis for the United States' evidence.[1655] To the extent that it does, the European Union's methodology, which relies on DOD's reported RDT&E program element budget data, would be equally affected. In any case, we do not consider that the European Union's generalized criticism of DOD's financial management systems justifies rejecting the evidence on which the United States' estimate is based.

8.495. Finally, we note that in response to a Panel question seeking information regarding the magnitude of difference in Airbus and Boeing pricing in sales campaigns, the European Union submitted an update for 2013 and 2014 of the amounts of the financial contribution provided by the U.S. subsidies that are alleged to cause adverse effects through a price causal mechanism. This information includes estimates of the amounts of the financial contributions provided through the DOD aeronautics R&D measures for 2013 and 2014, based on the European Union's "top-down" methodology.[1656] There is no corresponding updated information regarding the amounts of the financial contributions provided through the DOD assistance instruments for 2013 and 2014 based on the United States' methodology. The absence of an estimate for 2013 and 2014 based on the United States' methodology does not, however, mean that the Panel considers it appropriate to adopt the European Union's 2013 and 2014 figures as the best available evidence of the amounts of the financial contributions provided to Boeing through the DOD assistance instruments for those years. This is because the legal deficiencies in the European Union's methodology are too significant.[1657]

8.496. **We find that, to the extent that the amount of the financial contribution provided to Boeing through the DOD aeronautics R&D subsidies is relevant to the Panel's assessment of whether the United States' has withdrawn the subsidy or taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8, the United States' estimate of approximately [***] is a more credible estimate of the amount of the financial contribution provided to Boeing through the DOD assistance instruments funded under the relevant RDT&E program elements between 2007 and 2012.**

8.2.3.7 Conclusion

8.497. In light of our findings above regarding financial contribution, benefit, and specificity, we conclude that:

a. The European Union has established that certain transactions between DOD and Boeing pursuant to post-2006 DOD assistance instruments involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement. While we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent that it is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy or taken appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement, we find the United States' estimate of the amount of

[1654] European Union's second written submission, para. 472 (citing U.S. Government Accountability Office, "DOD Financial Management: Improved Controls, Processes and Systems Are Needed for Accurate and Reliable Financial Information", No. GAO-11-933T, 23 September 2011, (Exhibit EU-1102)).

[1655] United States' second written submission para. 261.

[1656] European Union's response to Panel question No. 164, para. 114; and Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), pp. 2 and 23-26. The United States did not submit an update of its estimates of the amount of the financial contribution provided to Boeing through the DOD assistance instruments in its comments on the European Union's responses to the third set of Panel questions.

[1657] The European Union's estimates also include allocations from RDT&E program elements for which the Panel has found there are no measures in existence, or the measures are outside the scope of this proceeding. This is the case with respect to the AWACS (PE 0207417F) program element, the KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element, the Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element, the Technology Transfer (PE 0604317F) program element, the IP ManTech (PE 0708011S) program element, and the Long Range Strike Bomber (PE 0604015F) program element. (See Section 7.3.3.3).

the financial contribution provided through the DOD assistance instruments of **[***]** between 2007 and 2012 to be the most credible estimate.

b. The European Union has not established that certain transactions between DOD and Boeing pursuant to DOD procurement contracts involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, on the grounds that, assuming *arguendo* that these measures were to involve a financial contribution within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, they do not confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.

8.2.4 FAA aeronautics R&D measure

8.2.4.1 Introduction

8.498. In this Section of the Report, we evaluate the European Union's claim that the FAA aeronautics R&D measure is a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement and that, by granting or maintaining this subsidy after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement. The Panel concluded in Section 7.4 above that Boeing's participation in the FAA CLEEN Program pursuant to the Boeing CLEEN Agreement constitutes a measure taken to comply within the scope of this proceeding.

8.499. Our analysis proceeds as follows:

a. In Section 8.2.4.2, we clarify aspects of the Boeing CLEEN Agreement identified by the European Union as a specific subsidy which it alleges the United States grants or maintains after the end of the implementation period and provide relevant background information.

b. We evaluate whether the Boeing CLEEN Agreement challenged by the European Union involves a financial contribution (Section 8.2.4.3) which confers a benefit (Section 8.2.4.4) within the meaning of Article 1 of the SCM Agreement.

c. To the extent that we find that the Boeing CLEEN Agreement involves a financial contribution that confers a benefit, we evaluate in Section 8.2.4.5 whether any such subsidy is specific within the meaning of Article 2 of the SCM Agreement.

d. We address the question of the amount of the subsidy and the amount of the financial contribution in Section 8.2.4.6.1.

8.2.4.2 The measure at issue

8.2.4.2.1 The European Union's panel request

8.500. In its panel request in this proceeding, the European Union alleges that the FAA, working in collaboration with NASA under the FAA Continuous Lower Energy, Emissions and Noise (CLEEN) Program, maintains subsidies that presently benefit U.S. LCA producers by: (a) "provid{ing} Boeing with funding and access to government facilities, equipment, and employees for R&D applicable to the development, design, and production of LCA"; or (b) "providing Boeing with royalty-free use of the technologies developed with such funding and support, or use of such technologies on preferential terms".[1658] The European Union's panel request states that "{s}uch R&D support is authorized by 49 U.S.C. §§ 44501-44517, 48102, and periodic reauthorization legislation".[1659]

[1658] European Union's request for the establishment of a panel, para. 15.
[1659] European Union's request for the establishment of a panel, para. 15.

8.501. In the European Union's first written submission, its financial contribution arguments refer to the proper characterization of the Boeing CLEEN Agreement, an Other Transaction Agreement which governs Boeing's work under the FAA CLEEN Program.[1660]

8.502. In response to a question from the Panel, the European Union explained that its challenge is directed at the Boeing CLEEN Agreement, as this "is the only contract or agreement with Boeing under the FAA CLEEN Program".[1661] The European Union indicates that its challenge includes "CLEEN Program funding for Boeing's ecoDemonstrator" which, it submits, funded a series of test flights pursuant to the Boeing CLEEN Agreement.[1662]

8.503. Taking into account the European Union's panel request and its subsequent clarification, we consider that the European Union's challenge is directed at the Boeing CLEEN Agreement, in particular, the "funding and access to government facilities, equipment, and employees" provided directly to Boeing pursuant to the Boeing CLEEN Agreement. The funding and access is limited to those payments made, and facilities, equipment, and employees provided, to Boeing and not funding or support allocated to other CLEEN participants.

8.2.4.2.2 The FAA CLEEN Program and the Boeing CLEEN Agreement

8.504. The FAA inaugurated the FAA CLEEN Program in early 2008 in furtherance of the National Aeronautics Research and Development Plan, with the objective to develop aeronautics R&D programmes focused on inter-agency environmental and performance goals for the "N+1 generation" of LCA designed to enter service in the 2015 to 2018 time-frame, focusing on the most well-developed, near-term commercializable technologies.[1663] The FAA created the FAA CLEEN Program, while NASA created the Environmentally Responsible Aviation (ERA) Project under its Integrated Systems Research Program, to "guid{e} coordinated efforts to bring to maturity new technologies to reduce fuel burn, emissions, and noise".[1664] In 2009, the FAA, whose R&D activities are focused on "civil aviation research and development", solicited research proposals for the FAA CLEEN Program from industry.[1665] In June 2010, the FAA entered into five-year R&D agreements with Boeing and four propulsion-focused companies on a 50% cost-sharing basis: Boeing, General Electric, Honeywell, Pratt & Whitney, and Rolls-Royce North America. The total FAA contribution under all of the agreements was set at USD 125 million.[1666]

8.505. Boeing's work under the FAA CLEEN Program is governed by the CLEEN Other Transaction Agreement DTFAWA-10-C-0030 (the Boeing CLEEN Agreement), which entered into effect on 22 June 2010.[1667] Under this agreement, the FAA maintains the authority to determine the work that will be undertaken[1668], while Boeing manages the project, conducts the work and prepares reports on that work for the FAA.[1669] Specifically, Boeing is responsible for the integrated management of the FAA CLEEN Program as well as two categories of R&D activities[1670]:

[1660] European Union's first written submission, para. 218; and Boeing CLEEN Agreement, (Exhibit EU-17).

[1661] European Union's response to Panel question No. 11, para. 77.

[1662] European Union's response to Panel question No. 11, para. 78.

[1663] R. Jefferies, FAA, "CLEEN (Continuous Lower Energy, Emissions and Noise) Program Technologies Development" Presentation at the NASA ERA Bidder's Conference, 19 February 2010, (Exhibit EU-253), pp. 5, 6 and 8; Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (December 2011), (Exhibit EU-254), pp. 27-30 and 50-53; and J. Wolfe, NASA, "Aeronautics Research Mission Directorate Update with Emphasis on Integrated Systems Research", Presentation at the 48th AIAA Aerospace Sciences Meeting, 4 January 2010, (Exhibit EU-255), p. 10.

[1664] See para. 7.280 above and Executive Office of the President, National Science and Technology Council, *National Aeronautics Research and Development Plan*, (2 February 2010), (Exhibit EU-16), p. 11.

[1665] CLEEN Solicitation, (Exhibit EU-20); and R. Jefferies, FAA, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program Technologies Development", Presentation, 27 October 2010, (Exhibit EU-256), p. 6.

[1666] FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 24 June 2010, (Exhibit EU-257).

[1667] Boeing CLEEN Agreement, (Exhibit EU-17), p. 1. Note that the period of performance commenced to run on 21 June 2010.

[1668] Boeing CLEEN Agreement, (Exhibit EU-17), parts B.3 and F.2.

[1669] Boeing CLEEN Agreement, (Exhibit EU-17), parts C and E.3.

[1670] Boeing CLEEN Agreement, (Exhibit EU-17), part I, sections C.1.2 and C.3.

a. technology maturation – research to mature specified technologies through to the prototype development stage on three research projects: wing adaptive trailing edges, ceramic matrix composite acoustic exhaust nozzles, and the use of alternative fuels; and

b. flight testing and assessment, including flight testing of a broad suite of technologies through Boeing's ecoDemonstrator programme.

8.2.4.3 Whether there is a financial contribution

8.2.4.3.1 Main arguments of the parties and third parties

8.506. The European Union argues that the Boeing CLEEN Agreement has the same characteristics as the NASA procurement contracts and DOD assistance instruments before the original panel, and that the Panel should therefore conclude that the payments and access to government facilities, equipment, and employees provided to Boeing under the Boeing CLEEN Agreement are similarly financial contributions under Article 1.1(a)(1) of the SCM Agreement.

8.507. The European Union argues that the Boeing CLEEN Agreement shares many of the same characteristics that led the Appellate Body to conclude that the NASA procurement contracts and DOD assistance instruments before the original panel constituted transactions that were "akin to a species of joint venture", which were analogous to a type of equity infusion, and therefore financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement. Specifically, the European Union considers that payments under the Boeing CLEEN Agreement qualify as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i) while the provision of access to facilities, equipment, and employees qualifies as a government provision of goods or services other than general infrastructure under Article 1.1(a)(1)(iii).[1671]

8.508. The European Union contends that, like the NASA procurement contracts and DOD assistance instruments before the original panel, the Boeing CLEEN Agreement involves payments by the FAA as well as the commitment of non-monetary resources. In addition, the European Union argues that there is an element of collaboration in determining what research is to be done, that Boeing develops valuable intellectual property rights, including patents, data rights, and Boeing-owned trade secrets, and that the FAA and Boeing share the fruits of their research on the basis of patent and data rights provided under the Agreement.[1672] The European Union further contends that the transactions in question possess the same features that led the Appellate Body to conclude that the NASA procurement contracts and DOD assistance instruments before the original panel were analogous to equity infusions. These include that funding is provided in expectation of some kind of return in the form of scientific and technical information, discoveries, and data expected to result from the research performed; there is no certainty that research will be successful; the funders' risks are limited to the amount of money they commit and the opportunity cost of other support they provide; and the FAA as the funder contributes to the project by providing access to facilities, equipment, and employees, as some equity investors would also do.[1673]

8.509. The European Union also argues, in the *alternative*, that "the transfer to Boeing of patent and other intellectual property rights in the technologies and data developed under the FAA CLEEN Program *additionally* constitutes a provision of 'goods … other than general infrastructure' within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement".[1674] As in the case of NASA aeronautics R&D measures, the European Union requests the Panel not to consider this alternative conception of the financial contribution "unless it rejects the European Union's primary contentions with respect to the characterization of the challenged aeronautics R&D measures".[1675]

8.510. The United States does not dispute that the Boeing CLEEN Agreement provides Boeing with funding in the form of payments.[1676] The United States disagrees that Boeing is provided with

[1671] European Union's first written submission, para. 218.
[1672] European Union's first written submission, para. 218.
[1673] European Union's first written submission, para. 218; second written submission, para. 338.
[1674] European Union's first written submission, para. 219. (emphasis added)
[1675] European Union's response to Panel question No. 32, para. 197.
[1676] United States' first written submission, para. 481 ("{t}he {European Union} asserts that the CLEEN Program provides a financial contribution to Boeing in the form of (i) funding; (ii) access to government

access to government facilities, equipment or employees under the Boeing CLEEN Agreement. The United States argues that contractual language in the Boeing CLEEN Agreement referring, for instance, to USD 1,610,150.00 as "Facilities and Equipment", does not indicate that Boeing was provided facilities or equipment of this value by FAA, but instead, refers to a "type of funding available in FAA's system (i.e., Operations, R&D, F&E, etc.)".[1677] In addition, the United States argues that the fact that Boeing may have been granted access to *NASA* test facilities pursuant to work under the FAA CLEEN Program is irrelevant to the question of whether the Boeing CLEEN Agreement provided facilities to Boeing.[1678] The United States considers that Boeing's participation in a "CLEEN kick off meeting" or Boeing's participation in semi-annual government-led consortium meetings to discuss CLEEN research does not constitute access to government employees.[1679]

8.511. Finally, the United States argues that the European Union has failed to establish *prima facie* that intellectual property rights accruing to Boeing pursuant to activities conducted under the Boeing CLEEN Agreement constitute a financial contribution. As a factual matter, the United States argues that there is no transfer of intellectual property rights to Boeing under U.S. law, as the patent is the property of the person who made the invention, and FAA does not transfer any patent to Boeing. Moreover, intellectual property is not a "good" within the meaning of the covered agreements and therefore cannot be a financial contribution in the form of a government provision of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[1680]

8.512. Certain of the third parties (Brazil, Canada, Korea**,** and Japan) make arguments as to the determination of the existence of a financial contribution within the meaning of Article 1.1(a)(1) of the SCM Agreement. These arguments are summarized in paragraphs 8.96-8.99 above.

8.2.4.3.2 Evaluation by the Panel

8.513. The question before us is whether payments to Boeing and the alleged provision to Boeing of access to government facilities, equipment, and employees pursuant to the Boeing CLEEN Agreement constitutes a financial contribution within the meaning of Article 1 of the SCM Agreement. We recall our discussion in paragraphs 8.106 to 8.111 above of the Appellate Body's characterization of the NASA procurement contracts and DOD assistance instruments in the original proceeding as involving financial contributions.

8.514. The United States does not dispute that Boeing receives payments under the Boeing CLEEN Agreement. However, the United States disagrees that under this Agreement the FAA provides Boeing with access to government facilities, equipment or employees.

8.515. We note that, much like the transactions pursuant to the NASA procurement contracts and DOD assistance instruments in the original proceeding, both parties under the Boeing CLEEN Agreement contribute to the arrangement. Boeing may make either cash or non-cash contributions, including contributions of items such as equipment, facilities, labour, and office space.[1681] In addition, both parties share the output of their research. Boeing has title to inventions made by Boeing employees (and thus the right to ownership of the patents in respect of such inventions) while the U.S. Government receives a nonexclusive, royalty-free license to patent rights for inventions for government use.[1682] Boeing may also restrict from disclosure designated "limited rights data".[1683]

8.516. Regarding whether Boeing receives access to *government facilities and equipment*, the European Union argues that the reference to "Facilities and Equipment" in the Boeing CLEEN

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facilities, equipment and employees; and (iii) the transfer of patent and intellectual property rights. However, the {European Union}'s assertions regarding categories (ii) and (iii) are wrong").

[1677] United States' first written submission, para. 482.

[1678] United States' second written submission, para. 434.

[1679] United States' second written submission, para. 432. See also United States' first written submission, para. 483; and second written submission, para. 435.

[1680] United States' first written submission, paras. 484 and 485; second written submission, para. 437.

[1681] Boeing CLEEN Agreement, (Exhibit EU-17), part I, section B.3.

[1682] Boeing CLEEN Agreement, (Exhibit EU-17), section I.1 (incorporating clause 3.5-10); and FAA Acquisition Management System (AMS), Clause 3.5-10, "Patent Rights – Ownership by Contractor" (January 2009), (Exhibit EU-1063), section (d).

[1683] Boeing CLEEN Agreement, (Exhibit EU-17), section I.3(a)(iii).

Agreement makes clear that agency policy allows for the provision of facilities and equipment.[1684] In addition, the European Union submits that Boeing was provided access to NASA test facilities for its CLEEN Program research. The United States argues that the reference to "Facilities and Equipment" as a category of funding does not indicate that Boeing was actually provided facilities or equipment of this value by FAA. Instead, this is an account that is used to "pay for research and development that improves air navigation facilities and equipment and aviation safety systems".[1685] The United States therefore objects to including any specific amounts designated as "Facilities and Equipment" in our estimate of the amount of payments made to Boeing.[1686] The United States also objects that any access to *NASA* test facilities provided to Boeing should be considered in relation to the Boeing CLEEN Agreement.

8.517. The Boeing CLEEN Agreement includes several references to the phrase "Facilities and Equipment", referring to specific funding amounts in the appended amendments, and modifications in specific years.[1687] FAA Order 2500.8B, which the European Union has submitted, states that "Facilities and Equipment" funding may be generally used for a number of purposes including, "the construction, capital lease, or lease to purchase of facilities, land, equipment development and acquisition, initial training, initial spares, and software required to establish an operational capability in connection with an air navigation, or experimental facility".[1688]

8.518. The Boeing CLEEN Agreement does not designate *specific* facilities or equipment items that are to be provided to Boeing. The European Union has not provided other evidence that indicates that *FAA* provides access to *specific* facilities or equipment to Boeing. The European Union points to obligated amounts designated for "Facilities and Equipment" in the Boeing CLEEN Agreement, and argues that Boeing was provided access to *NASA* test facilities pursuant to the Boeing CLEEN Agreement.[1689] We do not consider that the mere fact that Boeing used NASA test facilities or equipment necessarily indicates that such access to NASA facilities was provided pursuant to the Boeing CLEEN Agreement (as opposed to being provided pursuant to a NASA procurement contract, cooperative agreement or Space Act Agreement).[1690] While we consider that the reference to obligated amounts designated for "Facilities and Equipment" is not sufficient to substantiate the European Union's assertion that the Boeing CLEEN Agreement involves the provision of access to facilities and equipment to Boeing, we conclude that it is nevertheless relevant to our assessment of whether there is a financial contribution. The Boeing CLEEN Agreement indicates that specified amounts designated as "Facilities and Equipment" were allocated to Boeing in certain years. These amounts were allocated to Boeing in the same way that other funding was allocated to Boeing under the Boeing CLEEN Agreement.[1691] We therefore treat these obligated amounts designated for "Facilities and Equipment" as further payments to Boeing.

8.519. Regarding whether Boeing receives access to *government employees*, the European Union contends that it is clear that government employees assisted in defining and carrying out research under the programme. As an example of this, the European Union submits that FAA, NASA, and AFRL employees provided "feedback" to Boeing that "helped the team focus on customer needs, interests, and concerns", as part of work done on an adaptive trailing edge.[1692] It further submits that section C.4.1 of the Boeing CLEEN Agreement refers to Boeing's participation in semi-annual

[1684] European Union's second written submission, fn 515.
[1685] United States' first written submission, para. 482.
[1686] United States' first written submission, para. 482; second written submission, para. 434 and fn 603.
[1687] See Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, 0003 and 0004
[1688] U.S. Department of Transportation, Federal Aviation Administration, *Funding Criteria For Operations, Facilities and Equipment, Research, Engineering and Development, and Grants-In-Aid For Airports Accounts*, Order 2500.8B, (1 October 2006), (Exhibit EU-1059), p. 4.
[1689] The United States has not provided lists of equipment and facilities provided to Boeing under the FAA CLEEN Agreement as it did in respect of particular NASA procurement contracts, cooperative agreements, and Space Act Agreements (See Equipment provided under NASA contracts and agreements, (revised 1 December 2014) (Exhibit USA-271) (BCI); NASA SAAs with Boeing, (Exhibit USA-60) (BCI); and Boeing use of NASA computers, 2007-2012, (Exhibit USA-270) (BCI)).
[1690] In paras. 8.263 and 8.264 above, we find that Boeing was provided access to NASA facilities and equipment totalling approximately USD 9.36 million between FY 2007-FY 2012.
[1691] See Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, p. 2 (referring to "Additional Funding" of USD 1,610,150); 0003, p. 2 (referring to "Add Funding" USD 201,298); and 0004, p. 2 (referring to "F&E FUNDING" of USD 4,490,050).
[1692] European Union's second written submission, para. 338 (referring to Boeing Engineering Operations and Technology, Monthly Technical progress report for June 2010, CLEEN Program, 15 July 2010 (formerly Exhibit US-13-672), (Exhibit EU-1061) (BCI), p. 2).

consortium meetings to "present the progress and results of ongoing work to both Government and non-Government attendees".[1693] The United States disagrees that feedback provided to Boeing by FAA, NASA, and the AFRL staff during a "CLEEN kick off meeting" is relevant because this feedback does not constitute employees assisting Boeing in defining and carrying out its research under the Boeing CLEEN Agreement in a way that "defrays any of Boeing's research-related expenses".[1694] The feedback exercise is not tantamount to a "service" to the contractor or "an effort to help Boeing for its own sake", but is to ensure that Boeing delivers what it was committed to deliver.[1695] Similarly, the United States argues that Boeing's participation in semi-annual government-led consortium meetings to discuss CLEEN research is "simply a mechanism for the government parties to keep apprised of Boeing's research" and does not demonstrate that the Boeing CLEEN Agreement provides goods and services to Boeing.[1696]

8.520. We are unconvinced by the United States' argument that Boeing employees' interaction with FAA staff during CLEEN kick off meetings and other meetings relating to Boeing's participation in the FAA CLEEN Program does not involve the provision of access to FAA employees. We recall that, in its discussion of post-2006 NASA-Boeing transactions at issue, the United States refers to three basic types of NASA staff activity when discussing employees provided through NASA procurement contracts and Space Act Agreements. These are: (a) contract specialists who are responsible for "administration and management aspects" of specific contracts; (b) technical monitors who are responsible for "evaluating whether the contractor is performing the specified work, determining whether a task is complete, and assessing whether the final report … is complete and meets the stated objectives"; and (c) NRA managers who "coordinate operational aspects" such as "organizing logistics for reviews {and} gathering input from technical leads" among other responsibilities.[1697] The United States explains that these employees "ensure that contractors are doing the work they are paid to do" and that this is the access to employees that NASA provides.[1698] Given the United States' view that these types of NASA staff participation constitute "access" to employees under NASA contracts and agreements, we fail to see how feedback provided by FAA employees to Boeing, ensuring that Boeing delivers what it is committed to deliver, or gathering information regarding Boeing's research progress under the FAA CLEEN Program is not the provision of "access" to employees in relation to the Boeing CLEEN Agreement.

8.521. Based on the foregoing, we therefore conclude that the Boeing CLEEN Agreement is most appropriately characterized as a collaborative R&D arrangement under which FAA provides payments to Boeing and access to FAA employees. We do not identify on the evidence before us that Boeing is provided access to particular U.S. Government facilities and equipment, although we conclude that specific amounts designated as "Facilities and Equipment" should be considered payments to Boeing. Accordingly, consistent with the approach of the Appellate Body in respect of the NASA procurement contracts and DOD assistance instruments in the original proceeding, we conclude that the payments under the Boeing CLEEN Agreement involve direct transfer(s) of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, while the provision of access to FAA employees constitutes the provision of goods or services other than general infrastructure, within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.

8.522. **For these reasons, in light of the Appellate Body's reasoning in its characterization of the NASA procurement contracts and DOD assistance instruments in the original proceeding, we therefore find that payments and access to government employees provided to Boeing under the Boeing CLEEN Agreement constitutes a financial contribution within the meaning of Article 1.1(a)(1) of the SCM Agreement. Specifically, the payments constitute a direct transfer of funds within the meaning of Article 1.1(a)(1)(i), and the provision of access to FAA employees constitutes a**

[1693] European Union's second written submission, paras. 337 and 338 (referring to Boeing CLEEN Agreement, (Exhibit EU-17), section C.4.1; and Boeing CLEEN Monthly Technical Progress Report for June 2010, (15 July 2010) (formerly Exhibit US-13-672), (Exhibit EU-1061) (BCI), p. 2).

[1694] United States' second written submission, para. 432. See also United States' first written submission, para. 483; and second written submission, paras. 432-436.

[1695] United States' second written submission, para. 435.

[1696] United States' second written submission, para. 436.

[1697] United States' first written submission, para. 201. The United States additionally provided estimates for the amounts of time each of these staff types contributed to procurement contracts and Space Act Agreements.

[1698] United States' second written submission, paras. 121 and 122.

government provision of goods or services other than general infrastructure under Article 1.1(a)(1)(iii).

8.523. In light of our finding above, we decline to address the European Union's alternative argument that, what it refers to as the transfer to Boeing of patent and other intellectual property rights, could separately be considered a financial contribution under Article 1.1(a)(1)(iii) of the SCM Agreement.

8.524. Having found that the payments to Boeing and the provision of access to FAA employees pursuant to the Boeing CLEEN Agreement involve a financial contribution, we next consider whether this financial contribution confers a benefit.

8.2.4.4 Whether there is a benefit

8.2.4.4.1 Main arguments of the parties and third parties

8.525. The European Union argues that the financial contribution arising from the Boeing CLEEN Agreement confers a benefit within the meaning of Article 1.1(b) of the SCM Agreement for the same reasons that the financial contributions provided through the NASA and DOD aeronautics R&D programmes confer a benefit.[1699] The relevant question to determine the existence of a benefit is whether Boeing has received financial contributions on terms more favourable than those available to the recipient in the market. The European Union argues that the FAA CLEEN Program in general, and the Boeing CLEEN Agreement in particular, results in the same distribution of intellectual property rights as the contracts and agreements funded by the NASA and DOD aeronautics R&D programmes. The FAA provides funding for Boeing to perform R&D for the advancement of Boeing's own LCA development, and then allows Boeing to take ownership over the fruits of the R&D.[1700]

8.526. The European Union rejects the United States' view that the cost-sharing between FAA and Boeing that is a feature of the Boeing CLEEN Agreement must impact the benefit analysis. The European Union submits that, under the benefit analysis in the original proceeding, the fact that Boeing contributed its own funds and resources under DOD assistance instruments did not change the Appellate Body's characterization of those instruments as being akin to a species of joint venture in which a benefit was found to exist. Thus, it is clear that the Appellate Body found the existence of a benefit regardless of the presence of cost-sharing. In the same way as the DOD assistance instruments, the European Union argues that the Boeing CLEEN Agreement also seems to account for Boeing's cost-sharing by providing Boeing with additional rights to data developed with government funding.[1701]

8.527. The United States argues that the European Union fails to identify the appropriate benchmark with which to compare the terms of the Boeing CLEEN Agreement and has therefore failed to make a *prima facie* case that the Boeing CLEEN Agreement confers a benefit under Article 1.1(b) of the SCM Agreement.[1702]

8.528. The United States argues that the Appellate Body's assessment of the existence of a benefit in the original proceeding applied only to contracts where Boeing's contribution was at most equal to that of the U.S. Government. Any monetary contribution made by the recipient to a joint research project affects the net value obtained by the firm from the project. If the contribution of the recipient is neglected there is a risk of overestimating the value obtained by the firm from the project, and a finding of benefit could be made where a benefit does not exist.[1703] The United States argues that the Appellate Body's findings on benefit in respect of the NASA

[1699] European Union's first written submission, para. 221.
[1700] European Union's first written submission, paras. 222-224; second written submission, paras. 346, 347, and 350-353. The European Union contends that it relies on the same benchmarks, including R&D contracts provided by the United States, and the comparison that the Appellate Body relied upon when analysing the NASA aeronautics R&D contracts in the original dispute. (European Union's second written submission, para. 353).
[1701] European Union's second written submission, paras. 355-357.
[1702] United States' first written submission, paras. 486-488.
[1703] United States' second written submission, para. 439 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)* para. 663).

procurement contracts and DOD assistance instruments in the original proceeding do not apply to the Boeing CLEEN Agreement because of the existence of a minimum cost-sharing requirement, the fact that Boeing provides access to Boeing test aircraft, and the different way that intellectual property rights are distributed.[1704] According to the United States, the Boeing CLEEN Agreement involves a contribution by Boeing that is greater than the FAA's contribution, and is greater (on a proportional basis) than any of the contracts or agreements examined by the Appellate Body in the original proceeding. The United States considers that the European Union's arguments do not indicate what a market-based actor would demand, nor do they compare that with the terms of the Boeing CLEEN Agreement, beyond making a "superficial comparison to the IP allocation terms of NASA and DoD agreements".[1705]

8.529. Certain of the third parties (Brazil, Korea, and Japan) make arguments as to the determination of the existence of benefit within the meaning of Article 1.1(b) of the SCM Agreement. These arguments are summarized in Section 8.1.2 above.

8.2.4.4.2 Evaluation by the Panel

8.530. In undertaking our evaluation, we first address the relevant standard that we should apply in determining whether the financial contributions under the Boeing CLEEN Agreement confer a benefit.

8.531. The European Union argues that we should adopt the same benefit analysis that the Appellate Body adopted in concluding that the NASA procurement contracts and DOD assistance instruments at issue in the original proceeding conferred a benefit. The United States argues that the appropriate standard for assessing whether a financial contribution confers a benefit depends on the nature of the financial contribution, and that the assessment here must take into account the degree of cost sharing involved in the Boeing CLEEN Agreement, the fact that Boeing contributes use of Boeing test aircraft, and the degree to which intellectual property rights are shared.

8.532. As we explain in Section 8.2.4.3.2 above, we have concluded that the Boeing CLEEN Agreement is properly characterized as a collaborative R&D arrangement on the basis of its relevant characteristics. Accordingly, we have found that the payments provided to Boeing under the Boeing CLEEN Agreement are financial contributions in the form of a direct transfer(s) of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement, and that any provision to Boeing of access to FAA employees under the Boeing CLEEN Agreement constitutes the provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[1706]

8.533. In the original proceeding, the Appellate Body characterized the NASA procurement contracts and DOD assistance instruments as collaborative R&D arrangements which involved financial contributions, and then determined whether these financial contributions conferred a benefit by comparing the allocation of intellectual property rights under those contracts and instruments with the allocations of intellectual property rights in collaborative R&D agreements, which it treated as evidence of market practice. Given our conclusion that the Boeing CLEEN Agreement is a collaborative R&D arrangement, we consider it appropriate to adopt the same standard for determining whether the financial contribution provided under the Boeing CLEEN Agreement confers a benefit. We will therefore compare the allocation of intellectual property and related licence rights in respect of patents between FAA and Boeing under the Boeing CLEEN Agreement with the evidence before us concerning the allocation of such rights in collaborative R&D arrangements between market actors.

8.534. The cost-sharing features of, and distribution of intellectual property and related licence rights under, the Boeing CLEEN Agreement resemble those of the pre-2007 DOD assistance instruments at issue in the original proceeding (prior to their modification by the DOD-Boeing Patent Licence Agreement), as well as those post-2006 assistance instruments that have not been modified by the DOD-Boeing Patent Licence Agreement.[1707] As under those arrangements, Boeing

[1704] United States' first written submission, paras. 486-488; second written submission, para. 438.
[1705] United States' second written submission, para. 439.
[1706] See para. 8.522 above.
[1707] See Section 8.2.3.2.2 above.

receives payments and is provided access to U.S. Government employees. Boeing must also make either cash or non-cash (in-kind) contributions, including items such as equipment, facilities, labour, and office space equal to 50% or more of the total cost of work specified in the Agreement.[1708] As we explain in our evaluation of financial contribution[1709], pursuant to its participation in the Boeing CLEEN Agreement, Boeing may retain rights to own and use any inventions subject to granting the U.S. Government a nonexclusive, royalty-free license to patent for inventions for government use.[1710] Boeing may also restrict from disclosure designated "limited rights data" that involves trade secrets or other data that is "commercial or financial and confidential or privileged" and "pertain to items, components, or processes developed at private expense, including minor modifications, or as otherwise identified as Limited Rights Data".[1711]

8.535. As we explain in Section 8.1.3 of this Report, based on our review of commercial R&D arrangements, which the parties have submitted as evidence of relevant "market benchmarks"[1712], **[***]**.

8.536. The fundamental balance of intellectual property rights under the Boeing CLEEN Agreement remains one in which the U.S. Government lacks the right to obtain an *exclusive* licence to practice Boeing-owned patents. Boeing's ability to commercially exploit its patents is not contingent on any Government election not to exercise exclusive rights to licence those patents for itself. In this respect, the allocation of intellectual property rights under the Boeing CLEEN Agreement is more favourable to Boeing than the corresponding allocations to commissioned parties under the private collaborative R&D agreements before the Panel.

8.537. In conclusion, we consider that the Boeing CLEEN Agreement confers a benefit based on the same comparison to prevailing market practices for collaborative R&D arrangements that the Appellate Body relied upon in the original proceeding to find that the NASA procurement contracts and DOD assistance instruments conferred a benefit.

8.538. The United States argues that the value of Boeing's contribution under the Boeing CLEEN Agreement is greater than the corresponding value of Boeing contributions under the NASA procurement contracts and DOD assistance instruments in the original proceeding, and that this has an impact on whether the Boeing CLEEN Agreement should be found to confer a benefit.

8.539. The Appellate Body considered a similar argument by the United States in the original proceeding; namely, that funds provided by Boeing to fund research projects under DOD assistance instruments must be taken into account in comparing the terms of those instruments with market benchmarks for purposes of determining whether a benefit has been conferred. While noting that monetary contributions by a recipient to a joint research project affect the net value obtained by the firm from the project, and thus could distort the assessment of benefit, the Appellate Body nevertheless noted that the findings by the original panel did not support the proposition that Boeing's contribution to the projects meant that no benefit was conferred. The Appellate Body explained:

> As part of its analysis of financial contribution, the Panel found that the scope of the government licence over data rights varied when both Boeing and the USDOD contributed funding to the project. More specifically, the Panel found that the government received only "limited rights" to the data under the assistance instruments (which were cost-sharing transactions), as opposed to the "unlimited rights" to the data that the government receives under USDOD procurement contracts (where there was no cost-sharing). Thus, according to the Panel's description,

[1708] Boeing CLEEN Agreement, (Exhibit EU-17), part I, section B.3.

[1709] See para. 8.515 above.

[1710] Boeing CLEEN Agreement, (Exhibit EU-17), section I.1 (incorporating clause 3.5-10); and FAA Acquisition Management System (AMS), Clause 3.5-10, "Patent Rights – Ownership by Contractor" (January 2009), (Exhibit EU-1063), section (d)(2).

[1711] Boeing CLEEN Agreement, (Exhibit EU-17), section I.3. Boeing may also designate "Boeing proprietary information", which includes data and technical information that is owned by Boeing and was not first produced during the performance of the Boeing CLEEN Agreement.

[1712] These private R&D agreements include Contracts A through F which were also submitted in the original proceeding and a number of other private, commercial collaborative R&D agreements. Our evaluation of the allocation of intellectual property rights and rights resulting therefrom (i.e. licence rights) under these collaborative R&D arrangements is set out in a BCI Appendix (Appendix 1).

> Boeing's monetary contribution to the research project is not tied to the ownership rights over any inventions and data, which results from the operation of US law. Rather, Boeing's monetary contribution is consideration for the enhanced data rights that it obtains under the assistance instruments, which grant more limited rights to the government over the data. In the light of the Panel's finding, it is therefore clear that Boeing's monetary contribution under the assistance instruments does not change the bargain over the ownership of the inventions and data, it only changes the bargain as to the government's licence over the data rights.[1713]

8.540. In the case of the Boeing CLEEN Agreement, we do not see that Boeing's rights over any inventions resulting from the work performed thereunder are tied to Boeing's monetary contribution to the research project. Rather, as discussed by the Appellate Body with respect to the DOD assistance instruments, Boeing's monetary contribution functions as consideration for the enhanced data rights that it obtains; namely designated "limited rights data". We see no basis to depart from the Appellate Body's assessment of this argument in the original proceeding in respect of the DOD assistance instruments.

8.541. **We therefore find that the financial contribution provided to Boeing through the Boeing CLEEN Agreement confers a benefit within the meaning of Article 1.1(b) of the SCM Agreement.**

8.2.4.5 Whether the subsidy is specific

8.2.4.5.1 Main arguments of the parties

8.542. The European Union argues that the subsidy provided through the payments and access to facilities, equipment, and employees provided to Boeing under the FAA CLEEN Program (pursuant to the Boeing CLEEN Agreement) is specific within the meaning of Article 2.1(a) of the SCM Agreement. The European Union considers that the subsidy is explicitly limited to certain aviation-related industries because the FAA CLEEN Program is expressly aimed at the development of "technologies for civil subsonic jet airplanes", and the FAA's R&D activities, generally, are restricted to "civil aviation research and development".[1714] The European Union argues that the subsidy is also specific within the meaning of Article 2.1(c) as the FAA has awarded contracts under the FAA CLEEN Program to only five aviation companies. Accordingly, the subsidy programme is "used by a limited number of industries" which are also the predominant beneficiaries of the subsidy.[1715]

8.543. As with its specificity arguments regarding the NASA aeronautics R&D measures, the European Union argues that the assessment of specificity should not depend on the "benefit" determination, in the sense of the favourable distribution of intellectual property rights, but rather should focus on the challenge to a subsidy involving funding and other support for research and development of near-term commercializable LCA-related technologies arising from the Boeing CLEEN Agreement.[1716] The European Union regards the comparison of the allocations of intellectual property rights to market benchmark instruments as "just a means to the end of determining the existence of benefit from these financial contributions – it is not the 'benefit' or 'subsidy', in and of itself".[1717] Thus, the European Union submits that the findings of the panel and Appellate Body in the original proceeding with respect to the European Union's separate challenge to the allocation of patent rights as a self-standing subsidy are not applicable to the question of whether the subsidy provided to Boeing pursuant to the Boeing CLEEN Agreement is specific.[1718]

[1713] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 664. (fns omitted)

[1714] European Union's first written submission, paras. 225 and 226 (referring to CLEEN Solicitation, (Exhibit EU-20), p. 3; and Airport and Airway Trust Fund Authorizations, *United States Code*, Title 49, chapter 481, sections 48102 and 48103, (Exhibit EU-266), section 48102(a)); second written submission, paras. 359 and 361.

[1715] European Union's first written submission, para. 227; second written submission, para. 360.

[1716] European Union's second written submission, paras. 363, 366, and 368.

[1717] European Union's second written submission, para. 366. (emphasis omitted)

[1718] European Union's second written submission, paras. 364-365, and 367-369. See also European Union's response to Panel question No. 28, paras. 165-168; and comments on United States' response to Panel question No. 28, para. 183. The European Union asserts that its claim before the original

8.544. The United States argues that the Boeing CLEEN Agreement is not specific because it is not explicitly limited to certain enterprises within the meaning of Article 2.1(a), or otherwise *de facto* specific within meaning of Article 2.1(c) of the SCM Agreement.

8.545. The United States submits that the European Union's allegation of the existence of a benefit is limited to the fact that Boeing receives more favourable rights in patents than would be the case if a commercial actor had funded the research. Thus, the United States argues that the specificity analysis must focus on Boeing's receipt of rights in patents more favourable than those available to commissioned party under a commercial transaction. The United States recalls that in the original proceeding, the Appellate Body concluded that the allocation of patent rights, if taken as a self-standing subsidy, would not be specific because it is available "under any government contract, by any agency, in any sector". The Boeing CLEEN Agreement is also not specific for the same reason. Thus, the United States submits that, even if the Boeing CLEEN Agreement involved an allocation of patent rights more favourable to Boeing as commissioned party than corresponding allocations to commissioned parties under comparable commercial transactions (which, it contends, the European Union has not demonstrated), such a distribution would be consistent with the distribution of patents rights generally available under all government R&D contracts.[1719] The United States argues that the European Union's specificity claim under Article 2.1(c) of the SCM Agreement fails for the same reasons.[1720]

8.2.4.5.2 Evaluation by the Panel

8.546. The first question before us is whether the subsidy provided to Boeing under the Boeing CLEEN Agreement is specific within the meaning of Article 2.1(a) of the SCM Agreement.

8.547. We recall our analysis and findings in Sections 8.2.2.5.2 and 8.2.3.5.2 with regard to whether subsidies provided to Boeing through post-2006 NASA procurement contracts and Space Act Agreements, and subsidies provided to Boeing through post-2006 DOD assistance instruments, are specific within the meaning of Article 2.1(a) of the SCM Agreement. The fundamental question that arose in that regard was whether, for purposes of determining whether access to the subsidy is explicitly limited, the relevant subsidy should be understood to be the payments and the provision of access to facilities, equipment, and employees on terms more favourable than available in the market, as argued by the European Union; or whether the relevant subsidy should be understood to be the allocation of rights in patents on terms more favourable than available in the market, as argued by the United States.[1721]

8.548. In our view, the arguments of the parties with respect to whether the subsidy provided to Boeing through the Boeing CLEEN Agreement is specific within the meaning of Article 2.1(a) raise exactly the same question.

8.549. We do not consider that, as argued by the United States, the fact that the focus of our analysis of whether the Boeing CLEEN Agreement confers a benefit is the allocation of intellectual property rights, logically leads to the conclusion that the subsidy at issue should be defined as the allocation of intellectual property rights on terms more favourable than available in the market, and that for purposes of determining whether access to the subsidy is limited, we must treat the Bayh-Dole Act, its associated legislative instruments and implementing regulations as the relevant subsidy scheme. Since a subsidy within the meaning of Article 1 is defined in terms of financial contribution and benefit, it stands to reason that both the financial contribution and benefit must be taken into consideration in an analysis of whether access to the subsidy is explicitly limited. Therefore, while we agree that the nature of the benefit found to exist is a key consideration in the specificity analysis under Article 2.1(a), the question of whether access to the subsidy is explicitly limited cannot always be answered by focusing solely on the existence of benefit.[1722] In our view,

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panel related to the allocation of intellectual property rights was "separate and distinct" from its claims to the NASA and DOD aeronautics programmes. (European Union's second written submission, para. 364).

[1719] United States' first written submission, para. 489; second written submission, para. 440. See also United States' response to Panel question No. 28, paras. 124-126; and comments on European Union's response to Panel question No. 28, paras. 153-155.

[1720] United States' first written submission, para. 489.

[1721] Our analysis above in Sections 8.2.2.5.2 and 8.2.3.5.2 includes a summary of relevant findings regarding specificity made by the panel and the Appellate Body in the original proceeding.

[1722] See also Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, paras. 377 and 378.

the United States' argument fails to properly consider the benefit in relation to the financial contribution and the particular context in which that contribution occurs.

8.550. We recall that in the case of the NASA aeronautics R&D measures, we consider it appropriate to assess whether the financial contributions provide a benefit on the basis of an examination of the allocation of intellectual property rights because of our particular characterization of the nature of those measures. In contrast, as illustrated by our analysis of benefit in relation to DOD procurement contracts, where we characterize the financial contributions differently, we consider that a focus on the allocation of intellectual property rights as a basis to determine the existence of a benefit is not appropriate. Thus, in the context of our characterization of the DOD procurement contracts as purchases of R&D services, we find that the same allocation of patent rights that applies by virtue of the Bayh-Dole Act and related legislative instruments and implementing regulations would not result in the measures in question being subsidies. [1723]

8.551. Because the role of the allocation of intellectual property rights in our analysis of whether a measure constitutes a subsidy depends upon the particular context, we consider that in ascertaining whether "access to the subsidy" is subject to explicit limitations, we cannot treat the allocation of intellectual property rights on terms more favourable than available in the market as being the relevant subsidy in and of itself. Therefore, we disagree with the United States that the subsidy provided through the Boeing CLEEN Agreement can be characterized as a "patent rights subsidy", which is the same subsidy that the Appellate Body considered in its analysis of the European Union's alternative claim regarding the allocation of intellectual property rights as a self-standing subsidy. As a consequence, we also disagree that the Bayh-Dole Act, its associated legislative instruments and implementing regulations constitute the appropriate legislative and regulatory framework that we must consider, for purposes of determining whether the legislation pursuant to which the granting authority operates explicitly limits access to the subsidy to certain enterprises.[1724]

8.552. We recall that in the case of the NASA aeronautics R&D subsidies at issue in the original proceeding, the basis for the panel's finding of an explicit limitation of access to the subsidy was the existence of restrictions on the scope of NASA's R&D activities to aeronautics and space and the particular objectives pursued by NASA with these activities. Thus, the original panel found that the access to the subsidy was explicitly limited to certain enterprises because the very nature of the research inherently limited access to the subsidy to "certain enterprises that participate in aeronautics-related R&D".[1725] In our view, access to the subsidy that we have found to exist in this proceeding in respect of the Boeing CLEEN Agreement is subject to a similar, explicit limitation. In particular, we find that access to the subsidy is explicitly limited because the focus of the R&D conducted under the Boeing CLEEN Agreement is aerospace-related.

8.553. **Therefore, we find that the subsidy provided to Boeing through the Boeing CLEEN Agreement is specific within the meaning of Article 2.1(a) of the SCM Agreement.** In light of this conclusion, we do not consider it necessary to address the European Union's alternative argument under Article 2.1(c).[1726] Finally, we note that the European Union also argues that the subsidy provided to Boeing through the Boeing CLEEN Agreement is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because, in Section 10 of this Report, we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

[1723] See Section 8.2.3.4.2.3 above.

[1724] Because of the need to consider financial contribution and benefit together in determining whether "access to the subsidy" is explicitly limited, we consider that this is not a situation in which "multiple authorities are implementing the same measure". (United States' second written submission, para. 246).

[1725] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1048.

[1726] We note that the FAA entered into R&D agreements (in the form of other transaction agreements) only with Boeing and four propulsion-focused companies (General Electric, Honeywell, Pratt & Whitney, and Rolls-Royce North America) under the FAA CLEEN Program.

8.2.4.6 Amount of the subsidy and amount of the financial contribution

8.2.4.6.1 The amount of the subsidy provided to Boeing through the FAA CLEEN Agreement

8.554. In the previous Section, we find that the transactions pursuant to the post-2006 Boeing CLEEN Agreement constitute a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement. In this Section, we address the parties' arguments regarding the amount of the subsidy provided to Boeing by the Boeing CLEEN Agreement as well as the amount of the financial contribution. The amount of the subsidy, in our view, refers to the amount or magnitude of the benefit conferred by the financial contribution; i.e. the quantification of the advantage conferred on Boeing by the financial contribution, compared to what Boeing would have obtained in a market transaction.

8.555. The European Union argues that the value of the benefit from the Boeing CLEEN Agreement should be based on the value of the technology developed under the Boeing CLEEN Agreement, which can be valued as a "multiple of the financial contribution" and can "last for many years, given the long life of the technologies created".[1727] The United States does not address the European Union's argument in the context of the Boeing CLEEN Agreement.

8.556. We address this argument by the European Union in Section 8.2.2.6 when addressing the NASA aeronautics R&D measures at issue, where we find that the European Union's assessment of the benefit is based on a conflation of the concept of benefit with the effects of a subsidy. We therefore conclude that there is insufficient evidence on the record to enable us to estimate the amount of the subsidy in the sense of the difference between the terms regarding the allocation of intellectual property rights and related licence rights on which the financial contributions were provided to Boeing under the NASA procurement contracts and cooperative agreements and the terms regarding the allocation of intellectual property rights and related licence rights under which the financial contributions would have been provided in a market-based collaborative R&D arrangement. In our view, that conclusion also applies to the European Union's argument as to how to determine the amount of the subsidy provided through the Boeing CLEEN Agreement.

8.557. **In light of the foregoing, we are unable to accept the European Union's argument regarding the amount of the benefit provided to Boeing through the Boeing CLEEN Agreement. We therefore find that there is insufficient evidence on the record as to the amount of the subsidy provided to Boeing through the Boeing CLEEN Agreement**.

8.2.4.6.2 The amount of the financial contribution provided to Boeing through the Boeing CLEEN Agreement

8.2.4.6.2.1 Main arguments of the parties

8.558. The European Union argues that the amount of the financial contribution under the Boeing CLEEN Agreement is "at least" USD 27.99 million between 2010 and 2014, based on the total value of the Boeing CLEEN Agreement. In particular, the European Union derives this amount from the original schedule of annual funding levels provided in the Boeing CLEEN Agreement, which indicates FAA funding for Boeing of USD 6,736,692 in 2010, USD 3,969,082 in 2011, USD 8,103,935 in 2012, USD 6,494,751 in 2013, and USD 283,115 in 2014. These amounts are then adjusted to account for the actual funding provided by the FAA to Boeing based on modifications appended to the Boeing CLEEN Agreement.[1728]

8.559. The United States argues that the European Union overstates any financial contribution provided by the FAA CLEEN Program, as the Boeing CLEEN Agreement does not provide Boeing with access to government facilities, equipment, and employees. The United States argues that

[1727] European Union's first written submission, para. 225. The European Union submits that Boeing provides "integrated management" of the overall program, thus "allowing Boeing to benefit from FAA funding of the other participants, all of whom are Boeing suppliers". (European Union's first written submission, para. 202).

[1728] European Union's first written submission, para. 220 and fn 514. See Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, p. 1 (providing USD 6,310,150 in 2011), 0003, p. 2 (providing an additional USD 201,298 in 2011), and 0004, p. 1 (providing USD 7,960,050 in 2012).

contractual language in the Boeing CLEEN Agreement referring to "Facilities and Equipment" does not indicate that Boeing was provided facilities or equipment of any value by FAA. The United States therefore objects to including any specific amounts designated as "Facilities and Equipment". The United States also objects that any access to *NASA* test facilities provided to Boeing should be considered in relation to the Boeing CLEEN Agreement.[1729] The United States also argues that feedback provided to Boeing by FAA, NASA, and AFRL staff, and Boeing's participation in semi-annual government-led consortium meetings, does not demonstrate that the Boeing CLEEN Agreement involves a provision of goods and services to Boeing.[1730] In addition, the United States notes that while the FAA CLEEN Program may contribute funding related to flight testing CLEEN technology under the Boeing CLEEN Agreement, CLEEN funding may not be used for flight testing other technologies. Thus, there is no basis to assume that all work performed by Boeing in connection with its ecoDemonstrator programme is a result of FAA funding under the Boeing CLEEN Agreement.[1731]

8.2.4.6.2.2 Evaluation by the Panel

8.560. The European Union's estimate of the amount of the financial contribution provided through the Boeing CLEEN Agreement is based on actual figures listed in the Boeing CLEEN Agreement, adjusted to account for the actual funding provided by the FAA to Boeing based on modifications appended to the Boeing CLEEN Agreement. The original schedule of annual funding levels, as modified, is as follows[1732]:

Table 2: Annual funding levels under the Boeing CLEEN Agreement

Year	Annual funding level in USD (as modified)
2010	6,736,692
2011	6,511,448 (as per modifications 2 and 3)
2012	7,960,050 (as per modification 4)
2013	6,494,751
2014	283,115
Total	**27,986,056**

8.561. Portions of this total include certain amounts designated as "Facilities and Equipment" funds as opposed to "Research, Engineering, and Development (RED)" funds.[1733] Amounts designated as "Facilities and Equipment" total USD 6,301,498 over the 2011-2012 period (including USD 1,811,448 in 2011[1734] and USD 4,490,050 in 2012[1735]). The United States does not generally object to using adjusted annual funding amounts as a basis to estimate the total amount of the financial contribution. However, it argues that amounts designated as "Facilities and Equipment" should be excluded from the calculation.

8.562. We conclude above in our evaluation of the whether a financial contribution exists that amounts designated as "Facilities and Equipment" should be treated as further payments to Boeing. Accordingly, we include amounts designated as "Facilities and Equipment" as well as the amounts designated as "Research, Engineering, and Development (RED)" in our estimate of the total amount of the financial contribution provided through the Boeing CLEEN Agreement.

[1729] United States' first written submission, para. 482; second written submission, para. 434 and fn 603.
[1730] United States' second written submission, paras. 432-436.
[1731] United States' comments on European Union's response to Panel question No. 11, para. 55.
[1732] See Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, p. 1 (providing USD 6,310,150 in 2011), 0003, p. 2 (providing an additional USD 201,298 in 2011), and 0004, p. 1 (providing USD 7,960,050 in 2012).
[1733] See e.g. Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, p. 1, and 0003, p. 1.
[1734] See e.g. Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification Nos. 0002, p. 2, and 0003, p. 2.
[1735] Boeing CLEEN Agreement, (Exhibit EU-17), amendment/modification No. 0004, p. 2.

8.563. We note that the parties disagree as to whether Boeing is provided access to employees under the Boeing CLEEN Agreement. Based on the United States' own description of Boeing's interaction with U.S. Government staff pursuant to the Boeing CLEEN Agreement, we conclude that the Boeing CLEEN Agreement provides Boeing with access to FAA employees.[1736] The European Union has not provided any estimate of the value of this access.

8.564. In light of the foregoing, we accept the European Union's estimate of the amount of the financial contribution to Boeing through the Boeing CLEEN Agreement as the best available evidence. **We find that, to the extent that the amount of the financial contribution is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy or taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8, the revised estimate of USD 27.99 million is a credible estimate of the amount of the financial contribution provided to Boeing through the Boeing CLEEN Agreement between 2010 and 2014**.

8.2.4.7 Conclusion

8.565. In light of our above findings regarding financial contribution, benefit, and specificity, we conclude that the European Union has established that transactions pursuant to the Boeing CLEEN Agreement involve a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement. While we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent that it is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy or taken appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement, we find the European Union's estimate of the financial contribution at USD 27.99 million between 2010 and 2014 to be credible.

8.2.5 Tax exemptions and exclusions under FSC/ETI legislation and successor legislation

8.2.5.1 Introduction

8.566. In this Section of the Report, we determine whether the United States grants or maintains specific subsidies to Boeing, in the form of tax exemptions and tax exclusions pursuant to the FSC/ETI measures and successor legislation, after the expiry of the implementation period, and has thereby failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.

8.567. In its request for the establishment of a panel in this compliance proceeding, the European Union challenges the same FSC/ETI measures that were at issue in the original proceeding. The measures constitute the original provisions of the U.S. Internal Revenue Code which (prior to repeal) established special tax treatment for "Foreign Sales Corporations" (FSCs)[1737]: the *FSC Repeal and Extraterritorial Income Exclusion Act of 2000* (the ETI Act)[1738], the *American Jobs Creation Act of 2004* section 101[1739], and the *Tax Increase Prevention and Reconciliation Act of 2005* (the TIPRA).[1740] The European Union alleges that, through these measures, the United States maintains tax exemptions and tax exclusions that constitute specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.[1741] Moreover, the European Union alleges that these measures cause present adverse effects and are inconsistent with Articles 3.1(a), 3.1(b) and 3.2 of the SCM Agreement and Article III:4 of the GATT.[1742]

8.568. The original panel found that the tax exemptions and tax exclusions provided to Boeing under the FSC/ETI legislation, including the transitional and grandfather provisions of the ETI Act

[1736] See para. 8.520 above.
[1737] Internal Revenue Code, *United States Code*, Title 26, sections 245, 921-927, and 951 (2000), (Exhibit EU-402), sections 921-927 and 951(d).
[1738] Repeal and Extraterritorial Income Exclusion Act of 2000, *United States Code of Federal Regulations*, Public Law No. 106-519, (Exhibit EU-403).
[1739] American Jobs Creation Act of 2004, Public Law No. 108-357, section 101 (22 October 2004), (Exhibit EU-404).
[1740] Tax Increase Prevention and Reconciliation Act of 2005, Public Law No. 109-222 (17 May 2006), (Exhibit EU-405), section 513. See European Union's first written submission, para. 390.
[1741] European Union's request for the establishment of a panel, paras. 19 and 20.
[1742] European Union's request for the establishment of a panel, paras. 29-32.

and the AJCA, constituted specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.[1743] The panel estimated that the amount of FSC/ETI subsidies provided to Boeing's LCA division between 1989 and 2006 was USD 2.199 billion.[1744] The Appellate Body upheld (albeit with different reasoning) the original panel's finding that the measures caused serious prejudice, within the meaning of Article 5(c) and 6.3(b) of the SCM Agreement, with respect to the 100-200 seat LCA product market.[1745]

8.569. The United States notified the DSB on 26 September 2012 that it has enacted legislation terminating the FSC/ETI benefits as of 2006, and that it confirms that Boeing did not "use" FSC or ETI tax benefits after 2006.[1746] The European Union argues that certain grandfathered provisions of the FSC/ETI legislation have not been repealed, and continue to grant Boeing tax benefits after 2006.

8.570. The measures at issue are set out in detail in the original panel report.[1747] By way of background, the original provision of the U.S. Internal Revenue Code granted to a "Foreign Sales Corporation"[1748] a tax exemption on a portion of income generated by the sale or lease of "export property" – referred to as "exempt foreign income". The FSC measures also allowed U.S. parent companies of FSCs to defer paying taxes on certain "foreign trade income" that would normally be subject to immediate taxation, and to avoid paying taxes on dividends received from their FSCs related to "foreign trade income".[1749]

8.571. On 15 November 2000, in response to the findings made by the panel and Appellate Body in *US – FSC*[1750], the United States passed the ETI Act.[1751] The ETI Act repealed the provisions in the U.S. Internal Revenue Code relating to taxation of FSCs (subject to section 5(c)(1), an indefinite grandfathering provision), but also introduced a further exclusion from income taxation for certain qualifying foreign income.[1752] On 22 October 2004, in response to the panel and Appellate Body findings in *US – FSC (Article 21.5 – EC)*[1753], the United States passed the AJCA.[1754] The AJCA repealed those provisions in the ETI Act that granted tax exemptions on certain qualifying income.

8.572. However, the AJCA contained two key grandfather provisions. First, the AJCA indefinitely grandfathered the ETI scheme in respect of transactions made in the ordinary course of business, occurring pursuant to a binding contract between the relevant taxpayer and an unrelated person that was in effect on 17 September 2003.[1755] Second, the AJCA did not repeal section 5(c)(1) of

[1743] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1429.
[1744] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1429.
[1745] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1350(d)(iii).
[1746] United States' Compliance Communication, paras. 7 and 8.
[1747] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1378-7.1385.
[1748] A "Foreign Sales Corporation" was a corporation created, organized and maintained in a qualified foreign country or U.S. possession outside the customs territory of the United States under the specific requirements of Sections 921-927 of the U.S. Internal Revenue Code. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1379 and fn 3033).
[1749] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1379; and U.S. Internal Revenue Code, U.S. Code, Title 26, sections 245, 921-927, and 951 (2000), (Exhibit EU-402).
[1750] Panel Report, *US – FSC*, para. 8.1(a); and Appellate Body Report, *US – FSC*, paras. 177(a) and 178.
[1751] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1380; Repeal and Extraterritorial Income Exclusion Act of 2000, United States Code of Federal Regulations, Public Law No. 106-519, (Exhibit EU-403).
[1752] As the original panel explained, "the ETI Act allowed for the exclusion from taxation of certain income of a U.S. 'taxpayer'. Such income – 'extraterritorial income' that was 'qualifying foreign trade income' – could be earned with respect to goods only in transactions involving qualifying foreign trade property. The ETI Act defined 'extraterritorial income' as the gross income of a taxpayer attributable to 'foreign trading gross receipts', i.e. gross receipts generated by certain qualifying transactions involving the sale or lease of 'qualifying foreign trade property' not for use in the United States." (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1382; see more generally paras. 7.1380-7.1383).
[1753] Panel Report, *US – FSC (Article 21.5 – EC)*, paras. 9.1(a), 9.1(b), and 9.1(e); and Appellate Body Report, *US – FSC (Article 21.5 – EC)*. paras. 256(b), 256(f), and 257.
[1754] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1384; and American Jobs Creation Act of 2004, Public Law No. 108-357, section 101 (22 October 2004), (Exhibit EU-404).
[1755] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1384.

the ETI Act which indefinitely grandfathered the original FSC measures in respect of certain transactions entered into pursuant to binding contracts in effect on 30 September 2000.[1756]

8.573. On 17 May 2006, in response to the panel and Appellate Body findings in *US – FSC (Article 21.5 – EC II)*[1757], the United States passed the TIPRA, which purported to repeal the two aforementioned grandfather provisions. Section 513(c) of the TIPRA provides that "{t}he amendments made by this section shall apply to taxable years beginning after the date of the enactment of this Act".[1758]

8.574. It was not disputed in the original proceeding that, up until 2006, the FSC/ETI measures (including transitional and grandfathered measures enacted in the successor legislation) constituted specific subsidies.[1759] The parties disagreed, however, as to whether the TIPRA in fact fully repealed the grandfathered provisions; that is, whether Boeing continued to receive tax benefits with respect to certain foreign income after 2006. The European Communities argued, as the European Union does now, that the prospective application of the TIPRA meant that the grandfathered provisions of the FSC/ETI legislation that remained in place following the passage of the AJCA were still viable after 2006 with respect to income generated from certain eligible back-dated orders.[1760] The United States argued that Boeing had ceased to receive FSC/ETI benefits as of 31 December 2006.[1761]

8.575. Throughout this Section, the Panel refers to Boeing's possible receipt of "FSC/ETI benefits". By way of explanation, this refers to the tax exemptions and exclusions that the European Union alleges continue to be available to Boeing, despite the purported repeal of the FSC/ETI and successor act subsidies by the TIPRA. More specifically, it refers to tax exemptions and exclusions on eligible foreign income generated after 2006 on those back-dated orders to which the two grandfathered provisions of the FSC/ETI measures continue to apply.

8.2.5.2 Main arguments of the parties

8.576. The European Union argues that the same grandfathered provisions from the FSC/ETI subsidies that were at issue in the original proceeding have continued, since 2006, to provide Boeing's LCA division with tax concessions.

8.577. The European Union emphasizes that the original panel found that, between 1989 and 2006, Boeing received USD 2.199 billion in specific subsidies through the FSC/ETI legislation and successor acts.[1762] It considers, however, that the original panel report cannot be relied on in support of the United States' argument that the FSC/ETI benefits terminated in 2006. The original panel found that it was "not … necessary to reach a conclusion" as to whether there was sufficient evidence before it to establish that the subsidies continued after 2006.[1763] In this proceeding, however, where the European Union claims that the United States has not achieved compliance because the FSC/ETI subsidies have not been withdrawn, the question of whether FSC/ETI benefits have continued to accrue to Boeing after 2006 is highly relevant.[1764]

8.578. As in the original proceeding, the European Union relies on a December 2006 memorandum from the Internal Revenue Service (2006 IRS memorandum), which states:

> The TIPRA repeal date repeals the {FSC and ETI} binding contract rules for taxable years that begin after May 17, 2006. Because the binding contract rules apply on a transaction-by-transaction basis, we interpret the TIPRA repeal date as repealing the binding contract rules *prospectively*, on a transaction-by-transaction basis, for

[1756] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1384.
[1757] Panel Report, *US – FSC (Article 21.5 – EC II)*, para. 8.1; and Appellate Body Report, *US – FSC (Article 21.5 . EC II)*, para. 100(b).
[1758] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1385; and Tax Increase Prevention and Reconciliation Act of 2005, Public Law No. 109-222 (17 May 2006), (Exhibit EU-405), section 513.
[1759] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1400.
[1760] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1407-7.1411.
[1761] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1412-7.1417.
[1762] European Union's first written submission, para. 390.
[1763] European Union's second written submission, para. 539 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1428).
[1764] European Union's second written submission, para. 539.

> transactions entered into during a taxable year that begins after May 17, 2006. In other words, *the binding contract rules {continue to} apply to certain transactions, but only if such transactions are not entered into in a taxable year that begins after May 17, 2006*.[1765]

8.579. The European Union argues that, based on this statement, the TIPRA continues to allow for Boeing to receive FSC/ETI benefits with respect to two types of foreign income recognized after 31 December 2006[1766]:

a. income from a sale or lease entered into before 1 January 2005;

b. income from a sale or lease entered into before 1 January 2007, pursuant to a binding contract that was in place with an unrelated person on 17 September 2003 and at all times thereafter.

8.580. The European Union submits that this means, for example, that if Boeing entered into a binding contract with an unrelated customer before 18 September 2003, wherein the customer had an option to buy a certain number of aircraft, the buyer exercised the option before 1 January 2007, and the final aircraft were not delivered until 2012 or later, Boeing remains entitled to tax concessions on income from the sale recognized in 2007 and beyond.[1767] The 2006 IRS memorandum has not been superseded by any further guidance from the IRS.[1768] Its interpretation of the TIPRA continues the flow of FSC/ETI benefits to Boeing which, as the original panel found with respect to the pre-2006 benefits, constitute a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement. The European Union submits a report prepared by its experts, International Trade Resources LLC (ITR), which identifies at least 69 orders that allegedly qualify for the first aspect of the continued grandfathering above; namely, orders that will generate new income recognized after 2012 from a sale or lease in the ordinary course of trade or business entered into before 1 January 2005.[1769]

8.581. The European Union argues that, in light of the evidence it has submitted, the statements by Boeing's James H. Zrust, Boeing's Vice President of Tax, that Boeing has not received any FSC/ETI benefits as of 2006, and does not intend to receive any in the future, are unpersuasive.[1770] First, the European Union emphasizes that while the U.S. Government is in a unique position to definitively verify any statements that Boeing makes about its corporate tax filings, it does not do so. Rather, the United States simply acts as a messenger for Boeing's own view that FSC/ETI benefits were not received after 2006.[1771] The statements are also ambiguous and imprecise, and never define the term "FSC benefits".[1772] Similarly, Boeing itself could, if it had wished to legally establish that it does not receive FSC/ETI benefits, provide a statement as such under "penalty of perjury", but has not done so.

[1765] European Union's first written submission, para. 394 (citing "Qualification for FSC benefits and ETI Exclusions", Office of Chief Counsel, Internal Revenue Service Memorandum No. AM 2007-001, 22 December 2006 (2006 IRS memorandum), (Exhibit EU-406), p. 6). (underlining original, italics added by the European Union)

[1766] European Union's first written submission, paras. 394 and 395 and fn 1030; and 2006 IRS memorandum, (Exhibit EU-406), p. 6.

[1767] European Union's first written submission, para. 395.

[1768] European Union's first written submission, para. 399; comments on the United States' response to Panel question No. 34, para. 211 (citing United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 46, para. 116).

[1769] European Union's first written submission, para. 396. International Trade Resources Report, *Boeing FSC/ETI Tax Exemptions Post-2011*, (13 December 2012) (ITR FSC/ETI Report), (Exhibit EU-24), at attachment 1. The European Union explains that it does not have the data necessary to determine the number of orders eligible for FSC/ETI benefits based on orders for revenue which will be recognized after 31 December 2006 from a sale or lease in the ordinary course of trade or business entered into before 1 January 2007 pursuant to a binding contract that was in place with an unrelated person on 17 September 2003 and at all times thereafter.

[1770] European Union's comments on the United States' response to Panel question Nos. 33, para. 208, and 34, para. 210.

[1771] European Union's comments on the United States' response to Panel question No. 33, paras. 202 and 207.

[1772] European Union's second written submission, para. 541; comments on the United States' response to Panel question No. 33, para. 204.

8.582. Further, the European Union notes that Mr Zrust's statements provide only that Boeing "does not intend" to receive FSC/ETI benefits, not that Boeing "will not" receive the benefits. Nothing prevents Boeing from changing its view that it will not claim FSC/ETI benefits on eligible income. The subsidy therefore continues to exist after 2006, since government inaction is insufficient to demonstrate the withdrawal of the subsidy.[1773]

8.583. The European Union also argues that the United States' assertion that Boeing did not "use" the tax benefits confirms that the benefit within the meaning of Article 1.1(b) of the SCM Agreement in fact has been conferred on Boeing. If not, the opportunity to "use" the benefit would never have arisen.[1774] The European Union considers that this is sufficient to demonstrate the existence of the subsidy.[1775] Whether a subsidy has been "used", according to the European Union, does not go to the question of whether the subsidy exists, but whether the subsidy has caused adverse effects, as provided for in Article 5 of the SCM Agreement.[1776] Since, however, the FSC/ETI subsidies are prohibited subsidies contingent on export, they are assumed to have caused adverse effects. The European Union argues that whether Boeing in fact "used" the subsidy is therefore irrelevant.[1777]

8.584. The United States argues that Boeing ceased to receive FSC/ETI tax benefits after 2006.[1778] It notes that the evidence relied upon by the European Union to show otherwise (namely, the 2006 IRS memorandum) is the same evidence it relied upon in the original proceeding.[1779] According to the United States, the original panel examined this evidence, and declined to find that Boeing would continue to receive FSC/ETI benefits after 2006.[1780] Rather, the panel found that the mere availability of the benefits did not indicate that Boeing had actually used them.[1781] Moreover, before the original panel, the European Communities itself submitted a document indicating that the amount of FSC/ETI subsidies after 2006 was zero.[1782]

8.585. The United States submits the July 2009 statement by James H. Zrust, Boeing's Vice President of Tax (the Zrust statement), which it also submitted in the original proceeding, stating that Boeing did not receive any FSC/ETI benefits after 31 December 2006, that Boeing does not treat income received after 2006 as eligible for FSC/ETI benefits, that Boeing does not intend to claim FSC/ETI benefits in the future, and that Boeing's 2006 Annual Report states that 2006 will be the final year for recognizing any export tax benefits.[1783] The United States also submits an updated statement of Mr Zrust, dated 3 December 2013 (the Updated Zrust statement) in which Mr Zrust confirms that his statement of July 2009 remains accurate: Boeing did not receive any FSC/ETI benefits after 31 December 2006.[1784] In this statement, Mr Zrust adds that it is Boeing's view that any income recognized after 31 December 2006 is not eligible for FSC/ETI benefits and that Boeing does not intend to claim any FSC/ETI benefits in the future.[1785] The United States adds, in response to a question from the Panel, that from Boeing's point of view, there were no

[1773] European Union's comments on the United States' response to Panel question No. 33, paras. 205 and 207.
[1774] European Union's second written submission, para. 542.
[1775] European Union's second written submission, para. 542.
[1776] European Union's second written submission, para. 542.
[1777] European Union's second written submission, paras. 542 and 798.
[1778] United States' first written submission, para. 490; and Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 20 July 2009, (Exhibit USA-232).
[1779] United States' first written submission, paras. 491 and 492 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1421-7.1428).
[1780] United States' first written submission, paras. 491 and 492 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1428).
[1781] United States' second written submission, para. 451 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1425).
[1782] United States' second written submission, para. 452 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1426).
[1783] Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 20 July 2009, (Exhibit USA-232).
[1784] Updated Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 3 December 2013, (Exhibit USA-382), para. 3.
[1785] Updated Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 3 December 2013, (Exhibit USA-382), para. 4.

income-recognition events (which would include the fulfilment of orders and the recognition of options) after 31 December 2006 that were eligible for FSC/ETI benefits.[1786]

8.586. The United States also states, in response to the Panel's requests for information pursuant to Article 13 of the DSU, that it reviewed the annual reports that Boeing submitted to the U.S. Securities and Exchange Commission (SEC). Those reports do not record Boeing as having recognized FSC/ETI benefits after 2006.[1787]

8.587. The United States does not consider that a statement "signed under penalty of perjury", as requested by the European Union, is necessary to support its argument.[1788] Documents in WTO proceedings are not required to meet this standard in order to be persuasive.[1789]

8.2.5.3 Evaluation by the Panel

8.588. The issue before the Panel is whether, after the expiry of the implementation period, the United States grants or maintains subsidies to Boeing in the form of tax exemptions and tax exclusions pursuant to the FSC/ETI measures and successor legislation. In this regard, the issue in dispute between the parties is whether, as a factual matter, the United States has continued to provide such subsidies to Boeing after 2006. We consider that there are three distinct, but related questions raised by the parties' arguments on this issue. The first is whether the original panel already made a determination as to whether Boeing continues to receive FSC/ETI benefits after 2006. The second is whether it is sufficient for the European Union to establish that, after 2006, FSC/ETI benefits continued to be available, or whether it must establish that Boeing actually *received* FSC/ETI benefits. The third is an evidentiary issue as to whether, based on the evidence submitted by the parties, Boeing did in fact continue to receive FSC/ETI benefits.

8.589. In the original proceeding, as now, the United States did not contest that, between 1989 and 2006, the FSC/ETI measures constituted specific subsidies, but argued that Boeing ceased to receive the subsidies as of 2006.[1790] The United States now argues that the original panel examined this question and, on the evidence before it (which is the same evidence before the current Panel), declined to find that Boeing would continue to receive post-2006 FSC/ETI benefits.

8.590. The original panel confirmed that between 1989 and 2006, the FSC/ETI measures did constitute specific subsidies.[1791] In addressing whether the subsidies continued after 2006, the panel considered that this was a factual issue that went only to the question of the overall amount of the subsidy.[1792] In the original proceeding, however, the European Communities' estimate of the amount of the FSC/ETI subsidies did not include the alleged post-2006 benefits; the European Communities calculated the amount only between 1989 and 2006.[1793] The panel therefore found it was not necessary to reach a conclusion as to whether Boeing did in fact continue to receive FSC/ETI benefits after 2006, since a finding either way would have no impact on the European Communities' amount estimate.

[1786] United States' response to Panel question No. 34, para. 146; and Updated Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 3 December 2013, (Exhibit USA-382).

[1787] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 47, para. 117. The United States notes that Boeing's Chief Executive Officer and Chief Financial Officer certified to the SEC that the reports did not contain an omission of a material fact that would make the reports misleading. The United States emphasizes that "severe civil or criminal penalties may be imposed on any person who knowingly makes a false certification in an annual report to the SEC". The European Union does not consider this persuasive since, compared to the revenues of USD 81.7 billion that Boeing reported for 2012, omitting the USD 12 million FSC/ETI tax break that Boeing received that same year (as estimated by the European Union) would not be significant enough to constitute an "omission of a material fact". (See European Union's first written submission, para. 399 (citing Boeing, *Annual Form 10-K Report to the U.S. Securities and Exchange Commission for the Fiscal Year Ending 31 December 2011*, (Exhibit EU-488), p. 19)).

[1788] United States' second written submission, para. 453.

[1789] United States' second written submission, para. 453.

[1790] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1377.

[1791] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1400.

[1792] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1420.

[1793] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1408 and 7.1427.

8.591. While the original panel declined to find that Boeing would continue to receive post-2006 FSC/ETI benefits, we do not consider that this amounts to a positive finding that Boeing would not continue to receive them. Rather, the panel made no definitive finding either way.

8.592. In this proceeding, however, whether the FSC/ETI subsidies continue after 2006 determines the European Union's claim that the United States has not withdrawn the subsidy.[1794] Now, the question of whether the FSC/ETI benefits continued after 2006, rather than going exclusively to the amount of the subsidies, goes to the continued existence of the subsidies. Further, again unlike the original proceeding, the European Union now does present an estimate of the amount of post-2006 FSC/ETI benefits allegedly received by Boeing. We therefore agree with the European Union that there is no existing determination by the original panel on this issue, and that it is now necessary for this compliance Panel to determine whether the FSC/ETI subsidies have continued after 2006.

8.593. This in turn raises the second issue, which is what the European Union is required to establish in order to demonstrate the existence of the subsidies after 2006. More precisely, the issue is whether the European Union is required to establish that Boeing in fact "received" or "used" the FSC/ETI benefits after 2006, or whether it is sufficient for the European Union to establish that the FSC/ETI benefits were available to Boeing, or that Boeing was *eligible* to use the FSC/ETI benefit after 2006.

8.594. In its second written submission, the European Union argues that once the opportunity to "use" a tax break has arisen, a benefit within the meaning of Article 1.1(b) has already arisen, and this is sufficient to confirm the existence of a subsidy.[1795] Just because a recipient does not elect to "use" that benefit does not, according to the European Union, negate the existence of the subsidy.[1796] The European Union also emphasizes that, even if Boeing has not claimed tax benefits after 2006, nothing in U.S. law prevents it from claiming those benefits in the future. The European Union seems to suggest that this alone means that the subsidies continue, since government inaction alone is insufficient to terminate them.

8.595. We interpret this line of argumentation to imply that the European Union need not show that Boeing in fact continues to receive FSC/ETI benefits. Rather, the fact that the FSC/ETI benefits were *available* to Boeing and, if it wished, Boeing could claim the benefits in the future, is sufficient to demonstrate that the subsidy has not been withdrawn.

8.596. We do not consider that demonstrating that the FSC/ETI benefits were available to Boeing is equivalent to demonstrating that Boeing receives a subsidy within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement. Rather, the European Union must establish that Boeing actually received FSC/ETI benefits after 2006 in order to demonstrate that the subsidies continue to exist.

8.597. First, the European Union appears to argue that the opportunity to use a tax concession indicates that a benefit has been conferred under Article 1.1(b) and therefore that eligibility for a tax concession of itself indicates that a subsidy exists. This argument frames the issue as one relating to the conferral of a benefit under Article 1.1(b) of the SCM Agreement. We consider, however, that the factual question of whether a recipient has "used" or taken advantage of a possible tax concession raises instead the threshold issue of whether there has been a financial contribution under Article 1.1(a)(1) of the SCM Agreement. Specifically, the issue is whether, in the absence of the eligible recipient actually "using" a tax break, there is still a foregoing of revenue otherwise due within the meaning of Article 1.1(a)(1)(ii). Should the Panel find that, absent Boeing having actually received post-2006 FSC/ETI benefits, there is no financial contribution, the European Union's benefit argument has no purchase.

8.598. Second, the original panel did examine the question of whether a financial contribution exists when the parties disagree as to whether a subsidy has been "used", albeit in the context of the Washington State tax measures. There, the panel found that, although a tax exemption was

[1794] European Union's request for the establishment of a panel, paras. 19 and 20; first written submission, para. 398.
[1795] European Union's second written submission, para. 542 and fn 887.
[1796] European Union's second written submission, para. 542 and fn 887.

available to Boeing, Boeing had not "used" the exemption.[1797] The panel noted that the European Communities' position was that the measure constituted, not a financial contribution in the abstract, but "a financial contribution to a specific entity, namely *to Boeing*".[1798] In light of this, in circumstances where the tax exemption was never claimed by Boeing, and where Boeing had taken steps to suggest that it would not claim the exemption, the panel found there was no financial contribution to Boeing in relation to the measure.[1799] The implication of this finding is that, with respect to that measure, the existence of the financial contribution turned on whether a tax concession was "used", not on whether the tax concession was "available".

8.599. In our view, the same reasoning is applicable with respect to the present measures. The European Union's claim is that the United States maintains tax exemptions and tax exclusions under FSC/ETI and successor legislation that benefit Boeing specifically.[1800] The European Union's evidence and arguments are directed at demonstrating that *Boeing* has received eligible foreign income for which it continues to receive FSC/ETI tax benefits. Similarly, as the original panel found with respect to the Washington tax measure, the European Union's case under Article 3 is that there are export-contingent subsidies *to Boeing*.[1801]

8.600. We consider that the European Union must therefore demonstrate that *Boeing* used a tax concession in order for a financial contribution under Article 1.1(a)(1)(ii) of the SCM Agreement to be deemed to exist. If, however, Boeing does not continue to actually receive FSC/ETI benefits on the eligible portions of its foreign income, it receives no financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement, which provides that:

> 1.1 For the purpose of this Agreement, a subsidy shall be deemed to exist if:
>
> (a) (1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:
>
> …
>
> (ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits).

8.601. If a tax concession is made available, but the recipient identified in the complaining party's claim never uses or takes advantage of the concession, the recipient necessarily continues to pay the government revenue that is otherwise due. There is no act of "foregoing" or "failure to collect" that revenue on the part of the government. Nor is it possible for a *potential* foregoing of revenue that is otherwise due to constitute a financial contribution. While Article 1.1(a)(1)(i) provides for a financial contribution to exist where there is a "potential direct transfer of funds", there is no equivalent in subparagraph (ii).[1802]

8.602. This conclusion necessarily leads to the third question before the Panel, which is whether, weighing the evidence presented by the European Union against that presented by the United States, Boeing actually has received tax exemptions and exclusions on the income generated from certain back-dated orders pursuant to the two grandfathered FSC/ETI provisions after 2006.

8.603. The European Union submits the 2006 IRS memorandum as evidence that Boeing remains eligible to receive FSC/ETI benefits through a prospective interpretation of the TIPRA repeal

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[1797] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.140-7.151. This finding was with respect to the Washington State sales and use tax exemptions for construction services and equipment. As the panel explained, "after reviewing all of the evidence, we accept the United States' position that Boeing has not claimed the sales and use tax exemption for construction services and equipment". (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.144).

[1798] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.150 and 7.151. (emphasis original)

[1799] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.151.

[1800] European Union's request for the establishment of a panel, paras. 19 and 20.

[1801] European Union's first written submission, paras. 743-746. See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.150.

[1802] Whether taxpayers actually use various tax concessions for which they are legally eligible will depend on the particular situation of the taxpayer; including, among other things, the existence of other tax concessions which they may also potentially use.

provision.[1803] In response to the Panel's request for information pursuant to Article 13 of the DSU, the United States confirms that the U.S. Internal Revenue Service has not issued any guidance superseding the guidance in that memorandum.[1804] The European Union considers that, so long as the 2006 IRS memorandum has not been superseded or contradicted by any later regulations or guidelines, there is no basis on which to find that the United States has withdrawn the subsidies.[1805]

8.604. Further, the European Union submits the ITR FSC/ETI Report, which identifies a list of orders that the European Union and ITR consider to qualify for continued FSC/ETI benefits.[1806] The list was generated by identifying Boeing aircraft that were ordered before 1 January 2005, but not delivered until after 2011.[1807] The European Union then identifies certain aircraft, the sales of which would generate foreign income eligible for the FSC/ETI tax benefits.[1808]

8.605. The European Union also makes arguments addressing the *likelihood* of Boeing continuing to receive FSC/ETI benefits after 2006. The European Union points out that Boeing's management has a fiduciary duty to its stockholders which compels it to take advantage of the tax concessions to which it is legally entitled, which include the FSC/ETI benefits.[1809] The European Union also points out that, while the U.S. Government is in a "unique position" to verify Boeing's statements as to its corporate tax filings, it refuses to make a definitive verification, relying instead on Boeing's statements as to its own practices and future intentions.[1810] The European Union considers that the Panel should, having reviewed the evidence it has presented, and in light of the above circumstances, draw an inference that Boeing takes advantage of the FSC/ETI tax benefits, and will continue to do so going forward.

8.606. The question before us is not whether FSC/ETI benefits are available to Boeing after 2006, but whether Boeing in fact received FSC/ETI benefits. We do not consider that the European Union establishes that Boeing does receive those benefits. The 2006 IRS memorandum is directed towards whether FSC/ETI benefits are available to Boeing after 2006. The ITR FSC/ETI Report similarly is directed towards demonstrating only that Boeing received income after 2006 that was *eligible* for FSC/ETI benefits. Both fall short of showing that Boeing in fact receives tax concessions which constitute a foregoing by the U.S. Government of revenue that is otherwise due, within the meaning of Article 1.1(a)(1)(ii). Neither the 2006 IRS memorandum nor the ITR FSC/ETI Report is directed at this precise question.

8.607. The European Union's arguments concerning the likelihood that Boeing continued to receive FSC/ETI benefits after 2006, considered in conjunction with the European Union's 2006 IRS memorandum and the ITR FSC/ETI Report, which go to the availability of the FSC/ETI benefit, are in our view insufficient to rebut the United States evidence, which *does* directly go to the question of whether Boeing continued to receive FSC/ETI benefits after 2006, and, in our opinion, constitutes a *prima facie* case that Boeing does not receive FSC/ETI benefits after 2006.

8.608. The United States' evidence consists of statements by James H. Zrust, Boeing's Vice President of Tax, in July 2009 and December 2013, that Boeing did not receive any FSC benefits after 31 December 2006 and that Boeing does not intend to claim any FSC benefits in the future,

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[1803] 2006 IRS memorandum, (Exhibit EU-406), p. 6.

[1804] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 46, para. 116.

[1805] European Union's second written submission, para. 534.

[1806] ITR FSC/ETI Report, (Exhibit EU-24). The list only includes orders that qualify for one aspect of the continued grandfather provisions. (See para. 8.580 above, and European Union's first written submission, para. 396).

[1807] The order and delivery information was obtained from Ascend Worldwide Limited, a "respected aggregator of public information on aircraft orders and deliveries". The Ascend data was tested against, and corresponded exactly with, aircraft data on actual deliveries that Boeing provides on its website. (See ITR FSC/ETI Report, (Exhibit EU-24), pp. 2 and 3).

[1808] The Boeing 777 and 787 are long-haul aircraft, which are used predominantly outside the United States so, according to the European Union, qualify as "export property", the sale or lease of which generates foreign income eligible for the FSC/ETI tax exemptions and exclusions. (See ITR FSC/ETI Report, (Exhibit EU-24), attachment 1: Table of Pre-2005 Orders of Boeing LCA with Anticipated Delivery in 2012 and beyond, pp. 2 and 3).

[1809] European Union's first written submission, para. 400; second written submission, para. 543.

[1810] European Union's comments on the United States' response to Panel question No. 33, para. 202.

noting that Boeing's 2006 Annual Report states that 2006 will be the final year for recognizing any export tax benefits.[1811]

8.609. The United States also states that it reviewed the annual reports that Boeing submitted to the SEC and that those reports do not record Boeing as having recognized FSC/ETI tax benefits after 2006.

8.610. The United States has consistently maintained that the Zrust statements and Boeing's reports to the SEC are accurate[1812], and it is unclear what further steps it could take to verify its arguments.

8.611. **In the absence of evidence submitted by the European Union that goes directly to the question before the Panel (whether FSC/ETI benefits were actually received by Boeing after 2006), and in light of the evidence provided by the United States that no such benefits were received, the Panel is not persuaded that the European Union has established that Boeing has continued to receive FSC/ETI subsidies in the post-2006 period.**

8.2.5.4 Conclusion

8.612. The Panel concludes that the European Union has not established that, after the expiry of the implementation period, the United States grants or maintains subsidies to Boeing in the form of tax exemptions and tax exclusions pursuant to the FSC/ETI measures and successor legislation.

8.2.6 Property and sales tax abatements provided through IRBs issued by the City of Wichita

8.2.6.1 Introduction

8.613. In this Section of the Report, we determine whether the United States grants or maintains specific subsidies to Boeing after the expiry of the implementation period through property and sales tax abatements provided through IRBs issued on Boeing's behalf by the City of Wichita, and has thereby failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.[1813]

8.614. In the original proceeding, these measures were subject to DSB recommendations and rulings as specific subsidies that caused adverse effects.[1814] In its Compliance Communication, the United States advises that the "City of Wichita is applying its Industrial Revenue Bond ("IRB") program in a manner consistent with Article 5(c) of the SCM Agreement. It has not provided any IRBs to Boeing since 2007."[1815] The last IRB issuance to Boeing by the City of Wichita was in 2007.

[1811] Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 20 July 2009, (Exhibit USA-232); and Updated Statement of J. H. Zrust, Vice President of Tax of the Boeing Company, 3 December 2013, (Exhibit USA-382).

[1812] United States' response to Panel question No. 33, paras. 144 and 145; response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 47, para. 117.

[1813] For an explanation of the operation of IRB programmes and the IRBs issued on behalf of Boeing by the City of Wichita, see Section 7.5 above.

[1814] The original panel explained that IRBs are issued by cities and counties in Kansas, on behalf of private entities, in order to assist private entities in raising revenue to fund the purchase, construction or improvement of various types of commercial and industrial property (referred to as "Project Property"). (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.651). As the original panel explained: "{i}n general, the relevant city, which in the case of Boeing and Spirit is the City of Wichita, acts as the 'issuer' of the IRBs. The IRBs are sold to the general public for proceeds that the private entity, on whose behalf the IRBs are issued, uses to acquire or enhance Project Property. During the term of the IRB, legal title to the Project Property remains with the issuer (i.e. the City). The private entity leases the property, making rent payments to the holders of the IRBs that are sufficient to pay the principal and interest on the IRBs. At the end of the term of the IRB, title to the Project Property transfers to the private entity involved." (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.653 (fn omitted)).

[1815] United States' Compliance Communication, para. 10.

8.615. The European Union, in its panel request in this proceeding, challenges the tax abatements provided to Boeing through these IRB issuances as one of the specific subsidies that the United States maintains and which cause adverse effects:

> The State of Kansas and the City of Wichita maintain state and local property and sales tax abatements, pursuant to K.S.A. §§ 79-201a, 79-3606(d), and 79-3640, that presently benefit Boeing in relation to the issuance of IRBs, pursuant to K.S.A. § 12-1741, by the City of Wichita.[1816]

8.616. The primary point of difference between the parties is whether the IRB programme continues to be *de facto* specific within the meaning of Article 2.1(c) of the SCM Agreement. In particular, the parties disagree as to the period of time over which the Panel should determine whether the subsidy programme is specific. The European Union considers that the Panel should determine whether the measure is specific over the entire period of time that the IRB programme has been available. The United States argues that, when assessed over a shorter, more recent period of time, the IRB programme is no longer specific, and that the United States has therefore complied with Article 7.8 of the SCM Agreement because it no longer maintains a specific subsidy within the meaning of Articles 1 and 2.

8.617. The original panel found that the property tax abatements for up to ten years on Project Property and sales tax exemptions on Project Property and services acquired with the proceeds of IRBs, constituted the foregoing of revenue otherwise due within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.[1817] The panel noted that Boeing had sold its Wichita facilities to Spirit Aerosystems (Spirit), on 16 June 2005.[1818] However, for IRBs issued to Boeing prior to the sale of its Wichita facilities to Spirit, where the ten-year tax exemption period continued beyond 2005, Boeing continued directly to receive the tax benefits deriving from the IRBs because Boeing maintained its leasehold interest in the Project Property and subleased the Project Property to Spirit.[1819] The City of Wichita continued to issue IRBs to Boeing following the sale of the Wichita facilities to Spirit in 2005.[1820] In January 2012, Boeing announced that it would close all of its Wichita operations by the end of 2013.[1821]

8.618. The original panel also found that the tax abatements granted pursuant to the IRB programme were *de facto* specific within the meaning of Article 2.1(c) of the SCM Agreement.[1822] Specifically, the panel considered that evidence submitted by the European Communities showing that Boeing and Spirit had received approximately 69% of all IRBs granted by the City of Wichita between 1979 and 2005, while accounting for between 16 and 32% of manufacturing employment in Wichita over that period, suggested that the IRB tax abatements granted to Boeing and Spirit were disproportionately large and therefore specific to certain enterprises within the meaning of Article 2.1(c) of the SCM Agreement.[1823] The Appellate Body upheld the panel's finding, but on the

[1816] European Union's request for the establishment of a panel, para. 21.

[1817] We recall the original panel's acknowledgement that Kansas taxation legislation was amended such that, as of 1 July 2006, Kansas no longer assessed property tax on commercial and industrial machinery and equipment, where such machinery and equipment was purchased after 30 June 2006. Such machinery and equipment had not been subject to sales tax since 2000. Notwithstanding the foregoing, the panel found that the tax abatements in connection with the IRBs were still available in relation to a range of property: (a) commercial and industrial machinery and equipment acquired *before* 30 June 2006; (b) property that was not commercial or industrial machinery or equipment; (c) improvements, repairs or remodelling of commercial and industrial machinery and equipment; (d) real property; and (e) a variety of machinery and equipment excluded from the sales tax exemption. Owing to this conclusion, the panel found that tax abatements granted in connection with the purchase of the foregoing categories of property with the proceeds of the IRBs involved the foregoing of revenue otherwise due, and conferred a benefit on Boeing. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.707-7.712). The categories of machinery and equipment excluded from the sales tax exemption are listed by the original panel at fn 2053 of its report.

[1818] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.649.

[1819] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.662. While the European Communities had also challenged the IRBs issued directly to Spirit as providing a specific subsidy to Boeing, the panel found that the European Communities had failed to demonstrate that the benefit of such subsidies was passed-through to Boeing at the time of the sale of Boeing Wichita to Spirit. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.818 and 7.889).

[1820] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.663.

[1821] A.G. Sulzberger, "Boeing Departure Shakes Wichita's Identity as Airplane Capital", *New York Times*, 18 January 2012, (Exhibit USA-338).

[1822] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.779.

[1823] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.769 and 7.770.

basis of different reasoning as to the relevance of the share of employment of Boeing and Spirit within the Wichita economy from the question of whether the grant of subsidies to those entities was "disproportionately" large.[1824]

8.2.6.2 Main arguments of the parties

8.619. The European Union considers that the subsidy to Boeing continues to be specific within the meaning of Article 2.1(c) of the SCM Agreement. The European Union submits evidence showing that, *during the 1979 to 2012 period*, the City of Wichita issued a total of USD 6.737 billion in tax-exempt IRBs, of which USD 3.576 billion (or 53% of the total amount) was granted to Boeing, and approximately USD 3.963 billion (or approximately 59% of the total amount) was granted to Boeing and Spirit combined.[1825]

8.620. The European Union notes that in evaluating whether the subsidy at issue was specific within the meaning of Article 2.1(c), the original panel took account of the distribution of the subsidy during the entire life of the IRB programme, and the Appellate Body performed its own review of specificity in view of the allocation of tax benefits over the 25 year period between 1979 and 2005.[1826] As there has been no significant change in the structure of the Wichita economy and the importance of the subsidized activities in that economy since 2007, there is nothing to justify a change of focus in assessing specificity to a period shorter than the entire life of the Wichita IRB programme.[1827]

8.621. The United States argues that it is applying the IRB programme in a manner consistent with the SCM Agreement because the subsidy is no longer specific within the meaning of Article 2.1(c) of the SCM Agreement.[1828] The United States considers that, because the IRB programme is no longer specific, it has withdrawn the subsidy within the meaning of Article 7.8 of the SCM Agreement.[1829]

8.622. The United States notes that, according to the European Union's own evidence, of the total amount of IRBs issued *since 2007*, Boeing has received 0% (since no new IRBs have been issued to Boeing since that year) and Spirit has only received 12.6%. There is no basis to consider such an amount to be disproportionately large.[1830]

8.623. The United States considers that, according to the original panel, where there has been a significant change in the structure of the economy, including the importance of the subsidized activities in the economy, it may not be appropriate to assess specificity over the entire period of time that the subsidy has been available. Instead, it would be more probative to assess specificity over a more limited period, corresponding to when such a change in the structure of the economy occurred.[1831] The United States submits evidence that, due to changes in the structure of the Wichita economy, the importance of aircraft manufacturing has reduced considerably. Because of this, the Panel should assess specificity over a more recent period, rather than over the whole period that the subsidy has been available.

[1824] The Appellate Body examined the United States' arguments that the 69% figure was proportionate because of the lack of diversification in the Wichita economy, but concluded that the United States had not provided sufficient reasons supported by evidence to undermine the assessment that the granting to Boeing and Spirit of 69% of the amounts of IRB subsidy represented "an allocation at variance from what would have been expected from the allocation of IRBs in accordance with their conditions for eligibility". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 888 and 889).

[1825] European Union's first written submission, para. 424 (referring to Sorted List of Wichita IRBs, 1979-2012, (Exhibit EU-426)); second written submission, para. 554. The European Union's submissions consistently refer to the period 1979-2012, however the evidence it submits in fact only contains data up until 2011.

[1826] European Union's second written submission, paras. 558 and 559.

[1827] European Union's second written submission, para. 559.

[1828] United States' first written submission, para. 525; second written submission, para. 483.

[1829] As the United States explains in its second written submission, it "does not assert that the measure has been withdrawn simply because Boeing has not been granted IRBs since 2007. The measure has been withdrawn because IRBs no longer constitute a specific subsidy." (See United States' second written submission, para. 484. See also United States' opening statement at the meeting with the Panel, para. 97).

[1830] United States' first written submission, para. 525.

[1831] United States' second written submission, paras. 485 and 486 (citing Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.757).

8.2.6.3 Evaluation by the Panel

8.624. We note that the parties do not dispute that the property and sales tax abatements provided to Boeing in connection with the City of Wichita IRBs constitute subsidies within the meaning of Article 1 of the SCM Agreement. The European Union has submitted evidence setting out the yearly amounts of such tax abatements, which is not contested by the United States.[1832] According to this evidence, Boeing has received USD 7,348,500 in property and sales tax abatements between 2012 and 2014.[1833]

8.625. The contentious issue between the parties is whether the subsidy provided to Boeing is specific. The European Union, as in the original proceeding, does not attempt to argue that the subsidy is *de jure* specific under Article 2.1(a) of the SCM Agreement. As the original panel found, it is clear that the IRB programme is not expressly limited to certain enterprises.[1834] Rather, the European Union argues that the subsidy is *de facto* specific under Article 2.1(c), on the basis that certain enterprises, in this case Boeing and Spirit, have received a disproportionately large amount of the subsidy.[1835]

8.626. Article 2.1(c) requires a panel to determine whether a subsidy which, although on the face of the measure appears to be widely available, is nonetheless allocated in a manner that belies the apparent neutrality of the measure.[1836] Article 2.1(c) sets out a series of factors that indicate whether "there are reasons to believe that the subsidy may in fact be specific". These include, *inter alia*, the granting of "disproportionately large amounts" of the subsidy to certain enterprises. Article 2.1(c) also provides that, in applying the provision, account shall be taken of the extent of diversification of the economic activities within the jurisdiction of the granting authority, as well as the length of time during which the subsidy programme has been in operation.

8.627. The key point of disagreement between the parties is the period of time over which the Panel should assess specificity. The European Union argues that the Panel should assess specificity over the entire period the subsidy has been available, during which Boeing received 53%, and Boeing and Spirit together 59%, of the subsidy.[1837] The United States argues that there has been a change in the structure of Wichita's economy, and the Panel should only assess specificity in the period since that change. Because there have not been any IRBs issued to Boeing since 2007, assessing specificity over a shorter, more recent period of time causes the percentage of the subsidy received by Boeing and Spirit to fall considerably.[1838]

8.628. Both parties' approaches to specificity involve a determination of whether Boeing and Spirit received a disproportionate percentage of the total amount of IRBs issued. We recall, however, that the IRBs themselves do not constitute the subsidy; the tax abatements granted on property purchased using the IRBs constitute the subsidy. Therefore, strictly speaking, assessing whether Boeing and Spirit have received a disproportionate amount of the subsidy should be based on the amount of the tax abatements Boeing and Spirit have received, relative to the amount of tax abatements that all other IRB recipients have received.

8.629. The original panel reconciled using the IRB amounts to determine specificity on the basis that:

> To the extent that other IRB recipients received tax abatements of the same percentage value under the terms of their IRB issuances as Boeing and Spirit, namely 100 per cent tax abatements, the value of the IRBs issued is a good proxy for the

[1832] *Mayor Brewer's Statement on Boeing Announcement*, City of Wichita Web Document, 4 January 2012 (Brewer Statement), (Exhibit EU-418).
[1833] Brewer Statement, (Exhibit EU-418).
[1834] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.743.
[1835] The Panel includes the amounts granted to Spirit in its assessment of specificity even though it has not found that subsidies provided to Spirit "passed through" to Boeing. This is because a subsidy may be *de facto* specific under Article 2.1(c) by virtue of being granted in disproportionate amounts to "certain enterprises". The Panel has taken Boeing and Spirit together to constitute "certain enterprises". The United States acknowledges that the amounts of the subsidy granted to Spirit are relevant to the Panel's specificity finding. (See United States' first written submission, para. 525).
[1836] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 877.
[1837] European Union's first written submission, para. 424; second written submission, para. 554.
[1838] List of All City of Wichita IRBs, 1994-2012, provided by the City of Wichita, (Exhibit EU-420).

> amount of the subsidy. This is because the value of the IRBs represents the value of the property that may be purchased and consequently subject to the tax abatement. To the extent that all tax abatements under the IRBs are of the same percentage value, the value of the property purchased will be in proportion to the value of the tax abatement.[1839]

8.630. In other words, where Boeing uses the amount of an IRB to purchase Project Property it then receives a tax abatement, the value of which is based on the value of the property. There is therefore a directly proportionate relationship between the value of the tax abatement and the value of the IRB such that the IRB figures presented by the European Union can be used as a "proxy" to calculate the percentage of the tax abatements (that is, the percentage of the subsidy) received by Boeing and Spirit, for the purposes of determining whether these enterprises have received a disproportionate amount of the subsidy.

8.631. We consider that this reasoning is applicable in the current proceeding, and that it has necessary implications for the time-period over which the Panel assesses specificity.

8.632. Boeing has received IRBs every year from 1979 to 2007. Each year that Boeing received IRBs it purchased Project Property, in respect of which it received a tax abatement for the following ten years. So, for Project Property purchased with IRBs granted in 2007, Boeing receives ten, annual tax abatements, from 2008 until 2017. Up until 2008, therefore, Boeing received ten separate tax abatements each year, pursuant to the ten preceding years that it had purchased Project Property with IRB funds. Because 2007 was the last year in which Boeing received IRBs, however, each subsequent year Boeing receives one less tax abatement. In 2017, Boeing is due to receive a single tax abatement on Project Property purchased with IRB issuance in 2007.[1840]

8.633. To recall, the value of each yearly tax abatement bears a proportionate relationship to the amount of the IRBs used to purchase the Project Property for which the tax abatements are received. Therefore, the tax abatement that Boeing receives in 2017 bears a proportionate relationship to the IRBs it received in 2007. The sum of the two tax abatements Boeing receives in 2016 bears a proportionate relationship to the sum of the IRBs it received in 2007 and 2006, the three it receives in 2015 to the IRBs received in 2005, 2006, and 2007, and so on.

8.634. The original panel justified using the actual IRB figures as a proxy for the amount of the tax abatements when assessing the percentage of the subsidy received by Boeing and Spirit for the purposes of a specificity analysis, on the basis that the two sets of figures bore a directly proportionate relationship to each other. In the original proceeding, the European Communities challenged the entirety of the subsidy received by Boeing since the inception of the IRB programme in 1979, so it was consistent with the scope of that challenge for the panel to use the entirety of the IRBs granted to Boeing between 1979 and 2005 as an approximation for the value of the subsidy in its specificity analysis. In this proceeding, however, the relevant financial contribution is that which was granted after the end of the implementation period. In other words, we are concerned only with those tax abatements granted to Boeing from 2013 onwards.

8.635. Therefore, it is not consistent with the above reasoning to assess specificity using the IRB figures from the entire period that the IRB programme has been in existence, because these figures do not bear a proportionate relationship to the amount of the tax abatements provided to Boeing after the end of the implementation period. Rather, the amount of the tax abatements Boeing receives after 2012 was determined by the value of the IRBs that were granted from 2002 onwards. We therefore will assess whether the subsidy is *de facto* specific by determining what percentage of the total amount of IRBs provided from 2002 onwards was granted to Boeing and Spirit.

8.636. Based on the evidence submitted by the European Union, from 2002 onwards, Boeing and Spirit received 32% of the total amount of IRBs issued.[1841] We note that this is considerably

[1839] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.756.

[1840] This pattern of tax abatements is set out in table form in the Brewer Statement, (Exhibit EU-418).

[1841] The figure of 32% was obtained by comparing the total amount of IRBs issued from 2002 onwards to Boeing and Spirit (USD 681 million) with the total amount of IRBs issued from 2002 onwards (USD 2.15 billion). The figures of USD 681 million and USD 2.15 billion were obtained by adding the amounts

reduced from the original proceeding, where the panel found that Boeing and Spirit had received 69% of the total amount.

8.637. The IRB programme remains open to any enterprises that seek to purchase, construct, or improve various types of commercial or industrial property.[1842] The availability of the IRB programme is therefore somewhat restricted to entities with the capacity and inclination to make such investments. With this in mind, we do not consider that Boeing and Spirit's receipt of 32% of the total amount of IRBs issued indicates a distribution of the subsidy that is at odds with what one would expect were the IRB programme to be administered in accordance with the SCM Agreement.[1843]

8.638. In light of the foregoing considerations, we find that, after the expiry of the implementation period the subsidies provided to Boeing in the form of property and sales tax abatements related to IRBs issued by the City of Wichita have not been specific within the meaning of Article 2.1(c) of the SCM Agreement.

8.639. A measure which satisfies the definition of a subsidy but is not specific is not inconsistent with the provisions of Part III of the SCM Agreement. As discussed in Section 6 of this Report, we consider that "withdrawal" for the purposes of Article 7.8 should be interpreted in accordance with whether a Member State has brought a measure into conformity with the SCM Agreement. By reducing considerably the proportion of the subsidy programme received by Boeing after the end of the implementation period, the United States has brought the measure into conformity with the SCM Agreement because, as a non-specific-subsidy, the measure is no longer subject to the provisions of Part III of the SCM Agreement.[1844]

8.2.6.4 Conclusion

8.640. In light of our above findings with respect to IRBs issued by the City of Wichita, we conclude that the European Union has not established that, after the expiry of the implementation period, the property and sales tax abatements provided through these IRBs are subsidies that are specific within the meaning of Article 2 of the SCM Agreement. We therefore conclude that these subsidies therefore are no longer subject to the provisions of Part III of the SCM Agreement.

8.2.7 Washington state and local measures

8.2.7.1 Whether the Washington state and local measures constitute specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement

8.2.7.1.1 Introduction

8.641. In this Section of the Report, we evaluate whether the Washington state and local measures that are within the scope of this proceeding[1845] (hereafter the Washington tax measures) constitute specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and whether by granting or maintaining any such subsidies, the United States has failed to withdraw the subsidies within the meaning of Article 7.8 of the SCM Agreement. Specifically, we address the following:

a. Washington State B&O tax rate reduction for the aerospace industry;

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appearing in the column "AMT ISSUED" for the years 2002 to 2012. (See List of all City of Wichita IRBs, 1994-2012, provided by the City of Wichita, (Exhibit EU-420)).

[1842] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.651-7.656.

[1843] We note in this regard that the European Union bears the burden of demonstrating that the subsidy is specific, within the meaning of Article 2.1(c).

[1844] We note that the European Union also argues that the subsidies provided to Boeing through the tax abatements associated with the City of Wichita IRBs are specific pursuant to Article 2.3 of the SCM Agreement. We recall that we have found in Section 7.6.2 of this Report that the European Union's claims under Articles 3.1 and 3.2 of the SCM Agreement are not within the scope of this proceeding with respect to the tax abatements related to the City of Wichita IRBs. We therefore reject the European Union's argument that these subsidies are specific pursuant to Article 2.3 of the SCM Agreement.

[1845] See Section 7.2.1 above for our rulings regarding the Washington state and local measures that are within the scope of this proceeding.

b. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828;

c. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes;

d. Washington State sales and use tax exemptions for computer hardware, software, and peripherals; and

e. City of Everett B&O tax rate reduction.

8.642. The four Washington State tax measures above were first enacted in Washington State under HB 2294 in 2003.[1846] The City of Everett B&O tax rate reduction is a local measure that was enacted in 2004 under Ordinance 2759.[1847] All five measures were at issue in the original proceeding, and were found to constitute specific subsidies within the meaning of Article 1 and 2 of the SCM Agreement.[1848] Of these subsidies, however, only the Washington State B&O tax rate reduction was affirmatively found to cause serious prejudice at the end of the original proceeding.[1849] For the remaining subsidies, the Appellate Body overturned the panel's finding that the subsidies did not cause serious prejudice, but then was unable, or was not requested, to complete the analysis.[1850]

8.643. The European Union claims that the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement because, through the Washington state and local measures, the United States maintains specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.[1851] In its Compliance Communication, the United States asserts that the State of Washington is applying B&O tax rates for aerospace manufacturing and retailing consistently with Article 5(c) of the SCM Agreement.[1852]

8.2.7.1.2 Main arguments of the parties

8.644. The European Union argues that the Washington State B&O tax rate reduction, B&O tax credits for preproduction/aerospace product development, B&O tax credits for property taxes and leasehold excise taxes, sales and use tax exemptions for computer hardware, software, and peripherals, and the City of Everett B&O tax rate reduction, continue to provide specific subsidies to Boeing within the meaning of Articles 1.1 and 2.1(a) of the SCM Agreement, consistent with the findings in the original proceeding and thus have not been withdrawn.[1853]

8.645. As to whether the Washington State B&O tax credit for leasehold excise taxes involves a financial contribution to Boeing, the European Union argues that this measure is an "expansion" of, and operates in precisely the same manner as, the B&O tax credit for property taxes, which the original panel found was a specific subsidy.[1854] In response to the United States' argument that Boeing has never claimed the B&O tax credit in respect of leasehold excise taxes, the European Union argues that it has met its burden by: (a) identifying property being leased by Boeing that is subject to the Washington State leasehold excise taxes; and (b) identifying the

[1846] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.41-7.43.
[1847] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.306-7.308.
[1848] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.302 and 7.354. These findings were not disturbed on appeal. The B&O tax credit for property taxes was before the original panel prior to the amendment under HB 2466 to extend the availability of the credit to leasehold excise taxes.
[1849] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1801-7.1824 (with respect to the Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction); and 7.1825-7.1828 (with respect to the preproduction tax credit, the property tax credit and the sales and use tax exemption).
[1850] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1245-1273 (with respect to the Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction); and 1331-1346 (with respect to the preproduction tax credit, the property tax credit and the sales and use tax exemption). For a more detailed explanation of the Appellate Body's findings with respect to the Washington tax measures, see paras. 7.46-7.51 above.
[1851] European Union's request for the establishment of a panel, para. 17.
[1852] United States' Compliance Communication, para. 9.
[1853] European Union's first written submission, paras. 430-474.
[1854] European Union's first written submission, paras. 475-491.

value to Boeing of the B&O tax credit for leasehold excise taxes.[1855] Further, the European Union submits a Washington State document indicating the value of these tax credits.[1856] The European Union considers that the burden has shifted to the United States to demonstrate that Boeing is not receiving this subsidy.

8.646. The United States does not dispute that the Washington State B&O tax rate reduction, B&O tax credits for preproduction/aerospace product development, B&O tax credits for property taxes, sales and use tax exemptions for computer hardware, software, and peripherals, and the City of Everett B&O tax rate reduction continue to provide specific subsidies. Rather, the United States argues that they are being applied consistently with Article 5(c) of the SCM Agreement because the subsidies are too small to cause adverse effects.[1857] The United States also argues that the Washington State B&O tax credit for leasehold excise taxes does not constitute a financial contribution within the meaning of 1.1(a)(1)(ii) of the SCM Agreement as Boeing does not claim the B&O tax credit for leasehold excise taxes.[1858] According to the United States, the European Union cannot fulfil its burden of proof by establishing that Boeing is *eligible* to claim the credit. The European Union must show that Boeing *claimed* the credit, which it did not.[1859]

8.2.7.1.3 Evaluation by the Panel

8.647. In Section 7.2 of this Report, we explain that the Washington State B&O tax credit for property taxes, as modified by HB 2466 to additionally be available for leasehold excise taxes, is in our view a single measure, the availability of which has simply been modified by HB 2466.[1860] This being so, we do not consider it necessary for the European Union to demonstrate that the B&O tax credit for leasehold excise taxes exists as a self-standing financial contribution, distinct from and additional to the financial contribution that the original panel found existed in respect of the original Washington State B&O tax credit for property taxes prior to its amendment by HB 2466. This being so, the United States' argument that Boeing has never claimed the B&O tax credit with respect to leasehold excise taxes does not go to the "existence" of the B&O tax credit for leasehold excise taxes as a financial contribution, distinct from the B&O tax credit for property taxes. Rather, the issue of whether Boeing has claimed the B&O tax credit in respect of leasehold excise taxes concerns the overall amount of revenue otherwise due which has been foregone in relation to the B&O tax credit, available for both property taxes and leasehold excise taxes.

8.648. Each of the Washington state and local measures that this Panel has found to be within the scope of this proceeding has previously been found by the original panel to constitute a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement; namely:

a. Washington State B&O tax rate reduction for the aerospace industry;

b. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828;

[1855] European Union's second written submission, para. 582 (citing European Union's first written submission, paras. 485-487); and Snohomish County Council Lease Approval, Dreamlifter Land and Building Lease (25 July 2012), (Exhibit EU-447), exhibit C.

[1856] European Union's second written submission, para. 582; Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435); and Washington State Subsidies to Boeing's LCA division, (Exhibit EU-38). The European Union notes that the United States did not respond to the Panel's request for "information and documents demonstrating whether Boeing leases buildings or land meeting the criteria for this tax credit", nor did it assert that Boeing did not lease any buildings or land meeting the criteria for this tax credit. (See European Union's second written submission, para. 583 (citing United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 53, para. 123; and United States' communication in response to the Panel's request for information pursuant to Article 13 of the DSU, dated 22 March 2013 (Exhibit USA-176) (responding to question No. 53))).

[1857] United States first written submission, paras. 494-509; and second written submission, paras. 465-474.

[1858] United States' first written submission, para. 510 (citing United States' communication in response to the Panel's request for information pursuant to Article 13 of the DSU, 22 March 2013, (Exhibit USA-176), p. 2).

[1859] United States' second written submission, para. 477.

[1860] See para. 7.10 above.

c. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes;

d. Washington State sales and use tax exemptions for computer hardware, software, and peripherals; and

e. City of Everett B&O tax rate reduction.

8.649. We see no basis for revisiting the original panel's conclusions that the Washington state and local measures identified in paragraph 8.641 above are specific subsidies.[1861]

8.2.7.2 Amount of the subsidy

8.650. The parties disagree in several respects as to the amounts of the various Washington state and local subsidies. Each party provides estimates of the alleged amounts in question from 2007 to 2011-2012, as well as projections of the amounts of subsidies from 2012-2013 through 2023 or 2024, whenever the tax subsidy was originally set to expire.[1862]

8.2.7.2.1 Main arguments of the parties

8.651. The European Union presents separate estimates for the amounts provided, or forecast to be provided, by each of the five Washington tax subsidies, between 2007 and 2024. It relies on a number of different sources to support its estimates, depending not only on the particular subsidy, but also on the time-period over which it is estimating the amount.

8.652. For the *Washington State B&O tax rate reduction*, the European Union estimates the amounts as being approximately USD 350.1 million between 2007 and 2011, USD 94.4 million in 2012 and a further USD 2.53 billion between 2013 to 2024[1863] (or USD 210.8 million annually).[1864] This amounts to an estimated tax reduction of USD 2.62 billion from 2012 to 2024. For the figures from 2007 to 2011, the European Union relies on the same evidence that the original panel used to calculate the amount of this subsidy, which is a spreadsheet provided by the Washington State Department of Revenue dated from 2005 and a Washington State presentation from September 2003.[1865] For the estimates for the annual amounts for 2012 until 2024, however, the European Union relies on a report prepared by International Trade Resources (ITR Report).[1866]

[1861] We note that the European Union also argues that these Washington state and local measures are specific pursuant to Article 2.3 of the SCM Agreement. We recall that we have found in Section 7 of the Report that the European Union's claims under Articles 3.1 and 3.2 are not within the scope of this proceeding with respect to these Washington state and local measures. We therefore do not further address the European Union's argument that these subsidies are specific pursuant to Article 2.3 of the SCM Agreement.

[1862] The City of Everett B&O tax rate reduction is available until 2023. All the remaining Washington state and local subsidies were originally available until 2024. We note that on 11 November 2013, the Washington State Legislature passed SSB 5952, which extends the tax measures in HB 2294 from 1 July 2024 until 1 July 2040, contingent upon Boeing siting the production of the 777X in Washington State. In our preliminary ruling of 18 September 2014, we declined to include this extension within the scope of this proceeding. (See Reasons for Declining the European Union's Request for Leave to File an Additional Submission Regarding SSB 5952 at Section 7.7). Our findings on amount therefore cover only the period over which the Washington state and local subsidies were originally planned to be available, and only address the Washington state and local subsidies granted with respect to aircraft for which Boeing currently receives revenue; i.e. that are currently being delivered. The 777X is yet to enter fully into production, and first deliveries of the 777X are not scheduled to begin until 2020. (See Ascend data base, Deliveries made, data request as of 22 September 2015, (Exhibit EU-1660)).

[1863] European Union's first written submission, para. 430.

[1864] Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).

[1865] European Union's first written submission, paras. 430 and 439 and fn 1094; Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.216-7.220 and 7.252-7.258; "Washington State and the Boeing Company: Working Together for the Boeing 7E7 Dreamliner", Continuing Support and Collaborative Actions, Presentation at Greenville, SC, September 2003 (Washington State presentation), (Exhibit EU-427); Washington State Department of Revenue Final HB 2294 Fiscal Note – 20-Year Spreadsheet, Commercial Airplane/Component Industry Tax Incentives (Washington State spreadsheet), (Exhibit EU-428); and Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).

[1866] European Union's first written submission, para. 440; International Trade Resources Report, *Estimated Value of Washington State's B&O Tax Rate Reduction for Boeing's Civil Aircraft Division*

8.653. With respect to the *Washington State B&O tax credits for both preproduction/aerospace product development and property taxes*, the European Union originally submitted its own amount estimates.[1867] These estimates were also based on both the evidence used by the original panel, and a 2012 study by Washington State Department of Revenue which purports to estimate the taxpayer savings that would accrue from eliminating certain tax exemptions (the 2012 Study).[1868] The European Union subsequently adopted the United States' estimates of the amounts of these subsidies, noting that the United States' estimates were in fact higher than its own.[1869] The European Union also uses the 2012 Study as evidence for its estimate of the amount, between 2012 and 2015, of the portion of the Washington State B&O tax credits in respect of leasehold excise taxes (which only became available in 2012).[1870] From 2016 until 2024, the European Union notes that Boeing leases the Dreamlifter Operations Center in Washington State. It estimates what Boeing is eligible to receive from the subsidy by calculating Boeing's yearly rent for those facilities, and then calculating what Boeing should receive based on the rate reduction provided by the B&O tax credit.[1871]

8.654. For the Washington State *sales and use tax exemptions*, the European Union relies on the same evidence used by the panel for the amount findings in the original proceeding, but for the periods 2007 to 2011 *and* 2016 to 2024.[1872] For the intervening years; i.e. 2012-2015 inclusive, the European Union relies on the 2012 Study.[1873] The European Union justifies this departure from the estimates on which the original panel relied for the 2012-2015 period on the basis that the 2012 Study shows that the other material available to the European Union significantly undervalues the benefit to Boeing from these tax exemptions. The European Union accordingly estimates on the basis of the 2012 Study (based on the assumption that Boeing receives 80% of the total value of these tax exemptions to the aerospace industry) that the amount of this subsidy to Boeing was USD 9.83 million, 11.52 million, 13.02 million and 13.69 million in 2012, 2013, 2014, and 2015, respectively.[1874]

8.655. Finally, with respect to the *City of Everett B&O tax rate reduction*, the European Union also uses the evidence relied on by the original panel for its estimate of the amount of the subsidy from 2007 to 2011.[1875] For the period from 2012 to 2023, the European Union bases its estimate on figures received from the City of Everett representing the total amount of tax revenue received (and forecast to be received) by the City of Everett from Boeing.[1876] The European Union works backwards from this figure to calculate the value of this tax rate reduction to Boeing.[1877] The

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(2012-2024), (1 March 2013) (ITR Report), (Exhibit EU-25); and Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).

[1867] European Union's first written submission, para. 453 and fns 1139-1144.

[1868] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.217, 7.257 and fn 1416; Washington State presentation, (Exhibit EU-427); Washington State spreadsheet, (Exhibit EU-428); Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435); and Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).

[1869] European Union's second written submission, paras. 575-577.

[1870] European Union's first written submission, para. 487; Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435).

[1871] European Union's first written submission, para. 485; Snohomish County Council Lease Approval, Dreamlifter Land and Building Lease (25 July 2012), (Exhibit EU-447), exhibit C.

[1872] European Union's first written submission, paras. 496 and 497; Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.258; Washington State presentation, (Exhibit EU-427); Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38); and Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes* (January 2012), (Exhibit EU-435).

[1873] European Union's first written submission, para. 497; and Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435).

[1874] European Union's first written submission, para. 497.

[1875] European Union's first written submission, paras. 512 and 513 (referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.353; and State and Local Subsidies to Boeing LCA Division (Original Exhibit EC-27), (Exhibit EU-451), "City of Everett Local B&O Tax Rate Reduction" row and fn 14 (explaining methodology)).

[1876] European Union's first written submission, paras. 514-516; Forecast of Boeing's Gross Revenue and Taxation in the City of Everett, and accompanying note from City of Everett August 2012 FOIA Response, (Exhibit EU-450).

[1877] City of Everett's B&O Tax Rate Reduction Estimates for 2012-2023, (Exhibit EU-452).

European Union notes that the United States only provides figures for the total amount of tax revenue to be paid by Boeing, and does not actually present a calculation, based on these figures, of the amount of the subsidy to Boeing.[1878] The European Union also considers that the United States' estimates cannot be authenticated and should not be relied upon.[1879]

8.656. The United States bases its estimates of the amount of the Washington State B&O tax rate reduction, B&O tax credits for preproduction/aerospace product development, B&O tax credits for property taxes and leasehold excise taxes, and sales and use tax exemptions for computer hardware, software, and peripherals on figures contained in Exhibit USA-264 (BCI), which it states are the calculations and estimates of the Washington State Department of Revenue of the value to Boeing of these subsidies.[1880] The United States explains that the Washington State Department of Revenue's calculations indicate the value of each tax measure for the years 2006 to 2012 based on actual amounts, and forecast the value for years 2013 through 2024.[1881] The United States argues that Boeing does not claim the B&O tax credit for leasehold excise taxes, and that it is insufficient for the European Union to establish that Boeing is eligible to claim the tax credit; it must show that Boeing actually received it.[1882]

8.657. With respect to the evidence provided by the European Union in support of its estimates, the United States considers that the evidence used by the original panel (on which the European Union partly relies to estimate the amounts of the Washington State subsidies other than the B&O tax credit for leasehold excise taxes) is now outdated and should not be relied upon.[1883] The United States also considers that the ITR Report, which estimates the total amount of the B&O tax rate reduction from 2012 to 2024, then divides that total evenly over each year of that period, over-allocates revenue to the earlier years of that period.[1884]

8.658. For the *City of Everett B&O tax rate reduction*, the United States submits evidence only as to Boeing's actual and forecast tax revenue to the City of Everett.[1885] It does not submit an estimate of the resulting amount of the City of Everett B&O tax rate reduction.

8.2.7.2.2 Evaluation by the Panel

8.2.7.2.2.1 The Washington State B&O tax rate reduction

8.659. The parties' estimates of the annual amounts of this subsidy (both historic from 2007 to 2012 and projected from 2013 to 2024) diverge significantly. The United States' estimate of the amount of this subsidy between 2007-2012 (approximately USD **[***]**) is based on actual amounts reported by the Washington State Department of Revenue.[1886] The United States submitted the Washington State Department of Revenue information originally in response to certain requests of the Panel for information pursuant to Article 13 of the DSU.[1887] The European Union bases its estimate for the 2007-2011 period on the same evidence used by the

[1878] European Union's second written submission, para. 593.
[1879] European Union's second written submission, para. 592.
[1880] United States' first written submission, para. 496; second written submission, paras. 457 and 458. Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI).
[1881] United States' second written submission, para. 457. This information was originally provided by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to questions 48, 49, 51, 52, and 54. (See United States' communication in response to the Panel's request for information pursuant to Article 13 of the DSU, dated 22 March 2013, (Exhibit USA-176); and Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI)).
[1882] United States' second written submission, para. 477.
[1883] United States' first written submission, para. 496.
[1884] United States' second written submission, para. 463.
[1885] United States' first written submission, para. 507; second written submission, para. 473; and City of Everett B&O Tax Revenue, Boeing (formerly Exhibit US-13-327), (Exhibit USA-175) (BCI).
[1886] The Washington State Department of Revenue exhibit states that the figures for 2006 through 2012 are "actual amounts based on activity reported on the combined excise tax return". (Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI), note 1).
[1887] See United States' communication in response to the Panel's request for information pursuant to Article 13 of the DSU, 22 March 2013, (Exhibit USA-176) (providing additional information with respect to questions 48, 49, 51, 52, and 54 of the Panel's Article 13 request); and Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI).

original panel to estimate the amounts of this subsidy for 2004-2006; namely, a Washington State presentation from September 2003[1888] and a spreadsheet prepared by the Washington State Department of Revenue at the time that HB 2294 was being finalized, showing the projected value of the B&O tax rate reduction to the commercial airplane/component industry as a whole (of which Boeing's share is 65%).[1889] The European Union argues that the United States' 2006-2012 figures appear to indicate **[***]** revenue for Boeing Commercial Airplanes than is reported in Boeing's annual financial statements.[1890] The United States says that estimates based on actual tax data are inherently more reliable than calculations that rely on estimates of that same data.

8.660. We consider the United States' estimates of the amount of the Washington State B&O tax rate reduction to Boeing for the 2007-2012 period, based as they are on the actual receipts of the revenue authority from the taxpayer, to be the best evidence of the amount of the subsidy to Boeing for the 2007-2012 period. This information was provided by the United States in response to a request for information by the Panel under Article 13 of the DSU. The United States has confirmed, in response to concerns raised by the European Union regarding the authenticity of Exhibit USA-264 (BCI), that the figures in question were provided to the United States by the Washington State Department of Revenue.[1891] We have no reason to suspect that this information was not provided in good faith.

8.661. As to the estimates of the annual amount of the Washington State B&O tax rate reduction for the years 2013 through 2024, the United States relies on the Washington State Department of Revenue projections contained in the same Exhibit USA-264 (BCI), while the European Union relies on estimates prepared by ITR for 2012-2024. The Washington State Department of Revenue 2013-2024 forecasts are described in Exhibit USA-264 (BCI) as being **[***]**.[1892] The European Union notes that the United States has not provided or otherwise made available a copy of this forecast, and submits that the European Union's estimate, prepared by ITR, is based on projected LCA deliveries in Boeing's own *Current Market Outlook*, and therefore is likely to be a more accurate estimate of Boeing's future deliveries (and thus revenues).[1893] The United States argues that the Washington State Department of Revenue's forecasts are more reliable than ITR's as the Washington State Department of Revenue is well positioned to provide a reliable estimate of the State of Washington's own tax revenue, and the estimate is based on the most recent revenue forecast for the state, combined with the most up-to-date information about the industry as a whole, and Boeing in particular.[1894] The United States offers that the **[***]**.[1895] According to the United States, the Washington State Department of Revenue's projections are based on a more sophisticated analysis than the simplistic and flawed assumptions underlying the European Union's estimates.[1896]

8.662. As already mentioned, the European Union's estimates of the annual amount of the Washington State B&O tax rate reduction from 2012-2024 are based on the ITR Report. ITR's estimates are derived by estimating Boeing's total LCA revenues in Washington State from 2012 until 2024 (the year until which the subsidy is available) based on an assumption in Boeing's 2012 *Current Market Outlook* that global demand for LCA in 2021-2031 will be 31,980 aircraft with a market value of USD 4,390 billion. ITR assumes that Boeing will supply half of this demand, and subtracts Boeing Commercial Airplanes' 2012 reported revenues (USD 49.1 billion) from half of USD 4,390 billion (USD 2,195 billion) to arrive at Boeing's estimated total LCA revenue for 2013-2031 (USD 2,145.9 billion). In order to arrive at an estimated total LCA revenue for the 12 years 2013-2024 from the 19-year 2013-2031 estimate, it multiplies USD 2,145.9 billion by 12/19. It makes adjustments to reflect that Boeing's commercial airplane revenues also include revenues attributable to 787s produced in South Carolina (which are not revenues subject to Washington State B&O tax). After arriving at a total revenue figure for 2013-2024 that does not include South Carolina revenues, ITR multiplies this number (USD 1,306.6 billion) by the B&O tax

[1888] Washington State presentation, (Exhibit EU-427).
[1889] Washington State spreadsheet, (Exhibit EU-428). See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.254.
[1890] European Union's second written submission, para. 571.
[1891] United States' second written submission, para. 458.
[1892] Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI), note 3.
[1893] European Union's second written submission, para. 572.
[1894] United States' second written submission, para. 460.
[1895] United States' second written submission, para. 460 and fn 652.
[1896] United States' second written submission, para. 460, fn 652.

rate reduction of 0.1936%, to arrive at an estimated tax reduction of USD 2,529.7 million for the period 2013-2024.[1897] When divided equally over the years 2013-2024, this amounts to a subsidy to Boeing of USD 210.81 million per year for every year from 2013-2024.[1898] The European Union considers that this evidence is the best available evidence as to the amount of the B&O tax rate reduction, because the United States' figures cannot be relied on.[1899]

8.663. The United States takes issue with the European Union's suggestion that the ITR estimates are based on Boeing's own commercial projections. It also questions the credibility of the ITR estimates because of an absence of continuity between the pre-2012 and post-2012 estimates, noting that the 2012 estimate is USD 94.4 million, which then jumps to more than twice that at USD 210.8 million in 2013 and every year thereafter until 2024. The United States alleges that the "fundamental problem" with the ITR methodology is that it is based on an estimate of Boeing's total revenue for 2012-2031 that assumes the world market for aircraft will double in 20 years.[1900] It then allocates that total revenue evenly over each year of that 20-year period, ignoring that Boeing's revenue would be expected to increase gradually each year. This leads to an over-allocation of revenue to Boeing in the early years of the 20-year period that in reality would not be realized until over a decade later in the latter years of the 20-year period, thereby inflating the amount of the B&O tax rate reduction over the early years.[1901]

8.664. The accuracy of estimates of the post-2012 amount of the Washington State B&O tax rate reduction to Boeing depends to a large extent on the accuracy of the estimates of Boeing's expected revenues from future deliveries of LCA manufactured in the State of Washington. The United States refers to **[***]** as the basis for the Washington State Department of Revenue's projections of the value of the Washington State B&O tax rate reduction to Boeing in the post-2012 period. The ITR Report, by contrast, bases its estimates on Boeing's 2012 *Current Market Outlook* and in particular, Boeing's prediction that global demand for LCA in 2012-2031 will be 31,980 aircraft with a market value of USD 4,390 billion, of which Boeing could expect to supply approximately 50%.[1902] The United States does not provide any further detail regarding the Global Insight forecast and in the absence of any further information, we cannot evaluate the assumptions underlying **[***]** against the 2012 *Current Market Outlook* LCA demand and revenue forecasts. However, the United States does not specifically criticize the demand and revenue forecasts in the 2012 *Current Market Outlook*. Rather, it criticizes what ITR does with the notional revenues represented by Boeing's assumed share of those LCA sales between 2013-2031, which is to apportion the amount equally over every year to arrive at a uniform annual value of the B&O tax rate reduction for the years 2013 to 2024, without accounting for the fact that in reality, Boeing's revenues (and the corresponding value to Boeing of the B&O tax rate reduction) would be expected to increase gradually over the period.

8.665. We consider this latter criticism is valid because the effect of ITR's apportionment methodology is to enlarge Boeing's estimated LCA revenues for the period immediately after 2012, which is the period relevant to the Panel's estimate of the amount of the Washington State B&O tax rate reduction.[1903] It is this methodological flaw that explains why the ITR estimate for 2012 is USD 94.4 million, based on Boeing commercial airplanes' actual reported revenues of USD 49.1 billion, and a B&O tax rate reduction of 0.1936%, while for 2013, the estimated amount is dramatically higher at USD 210.8 million, based on an apportionment of Boeing's assumed LCA revenues from 2013-2031.

[1897] ITR Report, (Exhibit EU-25), paras. 5-15.
[1898] Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).
[1899] Specifically, the European Union notes that the United States' estimates are provided on "a single piece of paper", with no signs of authenticity. (See European Union's second written submission, para. 569). However, in its second written submission, the United States confirms that the figures were provided by the Washington State Department of Revenue and explains that they are not provided on Department of Revenue letterhead because the Washington State Department of Revenue does not print internal documents on its own letterhead. (See United States' second written submission, para. 458 and fn 647).
[1900] United States' second written submission, para. 463.
[1901] United States' second written submission, para. 463.
[1902] ITR Report, (Exhibit EU-25), paras. 5 and 6.
[1903] By way of comparison, the estimates on which the original panel relied contemplated that the projected amount of these subsidies in 2023 would be almost double the amount of the subsidies in 2012. See Washington State spreadsheet, (Exhibit EU-428).

8.666. For purposes of evaluating the credibility of both the United States' and the European Union's estimates, we have made our own calculations of the estimated amount of the B&O tax rate reduction to Boeing for 2013 and 2014, based on the Boeing commercial airplanes segment's reported LCA revenues for those years, and adjusting for revenues associated with 787 production in South Carolina in the same manner as in the ITR Report. We present those estimates below, along with the corresponding United States and European Union estimates, as well as the Washington State Department of Revenue estimates from the 2005 worksheet that formed the basis for the original panel's amount estimates for 2004-2006.

Table 3: Estimates of amount of Washington State B&O Tax Rate Reduction 2012-2015

	United States (Washington State Department of Revenue)[1904]	European Union (ITR)[1905]	Washington State Department of Revenue 2005 worksheet[1906]	Panel[1907]
2012	**[***]**	94.4	92.6	94.4
2013	**[***]**	210.8	98.8	97.2
2014	**[***]**	210.8	105.2	108.1
2015	**[***]**	210.8	111.9	No reported Boeing commercial airplanes revenue figure for 2015

All figures above in USD (million)

8.667. Although the Panel's calculations are very approximate, they are generally **[***]** than the United States' estimates, and lower than the European Union's. They are interestingly quite close to the projections based on the Washington State Department of Revenue 2005 spreadsheet and September 2003 Presentation which formed the basis for the original panel's estimates of the amount of these subsidies for 2004-2006, even though those estimates were based on Boeing delivering the 787 beginning in 2008 rather than late 2011, as occurred in reality. We elsewhere explain the methodological flaw in the European Union's estimates that renders them, in our view, not credible as estimates of the amount of the B&O tax rate reduction received by Boeing in the years from 2012-2015. We find it more difficult to understand why the United States' estimates also vary from our calculations. The United States has not provided any explanation of how the Washington State Department of Revenue projections for 2013 and subsequently were arrived at, other than to suggest that the 2013-2024 forecasts are "based on" **[***]**.[1908] Given that B&O tax is levied on revenues, it is reasonable to expect that the higher Boeing's reported revenues from sales of airplanes, the greater the reduction in B&O tax.[1909] It appears to us from the table above

[1904] Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI). The 2012 figure is based on actual reported revenue data for the relevant fiscal year (i.e. 1 July-30 June) while the other numbers are based on projected revenues.

[1905] ITR Report, (Exhibit EU-25); and Washington State Subsidies to Boeing's LCA Division, (Exhibit EU-38).

[1906] Washington State spreadsheet, (Exhibit EU-428), based on the assumption from the September 2003 Presentation that 65% of the totals reported in the spreadsheet will accrue to Boeing. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.254; and Washington State presentation, (Exhibit EU-427)).

[1907] The Panel has taken the reported revenues for Boeing's commercial airplanes segment for 2012, 2013 and 2014 (USD 49.1 billion, 53 billion, and 60 billion, respectively), as reported in Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A: Boeing's Annual Report on Form 10-K for the fiscal year ended 31 December, 2014, p. 20. To adjust for 787 revenues from Boeing's South Carolina operations in the same manner as ITR, it has subtracted from these revenue figures USD 347.4 million for 2012, USD 2.78 billion for 2013 and USD 4.17 billion for 2014. (see ITR Report, (Exhibit EU-25), paras. 12 and 13). It then multiplies the remaining Washington LCA revenue numbers by the value of the B&O tax rate (0.1936%).

[1908] United States' second written submission, fn 652.

[1909] Both the 2005 estimates and the new estimates provided by the Washington State Department of Revenue for the years 2012 compared to 2013-2015 are generally consistent in terms of the pattern of

that there is a correlation between the United States' estimates for 2014 and 2015 and the Panel's estimates for 2013 and 2014. In particular, the United States' estimates appear to lag those of the Panel. This may reflect the fact that the Washington State Department of Revenue figures appear to be based on the fiscal year in Washington State, while the revenue figures on which the Panel based its estimates are as reported by Boeing in its annual reports, which uses a 31 December year-end.

8.668. Although the European Union's estimates are problematic, we are also uncertain how the Washington State Department of Revenue estimates, based as they appear to be on a fiscal year ending on 30 June, translate to the calendar year. Boeing's reported revenues from LCA have increased since 2012 and our concern is that the United States' figures may not actually represent the value of the B&O tax rate reduction for the 2013-2015 calendar years because they appear to cover a different annual reporting period.

8.669. The Panel does not have before it Boeing's revenue figures for the year ending 31 December 2015. We therefore cannot estimate the amount of the B&O tax rate reduction received by Boeing for 2015 in the same way that we have estimated the 2013 and 2014 amounts. We are confident, however, that the amount of the Washington State B&O tax rate reduction for 2015 would be higher than the United States' fiscal year 2015 estimate. We consider that the 2015 figure is more likely closer to, but also higher than, the estimate that the Washington State Department of Revenue provides for fiscal year 2016, owing to the discrepancies arising from different reporting periods described above, and based on other evidence before the Panel that would seem to indicate that Boeing's commercial airplanes revenues for 2015 would be higher than for 2014 owing to record deliveries in that year.[1910] We have decided that it is reasonable to estimate the 2015 figure to be USD 120 million.

8.670. **Accordingly, the Panel estimates that the amount of the Washington State B&O tax rate reduction for 2013, 2014 and 2015 is approximately USD 97 million, 108 million and 120 million, respectively, for a total of USD 325 million over those three years.**

8.2.7.2.2.2 The amounts of the Washington State B&O tax credits for preproduction/aerospace product development and for property taxes and the Washington State sales and use tax exemptions for computer hardware, software, and peripherals

8.671. The European Union accepts the United States' estimates of the amounts of the Washington State B&O tax credits for preproduction/aerospace product development and for property taxes.[1911] It does so despite its complaints generally that the information contained in Exhibit USA-264 (BCI) is not adequately authenticated and does not explain how the projections were derived, and by whom.[1912] It notes, however, that the United States' estimates of the amounts of the B&O tax credits for preproduction/aerospace product development and for property taxes are in fact significantly higher than the European Union's estimates based on the original panel's methodology.[1913] It then advances other reasons why the European Union *could* accept the United States' estimates, if the Panel were prepared to accept them despite their lack of "authentication".[1914] We consider that the United States has adequately addressed the origin of the Washington State Department of Revenue estimates. Given that there is no other disagreement between the parties regarding the amounts, we accept the United States' estimates of the amounts of these subsidies.[1915]

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gradually increasing annual values of the B&O tax rate reductions to Boeing, with the 2003 annual projections being somewhat higher than the more recent annual projections.

[1910] Earnings Call Transcript of D.A. Muilenburg on Boeing (BA) Q3 2015 Results, 21 October 2015, (Exhibit EU-1706), p. 4/20.

[1911] European Union's second written submission, paras. 575-577 and 579.

[1912] European Union's second written submission, para. 569.

[1913] European Union's second written submission, paras. 576 and 579.

[1914] European Union's second written submission, paras. 576 and 579. In the case of the B&O tax credits for preproduction/aerospace product development, the European Union explains that the United States' figures do **[***]**. In the case of the B&O tax credits for property taxes, it is because the European Union is prepared to give greater weight to the United States' **[***]**.

[1915] Accordingly, the value of the B&O tax credits for preproduction/aerospace product development for 2007-2012 is USD **[***]**, and for the 2013-2015 period, the amount is USD **[***]**. The value of the B&O tax

8.672. With respect to the sales and use tax exemptions, however, the European Union rejects the United States' estimates, which in this case are **[***]** the corresponding European Union estimates. The European Union relies instead on the evidence used by the original panel for the periods 2007-2011 *and* 2016-2024. For the period 2012-2015, the European Union relies on the 2012 Study. The European Union argues that the United States' estimates do not comport with publicly available information, such as information derived from the 2012 Study.[1916] The United States argues that in truth the European Union's objection to these estimates appears to be that they are lower than the European Union's estimates.[1917]

8.673. The 2012 Study is a 250 page document that purports to list 640 different exemptions found principally in Titles 82 and 84 of the Revised Code of Washington. It says that in some cases, similar statutes are considered together as a single estimate, e.g. retail sales and use tax exemptions for the same product or activity.[1918] The 2012 Study contains a half-page listing of taxpayer savings for state and local sales and use tax exemptions for airplane computer expenditures for the years FY 2012-FY 2015. The European Union adds the state and local savings estimates together and multiplies that sum by 80%, which was estimated to be Boeing's share of this tax measure in the September 2003 Presentation.[1919] The European Union does not explain how the figures in the 2012 Study were calculated, or why these figures are more reliable than the United States' estimates provided by the Washington State Department of Revenue, and whether it is still appropriate to assume that Boeing benefits from approximately 80% of this tax exemption to the aerospace industry. The 2012 Study contains a caution in the introduction that the revenue impacts presented in the study reflect estimated savings to taxpayers and do not necessarily indicate the potential revenue which might accrue to governmental jurisdictions in the absence of the exemptions.[1920] Given the more generalized nature of the information provided in the 2012 Study, we are not persuaded that it is a more reliable estimate of the amount of the sales and use tax exemptions than the Washington State Department of Revenue information provided by the United States. **We therefore accept the United States' estimates of the amount of the sales and use tax exemptions.[1921]**

8.674. With respect to the portion of the B&O tax credits in respect of leasehold excise taxes, the United States argues that, although the European Union has presented evidence that Boeing is eligible to receive the subsidy, Boeing does not actually claim, or receive, credits for the leasehold excise taxes.[1922] The European Union argues that it has met its burden by identifying property leased by Boeing that is subject to leasehold excise tax and identifying the value of the leasehold excise tax credit accruing from the lease.[1923] In particular, it notes that the 2012 Study indicates the value of the B&O tax credits for property *and leasehold excise taxes* on aeroplane facilities.[1924] The 2012 Study, however, provides a single figure of USD 4 million per year from 2012 to 2015 for *both* property and leasehold excise tax credits, which the European Union halves to generate an estimate of the amount of the leasehold excise tax credit.[1925] We do not consider that this constitutes evidence that Boeing actually received the leasehold excise tax credit; the full USD 4 million per year could have been attributable to tax credits in respect of property taxes alone.

credits for property taxes for 2007-2012 is USD **[***]**, and for the 2013-2015, the amount is USD **[***]**. (See Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656) (BCI), (Exhibit USA-264 (BCI)).

[1916] European Union's second written submission, para. 588.

[1917] United States' second written submission, para. 471.

[1918] Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435), p. 1.

[1919] European Union's first written submission, paras. 496 and 497.

[1920] Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435), p. 1.

[1921] Accordingly, the amount of the sales and use tax exemptions for 2007-2012 is USD **[***]**, and for the 2013-2015 period, the amount is USD **[***]**. (See Washington State Tax Information 2006-2024, Boeing Only (formerly Exhibit US-13-656), (Exhibit USA-264) (BCI)).

[1922] United States' first written submission, para. 510; second written submission, para. 477.

[1923] European Union's first written submission, paras. 485-487.

[1924] European Union's first written submission, para. 487; and Washington State Department of Revenue, *2012 Tax Exemption Study: A Study of Tax Exemptions, Exclusions, Deductions, Deferrals, Differential Rates and Credits for Major Washington State and Local Taxes*, (January 2012), (Exhibit EU-435), p. 118.

[1925] See European Union's first written submission, para. 487.

Moreover, the United States' estimate of the B&O tax credit for property taxes for 2012 and 2015, which the European Union accepts, *exceeds* the 2012 Study's reported estimate for the tax credit applied to *both* the property taxes and leasehold excise taxes. The European Union's remaining evidence only demonstrates Boeing's eligibility for the B&O tax credit in respect of leasehold excise taxes, not Boeing's actual receipt of the subsidy.[1926]

8.2.7.2.2.3 The amount of the City of Everett B&O tax rate reduction

8.675. The European Union calculates the amount of the City of Everett B&O tax rate reduction between 2007 and 2011 based on evidence relied upon by the original panel, and between 2012 and 2023, based on revenue forecasts received from the City of Everett.[1927] The United States provides evidence of the actual tax revenues received by the City of Everett between 2007 and 2012, and forecasts of tax revenues between 2013 and 2023 **[***]**.[1928] The United States does not, however, submit its own estimates of the City of Everett B&O tax rate reduction. The European Union submits that the United States' figures lack signs of authenticity, and should be rejected because they fail to value the precise tax benefit, and otherwise do not correspond to the information the European Union received directly from the City of Everett.[1929] The United States notes that certain of the European Union's figures for total reported revenue are greater than those submitted by the United States, and considers that, as a result, the European Union overvalues the amount of the tax rate reduction.[1930]

8.676. Given that the United States submits actual receipts of the revenue from the taxpayer during the 2007-2012 period, we consider it appropriate to base our assessment of the amount of the City of Everett B&O tax rate reduction on these figures as the best evidence of the amount of the subsidy to Boeing.[1931] This information was provided by the United States in response to a request for information by the Panel pursuant to Article 13 of the DSU. Based on the information concerning actual revenue provided in Exhibit USA-175, the Panel calculates that the amount of the City of Everett B&O tax rate reduction between 2007 and 2012 is approximately **[***]**.[1932] For the 2013-2015 period, the United States has submitted forecasted tax revenue accruing to the City of Everett purportedly based on **[***]**, but has not otherwise explained its methodology for determining the projected revenue figures. Absent any explanation from the United States, consistent with our approach in respect of the other Washington tax measures[1933], we consider it appropriate to base the calculation of the amount of the subsidy on projections from the relevant tax authority, in this case, figures from the City of Everett. Based on projected gross revenues and the B&O tax basis provided by the City of Everett, the amount of the City of Everett B&O tax rate reduction totals approximately USD 16.41 million, 17.47 million and 20.22 million in 2013, 2014, and 2015, respectively, as confirmed by the European Union's own calculations.[1934]

[1926] See Snohomish County Council Lease Approval, Dreamlifter Land and Building Lease (25 July 2012), (Exhibit EU-447), exhibit C.

[1927] State and Local Subsidies to Boeing's LCA Division (Original Exhibit EC-27), (Exhibit EU-451); Forecast of Boeing's Gross Revenue and Taxation in the City of Everett, and accompanying note from City of Everett August 2012 FOIA Response, (Exhibit EU-450); and City of Everett's B&O Tax Rate Reduction Estimates for 2012-2023, (Exhibit EU-452).

[1928] City of Everett B&O Tax Revenue, Boeing (formerly Exhibit US-13-327), (Exhibit USA-175) (BCI).

[1929] See European Union's first written submission, para. 514; European Union's second written submission, paras. 591-593; State and Local Subsidies to Boeing LCA Division (Original Exhibit EC-27), (Exhibit EU-451); Forecast of Boeing's Gross Revenue and Taxation in the City of Everett, and accompanying note from City of Everett August 2012 FOIA Response, (Exhibit EU-450); and City of Everett's B&O Tax Rate Reduction Estimates for 2012-2023, (Exhibit EU-452).

[1930] United States' first written submission, para. 508; and City of Everett B&O Tax Revenue, Boeing (formerly Exhibit US-13-327), (Exhibit USA-175) (BCI).

[1931] City of Everett B&O Tax Revenue, Boeing (formerly Exhibit US-13-327), (Exhibit USA-175) (BCI).

[1932] See City of Everett B&O Tax Revenue, Boeing (formerly Exhibit US-13-327), (Exhibit USA-175) (BCI). Knowing that taxes on revenue of up to USD 7 billion are assessed on the basis of a rate of 0.1% between 2007-2012 and therefore amount to USD 7 million, the Panel calculates the value of the City of Everett B&O tax rate reduction by determining Boeing's gross revenues per annum in the City of Everett, the tax on the portion of gross revenues taxed at the regular rate of 0.1%, the tax on the portion of gross revenues taxed at the special rate of 0.025%, and thereafter determining Boeing's resulting tax savings.

[1933] See Sections 8.2.7.2.2.1 and 8.2.7.2.2.2.

[1934] See Forecast of Boeing's Gross Revenue and Taxation in the City of Everett, and accompanying note from City of Everett August 2012 FOIA Response, (Exhibit EU-450); and City of Everett's B&O Tax Rate Reduction Estimates for 2012-2023, (Exhibit EU-452).

8.677. **We therefore find that the amount of the City of Everett B&O tax rate reduction was approximately USD 54.1 million during the 2013-2015 period.**[1935]

8.2.7.3 Conclusion

8.678. In light of our findings above with respect to the Washington state and local subsidies, we conclude that the European Union has established that the following measures involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement:

a. Washington State B&O tax rate reduction for the aerospace industry, in the amount of USD 325 million between 2013 and 2015;

b. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828, in the amount of **[***]** between 2013 and 2015;

c. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes, in the amount of **[***]** between 2013 and 2015;

d. Washington State sales and use tax exemptions for computer hardware, software, and peripherals, in the amount of **[***]** between 2013 and 2015; and

e. City of Everett B&O tax rate reduction, in the amount of USD 54.1 million between 2013 and 2015.

8.2.8 The South Carolina measures

8.2.8.1 Introduction

8.679. In this Section of the Report, we evaluate whether the state and local measures provided by the State of South Carolina in connection with the production and assembly of the 787 in North Charleston[1936] are specific subsidies to Boeing, and whether, by granting or maintaining any such subsidies, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.

8.680. The South Carolina measures properly before us concern different aspects of Boeing's operations in North Charleston and are alleged to involve two incentive packages provided at different times[1937]:

a. Project Gemini: A 2009 incentive package concerning Boeing's second 787 final assembly and delivery facility in North Charleston, South Carolina (the first 787 final assembly and delivery facility located outside the State of Washington).

b. Project Emerald: A 2006 package concerning the 787 fuselage fabrication and integration operations originally operated by Vought Aircraft Industries, Inc. (Vought) and a joint venture between Vought and Alenia Aeronautica (Global Aeronautica). These operations were acquired by Boeing in 2009.

8.2.8.2 The measures at issue

8.681. The European Union claims that the State of South Carolina and its political subdivisions maintain various subsidies for Boeing, related to the production of LCA and LCA components at

[1935] See City of Everett's B&O Tax Rate Reduction Estimates for 2012-2023, (Exhibit EU-452).

[1936] See Section 7.5.1 above for our rulings that these measures are within the scope of this compliance proceeding as "undeclared" measures taken to comply on account of their sufficiently close nexus with the measures the subject of the DSB recommendations and rulings in the original proceeding.

[1937] We recall that the European Union, in its second written submission, also challenged a third package of South Carolina measures, the "Phase II measures", which were announced in 2013 and thus, came into existence only after the European Union's first written submission. In Section 7.5.2 above, we rule that the Phase II measures are outside the Panel's terms of reference.

facilities in North Charleston, South Carolina, through two packages of investment incentives: (a) Project Gemini measures; and (b) Project Emerald measures.[1938]

8.682. The **Project Gemini** measures are the package of financial incentives offered by the State of South Carolina in 2009, allegedly in order to induce Boeing to locate its second 787 final assembly and delivery facility adjacent to the Vought-Global Aeronautica 787 fuselage fabrication and integration complex at Charleston International Airport. The European Union's panel request describes the following eight measures that it challenges as part of the Project Gemini package[1939]:

a. Provision of a long-term lease of government-owned land at preferential rates, pursuant to a Ground Lease Agreement between the Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a Ground Sublease between South Carolina Public Railways and Boeing, as amended.

b. Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Gemini Agreement between Boeing and the State of South Carolina, dated 1 January 2010, funded through state general obligation bonds issued pursuant to Title 11, chapter 41 of the South Carolina Code, as amended by section 5 of H3130, Act No. 124, 2009 S.C. Acts 1092 (H3130), and S.C. Code section 55-11-520, at no cost to Boeing.

c. Property tax reductions under a fee-in-lieu-of taxes Agreement between Charleston County and Boeing dated 1 December 2009, as authorized by Title 12, chapter 44 of the South Carolina Code, including the provision of special source credits as provided for in such agreement, and authorized by S.C. Code section 4-1-175.[1940]

d. Property tax exemptions for Boeing's Large Cargo Freighters (LCFs) pursuant to South Carolina Code section 12-37-220(B)(33), as amended by section 1 of H3482, Act No. 45, 2009 S.C. Acts 763.

e. Reductions of state corporate income taxes through an income allocation and apportionment agreement, entered into pursuant to S.C. Code section 12-6-2320(b), as amended by section 1 of H3130.

f. Provision of corporate income tax credits, as provided for in South Carolina Code section 12-6-3360(E)(1), by virtue of designating the Boeing site in North Charleston as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.

g. Exemption from state sales and use taxes for aircraft fuel, computer equipment, and construction materials, established by sections 2, 3, and 4 of H3130, respectively, and codified at S.C. Code section 12-36-2120(9)(e) and (f), (65)(b), and (67).

h. Establishment of workforce recruitment, training and development programmes for Boeing.

8.683. The **Project Emerald** measures comprise the package of financial incentives offered by the State of South Carolina to Vought in 2006 in connection with the 787 fuselage fabrication and integration complex at a site at Charleston International Airport. The European Union's panel request identifies the following four measures as part of the Project Emerald package[1941]:

a. Provision of a long-term lease of government-owned land at below-market rates, pursuant to a Ground Lease Agreement between Charleston County Aviation Authority

[1938] European Union's request for the establishment of a panel, para. 23.
[1939] European Union's request for the establishment of a panel, para. 24.
[1940] The European Union has subsequently advised that the above-referenced fee-in-lieu-of taxes agreement was a draft, which had been provided by Charleston County. The final agreement (the Boeing FILOT Agreement) is dated 1 December 2010. It is this final agreement to which the European Union refers in its arguments. (European Union's first written submission, fn 1309).
[1941] European Union's request for the establishment of a panel, para. 25.

and South Carolina Public Railways, as amended, and a Ground Sublease between South Carolina Public Railways and Boeing, as amended.

b. Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Emerald Confidential Site Development Agreement, funded through state general obligation bonds issued pursuant to Title 11, chapter 41 of the S.C. Code, at no cost to Boeing.

c. Property tax reductions under a fee-in-lieu-of taxes agreement between Charleston County and Vought, Global Aeronautica, and Boeing, dated 19 December 2006, and assigned to Boeing on or about 10 February 2010, as authorized by Title 12, chapter 44 of the S.C. Code, and provided for in the Project Emerald Confidential Site Development Agreement, including the provision of infrastructure credits as provided for in such agreement, and authorized by S.C. Code section 12-44-70.

d. Provision of corporate income tax credits, as provided for in S.C. Code section 12-6-3360(E)(1), by virtue of designating the Project Emerald site at Charleston International Airport as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.

8.2.8.3 Relevant factual background regarding the Project Gemini and Project Emerald incentive packages

8.2.8.3.1 Project Gemini incentive package

8.684. The Project Gemini measures challenged by the European Union consist of the eight measures related to Boeing's South Carolina 787 final assembly and delivery facility (the Project Gemini facilities and infrastructure) listed in Section 8.2.8.2 above.[1942] The obligations of the South Carolina state and local authorities and Boeing as regards Project Gemini, including the challenged Project Gemini measures listed above, are implemented through three main instruments which we describe briefly below.

8.685. The first is H3130, an Act of the South Carolina General Assembly that was signed into law on 30 October 2009. H3130 amends several South Carolina laws in order to provide for the following:

a. Authorization to issue additional general obligation economic development bonds[1943] in an aggregate principal amount that does not exceed USD 170 million.[1944] The section of H3130 authorizing the additional issuance sets forth legislative findings that the construction of infrastructure as defined under the relevant legislation enhances the recruitment of businesses to the State of South Carolina, facilitates the operation and growth of businesses in the State, and thereby provides significant and substantial direct and indirect benefits to the State and its residents, including employment and other opportunities; that such benefits outweigh the costs of such infrastructure; that for such reasons it is in the best interest of the State to authorize the issuance of economic development bonds subject to the terms and conditions of the relevant legislation; and that such economic development bonds, issued for such purpose, serve a public purpose in fostering economic development and increasing employment in the State. The General

[1942] The first 787 final assembly and delivery facility was established in the State of Washington in 2004.

[1943] *S.C. Code* section 11-41-40 provides that economic development bonds can be used to fund "financing for infrastructure", which includes the following: land acquisition, site preparation, road and highway improvements, water service, wastewater treatment, employee training, environmental mitigation, training and research facilities, and building associated with an air hub facility or located on government land. In order for economic development bonds to be issued, the South Carolina Department of Commerce must first notify the Joint Bond Review Committee and the State Budget and Control Board that the related infrastructure project meets certain requirements, including a minimum investment and contribution to employment. After approval by the Joint Bond Review Committee, the State Budget and Control Board adopts a resolution issuing the bonds. Economic development bonds are backed by the full faith, credit, and taxing power of the State of South Carolina. The monetary value of economic development bonds that the State may issue depends on the provision under which the State issues the bonds.

[1944] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 5.

Assembly makes a further finding that the primary beneficiaries of the issuance of such economic development bonds and the construction of such infrastructure are the State of South Carolina and its residents.[1945]

b. South Carolina's entering into an agreement establishing the allocation and apportionment of the taxpayer's income, provided certain conditions are met, including that the taxpayer is planning a new facility in the State, or expanding an existing facility, the new facility or expansion is certified by the Advisory Coordinating Council for Economic Development in South Carolina as having a significant beneficial economic effect on the region for which it is planned and that its benefits to the public exceed its costs to the public, and the taxpayer requests, prior to 31 October 2015, that South Carolina enter into such an income allocation and apportionment agreement.[1946] The maximum duration of such agreements may be increased from five years to ten years where a number of other conditions are met, one of which is that the taxpayer is planning a new facility in the State and invests at least USD 750 million in real or personal property or both in a single county in the State and creates at least 3,800 full-time new jobs within the county.[1947]

c. Exemptions from sales and use taxes for aircraft fuel, computer equipment, and construction materials.[1948] More specifically, section 2 of H3130 creates an exemption for, respectively, the sales of fuel for the generation of motive power for test flights of aircraft by the manufacturer of the aircraft, and the transportation of an aircraft prior to its completion from one facility of the manufacturer of the aircraft to another facility of the manufacturer of the aircraft. Section 3 of H3130 creates an exemption for sales of computer equipment used in connection with a manufacturing facility. Finally, section 4 of H3130 creates an exemption for sales of construction materials used in the construction of a new or expanded single manufacturing facility. In each case, eligibility for the exemptions is expressly restricted to taxpayers investing at least USD 750 million in real or personal property in a single manufacturing facility over a seven-year period and creating 3,800 full-time new jobs at the manufacturing facility over that period.[1949]

8.686. The second principal Project Gemini-related instrument is the Project Gemini Agreement, dated 1 January 2010, between Boeing and the South Carolina Department of Commerce (on behalf of the State of South Carolina).[1950] The Project Gemini Agreement records generally the state-level commitments made by South Carolina to Boeing, and the commitments made by Boeing to South Carolina, in connection with Boeing's establishment of the second 787 final assembly and delivery line.

8.687. In return for Boeing meeting certain minimum employment and investment requirements, South Carolina agrees to seek approval for: (a) the issuance of economic development bonds in the amount of USD 220 million to offset the costs of certain infrastructure associated with Project Gemini; and (b) the issuance of air hub bonds[1951] in the amount of USD 50 million to offset the

[1945] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 5.A.

[1946] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 1.

[1947] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 1. The taxpayer has seven years from the date on which it requests South Carolina to enter into an income allocation and apportionment agreement to make the required investment and create the required number of jobs.

[1948] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), sections 2-4.

[1949] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 2 (amending *S.C. Code*, section 12-36-2120(9)(e) and (f), section 12-36-2120(65)(b), and section 12--36-2120(67)). In addition, the taxpayer is required to notify the South Carolina Department of Revenue, prior to 15 October 2015, of its intention to use any of the exemptions. (South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), sections 2(B), 3(B), and 4(B)).

[1950] Project Gemini Agreement between The Boeing company and South Carolina Department of Commerce, on behalf of the State of South Carolina (1 January 2010), (Project Gemini Agreement), (Exhibit EU-467).

[1951] *S.C. Code*, section 55-11-520 provides that air hub bonds can be used to acquire land, construct, enlarge, improve, extend, renovate, and equip suitable air carrier hub terminal facilities, and purchase equipment, ground support equipment, machinery, special tools, maintenance, boarding facilities, and any real

costs associated with air carrier hub terminal facilities which Boeing agrees to operate in support of Project Gemini.[1952] In addition, South Carolina agrees to recommend that Project Gemini be certified in such a way as to make it eligible for negotiated apportionment of state corporate income taxes as set forth in S.C. Code section 12-6-2320.[1953]

8.688. Boeing, for its part agrees to make new investments in real and personal property of USD 750 million (the Minimum Investment Requirement) and to employ 6,000 employees in the State (Minimum Job Requirement) within a specified period.[1954] Should Boeing fail to comply with the foregoing investment and employment commitments, it will be required to reimburse the State in accordance with a formula and procedure set forth in an annex to the Project Gemini Agreement (the Performance Provision).[1955]

8.689. The preamble to the Project Gemini Agreement expressly refers to the findings of legislative fact made by the South Carolina General Assembly as part of H3130.[1956]

8.690. Finally, the Fee Agreement, dated 1 December 2010, between Charleston County and Boeing (the Boeing FILOT Agreement) provides for certain property tax and corporate income tax concessions to Boeing. Section 5.4 of the Boeing FILOT Agreement states that its intent in part is to afford Boeing the benefits of payment of a fee-in-lieu-of property taxes as well as reimbursement of a portion of those payments in respect of Boeing's investment in Special Source Improvements in consideration of Boeing's decision to locate Project Gemini within the County. Under the Boeing FILOT Agreement, Boeing is authorized to pay a negotiated fee-in-lieu-of property taxes in respect of Project Gemini, including large cargo freighters owned, operated or leased by Boeing and used primarily for the transport of items to and from the Project Gemini site. Boeing is also authorized to claim reimbursement of an agreed portion of such payments in lieu of property taxes in return for its investment in certain infrastructure and facilities serving the economic development of the County (Special Source Improvements).[1957]

8.691. Project Gemini is designated as part of a "multi-county park" pursuant to the Multi-County Act in order to provide additional jobs tax credits afforded by the laws of South Carolina for projects located within multi-county industrial or business parks for all jobs created by Boeing.[1958]

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or personal property for operation of air carrier hub terminal facilities. In order for air hub bonds to be issued, there must first be a binding contract with an air carrier or the principal user of the facility committing the entity to use the facility for the lesser of five years or the time needed to retire the indebtedness. The Executive Director of the Aeronautics Commission then must certify, among other information, the amount to be authorized, a description of the infrastructure for which the bonds are to be issued, and that the facility is an air carrier hub terminal facility. After approval by the Joint Bond Review Committee, the State Budget and Control Board then adopts a resolution issuing the bonds. Air hub bonds are backed by the full faith, credit, and taxing power of the South Carolina. The amount of air hub bonds that the state may issue is limited to USD 50 million outstanding at any time.

[1952] Project Gemini Agreement, (Exhibit EU-467), section II. The parties agree to the description of the eligible items of infrastructure for which the economic development bonds may be allocated and the eligible costs associated with air carrier hub facilities to be offset by the air hub bonds in exhibit B.

[1953] Project Gemini Agreement, (Exhibit EU-467), section III.

[1954] Project Gemini Agreement, (Exhibit EU-467), section IV.A. The period for performance of the Minimum Investment Requirement and Minimum Job Requirement is the earlier of 31 December 2016 or the date that Boeing certifies that the two targets have been met.

[1955] The Performance Provision is expressed to supersede the "Emerald Additional Rent Provisions" attached as exhibit B to the Amended and Restated Ground Sublease between South Carolina Public Railways, and Boeing Commercial Airplanes Charleston South Carolina, Inc., and attached as exhibit E to the Project Emerald Confidential Site Development and Incentive Agreement between the South Carolina Department of Commerce and certain additional parties, and Boeing Commercial Airplanes Charleston South Carolina, Inc., as successor in interest to Vought. See para. 8.711 below.

[1956] Project Gemini Agreement, (Exhibit EU-467), recitals 3 and 4.

[1957] Fee Agreement by and between Charleston County, South Carolina and the Boeing Company (1 December 2010) (Boeing FILOT Agreement), (Exhibit EU-470), sections 1.3, 5.1, and 5.2.

[1958] Boeing FILOT Agreement, (Exhibit EU-470), section 5.3. South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 3360 (C)(1), provides for a state corporate income tax credit for certain qualifying businesses that create a specified number of jobs at the time a new facility or expansion is initially staffed. In addition, under paragraph (E)(1) of § 12-6-3360, taxpayers that are located in a "Multi-County Industrial Park" and qualify for the tax credit under (C)(1) are allowed an additional USD 1,000 credit for each new full-time job created for five years beginning in the taxable year following the creation of the job.

8.692. As explained further in Section 8.2.8.5.1 below, the Project Gemini facilities and infrastructure are located on the same Project Site as the 787 fuselage fabrication and integration operations, which had originally been operated by Vought and Global Aeronautica, and were acquired by Boeing in 2009 (the Project Emerald facilities and infrastructure). In this respect, the legal instruments embodying the Ground Sublease of the Project Site on which both the Project Gemini and Project Emerald facilities and infrastructure are located are common to both Project Gemini and Project Emerald.

8.2.8.3.2 Project Emerald incentive package

8.693. The Project Emerald measures consist of the four measures identified in Section 8.2.8.2 above that were provided to Vought in 2006 in connection with its 787 fuselage fabrication and integration complex at a site at Charleston International Airport. As will be explained further below, Boeing acquired Vought's South Carolina operations in July 2009.

8.694. The obligations of the South Carolina state and local authorities as regards Project Emerald were initially set forth in a 2004 Confidential Initial Site Development and Incentive Agreement between certain South Carolina public agencies and Vought on behalf of itself and two other entities that comprise Project Emerald.[1959] Under this Initial Site Development and Incentive Agreement, the relevant South Carolina public agencies set forth their commitments to provide funds and incentives as an inducement for Vought to locate Project Emerald at the Project Site, and to induce Vought to commence work on the Project Site pending final negotiation of a Site Development and Incentive Agreement.[1960] Such funds and incentives included the issuance of tax exempt and/or taxable bonds, the proceeds of which may be allocated to "infrastructure" as defined in section 11-41-30 of the South Carolina Code, or to "air carrier hub facilities", as defined in section 55-11-500 of the South Carolina Code, a fee-in-lieu-of taxes agreement setting forth a particular property tax treatment as well as special source credits to reduce property taxes or fee-in-lieu-of property taxes for Project Emerald, and the incorporation of the Project Site into a multi-county industrial park to enable Project Emerald to receive additional job tax credits.[1961] Under the Initial Site Development and Incentive Agreement, the Charleston County Airport District also agreed to enter into a ground lease of the Project Site with South Carolina Public Railways, which in turn would enter into a Ground Sublease of the Project Site with Vought.[1962]

8.695. Subsequently, in 2006, the same parties entered into the Project Emerald Confidential Site Development and Incentive Agreement (the Project Emerald Agreement) to finalize the incentives and commitments of the South Carolina public agencies and of Project Emerald to induce Vought to initiate and/or continue work on the Project Site.[1963] Accordingly, Project Emerald was required to hire 745 employees and invest USD 450 million, in return for which South Carolina undertook to authorize the issuance of economic development bonds, and to make available to Project Emerald USD 123 million from the bond proceeds.[1964] The commitments regarding the fee-in-lieu-of taxes agreement and special source credits in respect of property taxes or fee-in-lieu-of property taxes for Project Emerald, and the incorporation of the Project Site into a multi-county industrial park, remained the same as those previously made as part of the 2004 Initial Site Development and Incentive Agreement.[1965] The commitment regarding the grant of a ground lease of the Project Site by the Charleston Airport District to South Carolina Public Railways, and of a Ground Sublease of the Project Site by South Carolina Public Railways to Vought, also remained consistent with that undertaken in the 2004 Initial Site Development and Incentive Agreement, except that Vought was further authorized to enter into building pad leases with the Project Emerald entities or other

[1959] Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560).
[1960] Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560), recitals 9 and 10, part VII, sections 7.1 and 7.2.
[1961] See Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560), parts II (regarding the tax exempt and/or taxable bonds), and IV (regarding the FILOT, special source credits and additional job tax credits through designation of Project Emerald as part of a multi-county industrial park).
[1962] Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560), part V, section 5.3.
[1963] Final Project Emerald Incentive Agreement, (Exhibit EU-550), recital 10. The version of this instrument provided to the Panel as Exhibit EU-550 is dated as of a blank date in 2006 and is executed only by South Carolina Department of Commerce and South Carolina Public Railways.
[1964] Final Project Emerald Incentive Agreement, (Exhibit EU-550), section 2.3.
[1965] See Final Project Emerald Incentive Agreement, (Exhibit EU-550), sections 4.1, 4.2, and 4.3.

designated parties and to sublease parts of the Project Site not immediately used by Project Emerald.[1966]

8.696. Accordingly, on 25 August 2006, Charleston County Aviation Authority, which is the owner and operator of Charleston International Airport, granted a ground lease of the Project Site to South Carolina Public Railways on the understanding that South Carolina Public Railways would immediately sublet the Project Site to Vought in order for Vought to construct and operate the 787 fuselage fabrication and integration complex.[1967] The initial term of the Ground Lease was until 31 December 2021 with provision for extensions for four additional five-year terms.[1968] The annual rent was USD 1.00.[1969] The Project Site was delivered in "as is" condition, with South Carolina Public Railways being responsible for the cost of any improvements made to or at the Project Site land.[1970] Also on 25 August 2006, Vought and South Carolina Public Railways entered into a Ground *Sublease* (the Vought Sublease) under which Vought subleased from South Carolina Public Railways the Project Site (referred to in the Vought Sublease as the "Premises").[1971] The initial term of the Vought Sublease was also until 31 December 2021 with provision for extensions for four additional five-year terms.[1972] The annual rent was USD 1.00 with provision for Vought to make "Additional Rent" payments under circumstances generally involving failure to meet required investment and employment thresholds set forth in the Vought Sublease.[1973] The Vought Sublease contemplated that Vought was subletting the Project Site for the purpose of constructing facilities related to the manufacture of products for the aeronautics industry, defined therein as "Improvements".[1974] The "Improvements" in question refer to the construction by Vought of its 787 fuselage fabrication and integration complex.[1975]

8.2.8.4 The Panel's order of analysis

8.697. The European Union has organized its submissions by first presenting arguments as to why each of the Project Gemini measures involves a subsidy to Boeing that is specific, followed by arguments as to why each of the Project Emerald measures involves a subsidy to Boeing that is specific. The United States responds in its submissions by addressing the Project Emerald measures first (including the sublease of the Project Site), followed by the Project Gemini measures. We have decided to adopt a different order of analysis from that of either party.

8.698. We note that certain of the challenged measures involve the following:

a. Project Site on which both the Project Gemini facilities and infrastructure and Project Emerald facilities and infrastructure are located;

b. construction, and certain funding for the construction, of both the Project Gemini and Project Emerald facilities and infrastructure;

c. agreements as to how property taxes would be assessed in relation to both the Project Gemini and Project Emerald facilities and infrastructure; and

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[1966] Final Project Emerald Incentive Agreement, (Exhibit EU-550), section 5.3.

[1967] Ground Lease Agreement by and between Charleston County Aviation Authority and South Carolina Public Railways (25 August 2006) (Ground Lease Agreement), (Exhibit EU-473), recitals and section 12.01.

[1968] Ground Lease Agreement, (Exhibit EU-473), sections 3 and 4.

[1969] Ground Lease Agreement, (Exhibit EU-473), section 7.01.

[1970] Ground Lease Agreement, (Exhibit EU-473), sections 6.01 and 6.02.

[1971] Ground Sublease between Vought Aircraft Industries, Inc. and South Carolina Public Railways (25 August 2006) (Vought Sublease Agreement), (Exhibit EU-474).

[1972] Vought Sublease Agreement, (Exhibit EU-474), sections 3 and 4.

[1973] Vought Sublease Agreement, (Exhibit EU-474), section 6.

[1974] Vought Sublease Agreement, (Exhibit EU-474), section 7.

[1975] The Project Emerald Confidential Site Development and Incentive Agreement, between Vought Aircraft Industries, Inc., on behalf of itself and the two entities that comprise Project Emerald (collectively Project Emerald), and the South Carolina Department of Commerce, the South Carolina Public Railways, Charleston County and the Charleston County Airport District (collectively, the Public Agencies), dated 2006 (see fn 1963 above) (Final Project Emerald Incentive Agreement, (Exhibit EU-550)) more specifically explains that Project Emerald contemplated the establishment of industrial facilities for the purpose of manufacturing, assembling, integrating and testing composite components and related shipping facilities for the 787 (the Project) and that the Public Agencies wish to have Project Emerald establish the Project on the property the subject of the Vought Sublease.

d. corporate income tax credits in respect of both the Project Gemini and Project Emerald facilities and infrastructure through their respective designation as part of the same multi-county industrial park.

8.699. In these circumstances, and given the similarity in the legal arguments made by the parties with respect to both the Project Gemini and Project Emerald measures in each of the above categories (a) through (d), we will address these particular Project Gemini and Project Emerald measures together. Accordingly, in Section 8.2.8.5, we first consider whether the sublease of the Project Site involves a specific subsidy to Boeing.[1976] In Section 8.2.8.6, we consider whether specific subsidies exist by virtue of South Carolina's alleged provision of Gemini facilities and infrastructure and Emerald facilities and infrastructure to Boeing. In Section 8.2.8.6.5, we evaluate whether the property tax reductions provided under fee-in-lieu-of taxes agreements concluded in connection with both Project Gemini and Project Emerald involve specific subsidies to Boeing. In Section 8.2.8.8, we address whether corporate income tax credits in connection with the designation of both the Project Gemini facilities and infrastructure and the Project Emerald facilities and infrastructure as part of the same multi-county industrial park, involve specific subsidies to Boeing.

8.700. We then address the remaining Project Gemini measures challenged by the European Union for which there is no challenged Project Emerald counterpart: (a) state corporate income tax reductions allegedly provided through an income allocation and apportionment agreement with Boeing (Section 8.2.8.9); (b) state property tax exemption for Boeing's large cargo freighters (Section 8.2.8.10); (c) state sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials established by H3130 (Section 8.2.8.11); and (d) workforce recruitment, training and development programmes allegedly established for Boeing (Section 8.2.8.12).

8.2.8.5 Whether the sublease of the Project Site is a specific subsidy to Boeing

8.2.8.5.1 Introduction

8.701. In paragraph 24 of its panel request, the European Union identifies the following measure as a subsidy related to Project Gemini presently benefiting Boeing:

> Provision of a long-term lease of government-owned land at preferential rates, pursuant to a ground lease agreement between the Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a ground sublease agreement between South Carolina Public Railways and Boeing, as amended, thereby providing a financial contribution within the meaning of Article 1.1(a)(1)(ii)-(iii) of the SCM Agreement.[1977]

8.702. In paragraph 25 of its panel request, the European Union identifies the following measure as a subsidy related to Project Emerald presently benefiting Boeing:

> Provision of a long-term lease of government-owned land at below-market rates, pursuant to a ground lease agreement between the Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a ground sublease agreement between South Carolina Public Railways and Boeing, as amended, thereby providing a financial contribution within the meaning of Article 1.1(a)(1)(ii)-(iii) of the SCM Agreement.[1978]

8.703. The government-owned land referred to in paragraphs 24 and 25 of the European Union's panel request is the same 240 acre portion of land at Charleston International Airport, (the Project Site). The Project Site is currently subleased to Boeing by South Carolina Public Railways pursuant

[1976] The Project Gemini facilities and infrastructure and Project Emerald facilities and infrastructure are both located on the same Project Site, a 240 acre portion of land at Charleston International Airport. As we explain further in Section 8.2.8.5.1 below, the rights to occupy the Project Site in relation to both the Project Gemini facilities and infrastructure and the Project Emerald facilities and infrastructure are granted under the same sublease instrument.

[1977] European Union's request for the establishment of a panel, para. 24, first dot point.

[1978] European Union's request for the establishment of a panel, para. 25, first dot point.

to a ground sublease which we describe in greater detail in the remainder of this Section of the Report. South Carolina Public Railways in turn holds the ground lease of the Project Site pursuant to a Ground Lease Agreement with Charleston County Aviation Authority. As explained in paragraphs 8.694-8.696 above, the Ground Lease and Ground Sublease were initially entered into in 2006 in order to provide Vought a sublease of the Project Site for purposes of constructing the Project Emerald facilities and infrastructure thereon and operating the 787 fuselage fabrication and integration operations that Boeing subsequently acquired from Vought and Global Aeronautica in 2008 and 2009.

8.704. The European Union argues that the sublease of the Project Site to Boeing involves a financial contribution to Boeing in the form of a provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement, which furthermore confers a benefit and is specific. The United States does not dispute that there is a financial contribution, but argues that any financial contribution was made to Vought rather than Boeing and that the European Union has failed to demonstrate that any benefit arising from that financial contribution passed through to Boeing when it purchased Vought's South Carolina operations in an arm's-length transaction for fair market value in July 2009.

8.705. The facts surrounding Boeing's acquisition of Project Emerald facilities and infrastructure from Vought and its assumption of the Ground Sublease originally held by Vought as sublessee are important to the Panel's evaluation of the parties' arguments as to whether the sublease of the Project Site involves a subsidy to Boeing. We set forth below in greater detail the precise sequence of events leading to Boeing, in 2009, being the sublessee of the Project Site (then consisting of the Project Emerald facilities and infrastructure), and to South Carolina offering the Project Gemini package of incentives in connection with Boeing's subsequent decision to locate the Project Gemini facilities and infrastructure on the same Project Site.

8.706. Owing to production delays and manufacturing difficulties with the 787 programme, Boeing announced on 7 July 2009 that it would purchase Vought's 787 business in South Carolina.[1979] Boeing had previously, in June 2008, purchased Vought's 50% interest in the Global Aeronautica joint venture.[1980] On 30 July 2009, Boeing acquired the business, assets and operations of Vought's 787 business in North Charleston; namely, the Vought facility that produces the 787 aft fuselage sections, including fabrication, assembly and systems installation.[1981] Boeing reported that, in connection with the Vought acquisition, it paid cash consideration of USD 590 million and released Vought from its obligation to pay USD 416 million previously advanced by Boeing.[1982]

8.707. Also in connection with Vought's sale of its 787 business in South Carolina, on 30 July 2009, Vought assigned its interest in the Vought Sublease to Boeing.[1983] Thus, as of 30 July 2009, Boeing became sublessee of the Project Site, as successor-in-interest to Vought. Also on 30 July 2009, Vought transferred to Boeing its interest in all buildings, structures and other improvements owned by Vought related to, located on or used in connection with the operation of the facilities on the Project Site.[1984]

8.708. Shortly after Boeing's acquisition of Vought's South Carolina operations, Boeing began to consider whether it would locate its second 787 final assembly and delivery line outside

[1979] J. Weber, "Boeing Buys a Vought Aircraft Plant", *Bloomberg Newsweek*, 7 July 2009, (Exhibit USA-195).

[1980] Boeing, Backgrounder, *Boeing South Carolina*, (August 2011), (Exhibit EU-463). In December 2009, Boeing purchased Alenia's portion of the Global Aeronautica joint venture, dissolving the joint venture and creating Boeing South Carolina. (Boeing, Backgrounder, *Boeing South Carolina*, (August 2011), (Exhibit EU-463)).

[1981] Boeing, *2009 Annual Report*, (Exhibit USA-265), p. 26.

[1982] Boeing, *2009 Annual Report*, (Exhibit USA-265), p. 66.

[1983] Assignment and Assumption of Vought Sublease between Vought Aircraft Industries, Inc. and Boeing Commercial Airplanes South Carolina, Inc. (30 July 2009) (Assignment of Vought Sublease), (Exhibits EU-475/USA-449 (exhibited twice)).

[1984] Assignment and Bill of Sale from Vought Aircraft Industries, Inc. to Boeing Commercial Airplanes Charleston South Carolina, Inc. (30 July 2009), (Exhibit EU-552). According to the United States, this instrument is the execution copy of the "Facilities Bill of Sale, Assignment and Assumption Agreement" referred to in section 9.1(e)(ix) of the Asset Purchase Agreement by and between Vought Aircraft Industries, Inc. and BCACSC, Inc., dated 6 July 2009, (the Vought Asset Purchase Agreement), (Exhibit USA-325). See United States' response to Panel question No. 117, para. 243; and response to Panel question No. 120, para. 248.

Washington State.[1985] According to press reports, Boeing executives met with South Carolina government officials in mid-August 2009 to discuss the possibility of Boeing locating its second 787 final assembly and delivery line in South Carolina.[1986] In response to South Carolina's perceived "competitive disadvantage" to other States that Boeing was considering, South Carolina legislators proposed an incentive package that included USD 170 million in government bonds, elimination of Boeing's state corporate income taxes and sales tax exemptions for computers, fuel for test flights and construction materials and equipment.[1987] On the weekend of 24 October 2009, Boeing requested South Carolina to add a further USD 37 million in government bonds to the offer.[1988] On 26 October 2009, Boeing's Board of Directors met to decide on the location of the second 787 assembly facility.[1989] On 28 October 2009, Boeing announced that it had decided to locate the second 787 assembly line (i.e. the Project Gemini facilities and infrastructure) at the same site as its recently acquired North Charleston 787 fuselage fabrication and integration complex (i.e. the Project Emerald facilities and infrastructure).

8.709. Also on 28 October 2009, the South Carolina General Assembly passed H3130 (described in section 8.2.8.3.1) which amended several South Carolina laws in order to: (a) authorize the issuance of additional general economic development bonds up to USD 170 million aggregate principal amount; (b) authorize an agreement to apportion the income of taxpayers either planning a new facility in the State, or expanding an existing facility, conditional on the taxpayer investing at least USD 750 million in a single county and creating at least 3,800 full-time new jobs in the county; and (c) exempt from sales and use tax aircraft fuel, computer equipment, and construction materials where the taxpayer invests at least USD 750 million in a single county and creates at least 3,800 full-time new jobs in the county. H3130 was signed into law on 30 October 2009.[1990]

8.710. Boeing broke ground on its new 787 final assembly and delivery line in November 2009.[1991] On 19 November 2009, Charleston County Aviation Authority and South Carolina Public Railways amended the Ground Lease for the Project Site, *inter alia*, to acknowledge the changes in the structure of the subleases over the Project Site as a result of Vought's assignment of the Vought Sublease to Boeing on 30 July 2009.[1992] Also on 19 November 2009, Boeing and South Carolina Public Railways entered into an "amended and restated" sublease of the Project Site.[1993] Under the Amended and Restated Sublease: (a) the parties acknowledge that the Vought Sublease was assigned to Boeing on 30 July 2009; (b) South Carolina Public Railways as sublessor expressly consents to that assignment; and (c) the parties agree that the Amended and Restated Sublease "amends, restates in its entirety, and takes the place of" the Vought Sublease.[1994] The operative terms of the Amended and Restated Sublease as regards term, annual rent (including liability for, and the calculation of, Additional Rent) and representations of sublessor and sublessee for all practical purposes remain the same as those of the Vought Sublease. The principal relevant difference between the two instruments is that section 7 of the Amended and Restated Sublease, unlike its counterpart in the Vought Sublease, provides that the

[1985] Press reports indicate that Boeing executives had been frustrated about interruptions to 787 production due to strikes by Boeing workers in Washington State in 2008 and remained dissatisfied over negotiations with the labour union representing Boeing machinists in Washington State. (Andy Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9)).

[1986] Andy Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9).

[1987] Andy Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9).

[1988] Andy Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9).

[1989] Andy Shain, "S.C. travelled a long road to land Boeing", *Charlotte Observer*, 1 November 2009, (Exhibit EU-9).

[1990] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466)

[1991] Boeing, Backgrounder, *Boeing South Carolina*, (August 2011), (Exhibit EU-463).

[1992] First Amendment to Ground Lease Agreement by and between Charleston County Aviation Authority and South Carolina Public Railways (19 November 2009), (Exhibit EU-476), recitals 3 and 4.

[1993] Amended and Restated Ground Sublease by and between Boeing Commercial Airplanes Charleston South Carolina, Inc. and South Carolina Public Railways (19 November 2009) (Amended and Restated Sublease), (Exhibit EU-471).

[1994] Section 1 of the Amended and Restated Sublease relevantly provides: "{t}his Sublease amends, restates in its entirety, and takes the place of the Vought Sublease, such that the Sublessor shall hereafter sublease the Premises to Sublessee in accordance with the terms and conditions set forth herein." (Amended and Restated Sublease, (Exhibit EU-471), clause 1).

sublessee (Boeing) is subleasing the Premises for the purpose of, not just constructing thereon facilities supporting the manufacture of products for the aeronautics industry, but also using previously constructed facilities.

8.711. Subsequently, on 1 January 2010, Boeing and the South Carolina Department of Commerce entered into the Project Gemini Agreement.[1995] Under the Project Gemini Agreement, the South Carolina Department of Commerce agreed to request the South Carolina Joint Bond Review Committee to approve, and the State Budget and Control Board to issue, economic development bonds in the amount of USD 220 million to offset the costs of infrastructure associated with Project Gemini and air hub bonds in the amount of USD 50 million to offset the costs associated with air carrier hub terminal facilities.[1996] For its part, Boeing agreed to make new investments in real and personal property of USD 750 million in the State of South Carolina and to employ 6,000 employees in the State of South Carolina by 31 December 2016 or earlier.[1997] The parties further agreed to amend the Project Emerald Additional Rent provisions contained in the Amended and Restated Sublease and replace those provisions with a Performance Provision set forth as an exhibit to the Project Gemini Agreement, in light of the significant employment and investment already made by Boeing and other entities at the Project Site and given that the Performance Provision includes existing employment along with anticipated new employment and investment associated with Project Gemini.[1998]

8.2.8.5.2 Main arguments of the parties

8.712. The European Union argues that the "lease of the project site to Boeing" is a financial contribution.[1999] By allowing Boeing exclusive use of government-owned land at Charleston International Airport for its 787 manufacturing facilities in exchange for a nominal fee, South Carolina provides goods other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[2000]

8.713. The European Union acknowledges that the sublease of the Project Site covers both Boeing's 787 final assembly and delivery facility (the Project Gemini facilities and infrastructure) as well as the 787 fuselage fabrication and integration complex which Boeing took over from Vought and Global Aeronautica in 2009 (the Project Emerald facilities and infrastructure).[2001] The European Union clarifies that "while the lease also subsidises Boeing's Project Emerald facilities and infrastructure, the European Union chooses not to treat this as a separate subsidy" from the subsidy it describes in connection with Project Gemini.[2002]

8.714. The European Union argues that the "Project Site lease" is the "instrument through which South Carolina provides Boeing with use of the project site".[2003] The European Union considers the financial contribution to have been first provided "directly" to Boeing on 30 July 2009, the date on

[1995] Project Gemini Agreement, (Exhibit EU-467).
[1996] Project Gemini Agreement, (Exhibit EU-467), part II.A and B Boeing agrees also to operate the air carrier hub facilities financed with the issuance of the air hub bonds to support Project Gemini.
[1997] Project Gemini Agreement, (Exhibit EU-467), part IV.A.
[1998] Project Gemini Agreement, (Exhibit EU-467), part IV.B. The Project Gemini Agreement provides that, promptly following execution of the Project Gemini Agreement, the parties will cause the relevant parties to amend the Amended and Restated Sublease so that the provisions regarding the Performance Provision supersede the Emerald Additional Rent provisions as well as in certain other respects. No such amendment has been submitted into evidence by either of the parties.
[1999] European Union's first written submission, para. 557. In its panel request, the European Union identifies the measure at issue as the "long-term lease of government-owned land … pursuant to a ground lease agreement between the Charleston County Aviation Authority and South Carolina Public Railways, as amended, and a ground sublease between South Carolina Public Railways and Boeing, as amended." (European Union's request for the establishment of a panel, paras. 24 and 25). Although the European Union refers in its submissions to the measure at issue as the "Project Site Lease", as we explain in Section 8.2.8.5.1 above, the instrument to which Vought and Boeing were parties is in fact a *ground sublease*, and not a lease. Thus, to the extent that the European Union in its submissions refers variously to the "lease of the project site", or the "Project Site Lease", we understand it to be referring to the instrument pursuant to which South Carolina Public Railways, as lessee of the Project Site from Charleston County Aviation Authority subleases the Project Site to Vought (and Boeing).
[2000] European Union's first written submission, para. 557.
[2001] European Union's first written submission, para. 696 and fn 1552.
[2002] European Union's first written submission, para. 696.
[2003] European Union's response to Panel question No. 107, para. 170.

which Boeing assumed Vought's rights as sublessee under the Vought Sublease.[2004] While the European Union considers that a financial contribution existed with respect to the sublease of the Project Site before 30 July 2009 (presumably to Vought and not to Boeing), it does not claim that there was a benefit or subsidy to Boeing prior to that date.[2005]

8.715. The European Union argues that the sublease of the Project Site to Boeing confers a benefit on Boeing's LCA division because it is provided on non-market terms.[2006] The provision of the sublease is made for less than adequate remuneration in relation to prevailing market conditions. Boeing pays USD 1 per year to sublease the Project Site, while a market participant would pay significantly more. The European Union acknowledges that one method of valuing the sublease of the Project Site would be to consider comparable lease transactions. However, as neither party has provided the information that would be required to determine the benefit on this basis, the sublease of the Project Site itself provides the best information available as to the value of the sublease of the Project Site.[2007] In this regard, the European Union notes that the "base lease value" of USD 4.7 million per annum from the first full year of the sublease (1 January 2010) through the end of the final five-year extension at the end of 2041 totals USD 150.03 million. The European Union argues that the "base lease value", being the amount the sublessee was liable to pay under the Vought Sublease if the sublessee failed to meet the investment and employment thresholds, was likely negotiated between South Carolina and Vought to represent less than the actual fair market value of the sublease.[2008] The amount of USD 150.03 million (less the USD 31 in rent payments due from Boeing) also likely underestimates the benefit to Boeing because it was negotiated prior to Boeing's purchase of the Project Emerald facilities and infrastructure and its decision to establish the Project Gemini facilities and infrastructure. Once account is taken of the particular value *to Boeing* of having its second 787 final assembly and delivery line located adjacent to the 787 fuselage fabrication and integration complex, and connected to an airport runway of sufficient length from which to operate 787s and 747 LCFs, the benefit conferred on Boeing would include an additional market premium.[2009]

8.716. The European Union rejects the United States' arguments that the Project Site had **[***]** value to Boeing because **[***]**. The Project Site's value is a function of supply and demand in the market. Moreover, if the Project Site really **[***]** as the United States contends, it is inconceivable that Boeing or any other sublessee would have agreed to the sublease.[2010] The European Union also rejects the United States' suggestion that the site improvements effected by Boeing that will revert to South Carolina at the conclusion of the sublease entail "adequate remuneration" on a number of grounds, including the absence of evidence provided by the United States comparing the value of Boeing's improvements to prevailing market lease rates, the fact that a significant portion of the site improvements were paid for by South Carolina rather than Boeing, the improvements will have limited or no value at the time of reversion, and in any case, a standard commercial ground lease would have required Boeing to pay more than nominal rent for the term of the lease.[2011]

8.717. The European Union argues that the sublease of the Project Site is specific, within the meaning of Article 2.1(a) of the SCM Agreement, as a subsidy that is explicitly limited to certain enterprises.[2012] The European Union bases this argument on a number of factors. First, it notes that South Carolina Public Railways entered into the sublease with Boeing (or at different times,

[2004] European Union's response to Panel question No. 107, fn 303. It likewise regards the starting point for the "benefit" (and hence, the "subsidy" to Boeing) to be 30 July 2009.

[2005] European Union's response to Panel question No. 107, para. 169. In response to the United States' argument that none of the Project Emerald measures provided to Vought (including the sublease of the Project Site) confer a benefit on Boeing because the European Union has failed to demonstrate that any benefits passed through to Boeing, the European Union argues that the question of how such benefits conferred originally on Vought or Global Aeronautica passed through to Boeing is "irrelevant" because the European Union does not claim that Boeing received any benefits prior to completing the acquisition of Vought's South Carolina operations, or that any benefits conferred originally on Vought or Global Aeronautica passed through to Boeing. (European Union's second written submission, para. 722). See also European Union's response to Panel question No. 39, paras. 219 and 220 and fn 247.

[2006] European Union's first written submission, para. 560.

[2007] European Union's second written submission, para. 616.

[2008] European Union's first written submission, paras. 558 and 559.

[2009] European Union's first written submission, paras. 561 and 562.

[2010] European Union's second written submission, paras. 619 and 620.

[2011] European Union's second written submission, paras. 621-627.

[2012] European Union's first written submission, para. 563.

Boeing and Vought) alone and that Charleston County Aviation Authority similarly *consented* to the sublease of the Project Site solely to Boeing (or at different times, to Boeing and Vought).[2013] Second, the sublease is an element of both the Project Gemini and Project Emerald incentive packages, intended to benefit Boeing and its suppliers.[2014] Third, both the Ground Lease and Vought Sublease provide that their purposes concern the construction and use of manufacturing facilities for the aviation or aeronautics industries.[2015] The European Union additionally argues that the sublease of the Project Site is *de facto* specific within the meaning of Article 2.1(c) because the subsidy is used by a limited number of entities and Boeing is the predominant user of the subsidy programme. Boeing and its suppliers have been the sole beneficiaries of the sublease of the Project Site, and the United States has identified only one other multi-acre property that the State of South Carolina has leased or subleased to a private company for USD 1,000 per year or less since around the year 2000.[2016] Thus, even if there were a larger subsidy programme, beyond the sublease of the Project Site (which the European Union says the United States has failed to demonstrate), such a programme would in any case only have been used by a limited number of certain enterprises.[2017]

8.718. The United States denies that the Project Site sublease provides a financial contribution to Boeing.[2018] It argues that South Carolina provided the land use rights to the Project Site to *Vought*, through the Project Emerald Agreement and the Vought Sublease. Vought "autonomously assigned" those rights to Boeing in an arm's-length, fair market value purchase of Vought's South Carolina operations in July 2009. Accordingly, Boeing obtained the right to use the Project Site, and the improvements on it, from Vought, not South Carolina. There was no financial contribution by a government to Boeing under the SCM Agreement.[2019] The United States adds that, as the European Union does not attempt to argue or provide evidence to demonstrate that any benefit conferred by a financial contribution made by South Carolina to Vought passed through from Vought to Boeing, the European Union has failed to demonstrate that any relevant financial contribution by a government occurred with respect to the Project Site sublease.[2020]

8.719. The United States considers that the European Union, in acknowledging that there was a financial contribution with respect to the sublease of the Project Site *prior to* 30 July 2009, *and then asserting* that the "starting point" of the financial contribution "to Boeing directly" was 30 July 2009, incorrectly suggests that there was more than one financial contribution with respect to the Project Site land.[2021] The European Union thus "seems to conceive of the sublease as a recurring subsidy, wherein each year, South Carolina (through the Charleston County Aviation Authority) provides the sublessee with land for less than adequate remuneration".[2022] The United States argues that such a conception is entirely at odds with the design, operation and principal characteristics of the sublease at issue. For the United States, the sublease for the Project Site is a "unified asset" provided at the time of execution of the Vought Sublease (in 2006) when the parties became contractually obligated by its terms.[2023]

8.720. The United States argues that there is nothing about Boeing's purchase of Vought's South Carolina assets, including its assumption of Vought's subleasehold interest in the Project Site, that supports finding a "second financial contribution" in 2009, or any additional financial contributions after the initial one in 2006. Given that the only financial contribution in connection with the right

[2013] European Union's first written submission, para. 563. The European Union asserts that both the original decision to sublease the Project Site to Vought and the approval of Boeing's assumption of the Vought Sublease necessarily took the form of resolutions passed by the Charleston County Aviation Authority. Therefore, Charleston County Aviation Authority and South Carolina Public Railways explicitly limited access to the subsidy to certain enterprises. (European Union's second written submission, para. 630).

[2014] European Union's first written submission, para. 563.

[2015] European Union's first written submission, para. 564.

[2016] European Union's first written submission, para. 565. The European Union also argues that the sublease of the Project Site is specific because it falls under the provisions of Article 3 of the SCM Agreement and is therefore "deemed" to be specific pursuant to Article 2.3 of the SCM Agreement. (European Union's first written submission, para. 566).

[2017] European Union's second written submission, paras. 631 and 632.

[2018] United States' first written submission, para. 581; second written submission, para. 487.

[2019] United States' second written submission, paras. 487 and 501.

[2020] United States' second written submission, fn 703 (referring to European Union's second written submission, para. 722) and para. 503.

[2021] United States' comments on the European Union's response to Panel question No. 107, para. 172.

[2022] United States' comments on the European Union's response to Panel question No. 107, para. 173.

[2023] United States' comments on the European Union's response to Panel question No. 107, para. 174.

to use the Project Site occurred when South Carolina executed the Vought Sublease in 2006, the European Union must demonstrate that any benefit conferred by that 2006 financial contribution "passed through" to Boeing.[2024]

8.721. The United States argues that, even assuming *arguendo* that the sublease of the Project Site constituted a financial contribution to Boeing, it did not confer a benefit because it had a **[***]** to Boeing if examined in isolation.[2025] Boeing **[***]**.[2026] Boeing's actual remuneration to South Carolina of USD 1 per year is therefore more than adequate.[2027] The United States argues that, contrary to the European Union's assertion that it is inconceivable that a commercial actor like Boeing would have agreed to a ground sublease of land that had a **[***]**, it is quite conceivable that a party would take a loss on one aspect of an arrangement if overall, the arrangement was advantageous to it. It gives the example of private parties agreeing to lease or purchase so-called brownfield (i.e. environmental clean-up) sites due to government enticements to develop land and/or defray environmental costs and liabilities.[2028] The United States regards as "fanciful" (and unsupported by the United States' expert appraisals) the European Union's valuation of the Project Site at USD 150.03 million.[2029] According to the United States, the European Union's valuation of the Project Site would make it the most expensive piece of the land in North Charleston.[2030]

8.722. The United States rejects the European Union's arguments that the sublease of the Project Site is specific within the meaning of Article 2.1(a) of the SCM Agreement. The United States considers that the European Union confuses the *identification* of an alleged subsidy recipient, with a *limitation on access* to that recipient, or the class of enterprises to which it belongs.[2031] The fact that Boeing was the sole sublessee of the Project Site, or that the Charleston County Aviation Authority consented to the sublease, does not mean that the Charleston County Aviation Authority explicitly limited access to the subsidy to certain enterprises, nor does it demonstrate that the Charleston County Aviation Authority or any other South Carolina entity restricted access to the sublease of the Project Site, or to other similar measures, from parties other than Boeing. The United States also rejects the European Union's argument that the sublease of the Project Site is *de facto* specific within the meaning of Article 2.1(c). The United States argues that the sublease of the Project Site is part of a broader programme to provide site leases to industrial lessees in exchange for nominal lease payments, and asserts that political subdivisions of South Carolina, including Charleston County (through the Charleston County Aviation Authority) routinely provide nominal leases of publicly-owned property.[2032]

8.2.8.5.3 Evaluation by the Panel

8.2.8.5.3.1 Whether the sublease of the Project Site involves a financial contribution to Boeing within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement

8.723. The first issue before us is whether the sublease of the Project Site, on which Boeing's 787 manufacturing facilities are located (both the Project Gemini facilities and infrastructure and the Project Emerald facilities and infrastructure), involves a financial contribution by South Carolina to Boeing within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.

8.724. The European Union and United States agree that there was a financial contribution in the form of a provision of goods or services other than general infrastructure from the time that South Carolina entered into the Vought Sublease with Vought on 25 August 2006.[2033] However, the European Union considers that a "financial contribution is provided throughout the period that the

[2024] United States' comments on the European Union's response to Panel question No. 107, para. 182.
[2025] United States' first written submission, paras. 554-557; second written submission, para. 504.
[2026] United States' second written submission, para. 504. The United States further argues that the **[***]** of the Project Site "should offset any putative benefit conferred to Boeing by the provision of facilities and infrastructure". (United States' second written submission, para. 507 and fn 752).
[2027] United States' second written submission, para. 507.
[2028] United States' second written submission, para. 505.
[2029] United States' first written submission, para. 557; second written submission, para. 506.
[2030] United States' second written submission, para. 506.
[2031] United States' second written submission, para. 508.
[2032] United States' second written submission, para. 509.
[2033] European Union's response to Panel question No. 172, para. 575.

government continues to provide such goods or services".[2034] As Boeing is "presently leasing the project site directly from a South Carolina government agency" this is conclusive evidence of a financial contribution to Boeing.[2035]

8.725. The United States argues that the relevant financial contribution by South Carolina was to grant Vought a ground sublease of the Project Site when it executed the Vought Sublease on 25 August 2006. Boeing obtained its interest as sublessee under the Vought Sublease directly *from Vought* on 30 July 2009, as part of what the United States asserts was an arm's-length transaction for fair market value between Vought and Boeing. In these circumstances, the European Union bears the burden of demonstrating (and has failed to demonstrate) that the benefit conferred by any such financial contribution provided to Vought has "passed through" to Boeing.

8.726. In response, the European Union says that the United States has misunderstood its claims, that its actual claims involve the provision of goods *directly* to Boeing by South Carolina, and that such a financial contribution has been conferred on Boeing directly by South Carolina *since 2009*.[2036] The European Union maintains that it does not allege that the benefit from any financial contribution provided directly to Vought "passed through" to Boeing.[2037] Thus, the European Union argues that a subsidy to Boeing exists, not as a result of the pass-through to Boeing of a benefit conferred by a financial contribution provided to Vought, but as a result of a benefit from a financial contribution *provided directly to Boeing*.

8.727. The Panel asked the European Union to identify the temporal starting point for the alleged *financial contribution* to Boeing, and to indicate whether the alleged financial contribution is the Vought Sublease, the Amended and Restated Sublease or other instruments or events. The European Union responded as follows:

a. A financial contribution existed with respect to the sublease of the Project Site well before 30 July 2009 (the date on which Boeing assumed the sublease from Vought). However, it "does not claim that there was a 'benefit' or 'subsidy' to Boeing prior to that date".[2038]

b. The sublease of the Project Site is the instrument through which South Carolina provides Boeing with use of the Project Site, and consequently, the starting point for the benefit and hence subsidy to Boeing is 30 July 2009, the date on which Boeing assumed the sublease of the Project Site from Vought. In a footnote to this part of its response the European Union then stated: "{a}ccordingly, the European Union also considers 30 July {2009} the starting point of the financial contribution *to Boeing* directly".[2039]

8.728. In the part of the European Union's response recounted in (a) and the first sentence of (b) above, the European Union acknowledges that South Carolina provided a financial contribution to Vought when it executed the Vought Sublease in 2006.

8.729. However, the European Union then states, in footnote 303 of its response to Panel question No. 107, that "accordingly" it "also" considers the starting point of the *direct* financial contribution to Boeing to be 30 July 2009. The European Union adds, in a final paragraph of its response to Panel question No. 107, that if the Panel considers the execution of the Amended and Restated Sublease to be "relevant" to its determination of financial contribution or benefit, it could "alternatively" consider the date of that instrument (i.e. 19 November 2009) as the starting point of the "subsidy".[2040] Notably, the European Union does not argue that *it* considers the Amended and Restated Sublease to be relevant to the financial contribution determination, nor does it offer any legal explanation as to why the Panel could potentially consider the Amended and Restated Sublease to be so relevant.

[2034] European Union's response to Panel question No. 172, para. 575.
[2035] European Union's response to Panel question No. 172, para. 577. (emphasis original)
[2036] European Union's response to Panel question No. 39, paras. 218 and 219.
[2037] See e.g. European Union's response to Panel question No. 39, para. 220.
[2038] European Union's response to Panel question No. 107, para. 169.
[2039] European Union's response to Panel question No. 107, para. 170 and fn 303. The European Union appears to have inadvertently written 1999 when it meant 2009. (emphasis original)
[2040] European Union's response to Panel question No. 107, para. 171.

8.730. We recall that paragraphs 24 and 25 of the European Union's panel request describe the alleged subsidy as the provision of a "long-term lease" pursuant to a Ground Lease Agreement between the Charleston County Aviation Authority and South Carolina Public Railways and "a ground sublease agreement between South Carolina Public Railways and Boeing, as amended". It would appear from the language used in the European Union's panel request, and also in its first written submission, that it means to identify the Amended and Restated Sublease, dated 19 November 2009, which on its face would appear to be the "ground sublease between South Carolina Public Railways and Boeing, as amended".[2041] Yet the European Union's response to Panel question No. 107, that the temporal starting point of the "direct" financial contribution to Boeing is 30 July 2009 suggests, to the contrary, that the European Union is in fact referring to the Vought Sublease as of the date on which Boeing became the assignee of Vought's subleasehold rights thereunder (i.e. 30 July 2009) as the relevant direct financial contribution to Boeing.

8.731. The correct identification of the legal instrument that the European Union alleges is the direct financial contribution to Boeing is of key importance to the Panel's analysis. This is because the European Union challenges *the legal instrument of the sublease itself* as the financial contribution that is said to constitute a provision of "goods … other than general infrastructure" within the meaning of Article 1.1(a)(1)(iii).[2042] When we compare our understanding of the legal instrument that is the measure described in the European Union's panel request and first written submission in particular (the Amended and Restated Sublease executed on 19 November 2009), with the legal instrument that logically must be the challenged measure based on the European Union's response to Panel question No. 107 (the Vought Sublease, as of the date on which Boeing became Vought's assignee), we are left in no small measure of doubt as to whether the European Union has been sufficiently clear or consistent as to which legal instrument or event is the direct financial contribution to Boeing.[2043]

8.732. As we explain below, we have concluded in any case that neither the assumption by Boeing of Vought's interests under the Vought Sublease on 30 July 2009, nor the Amended and Restated Sublease entered into by South Carolina Public Railways and Boeing on 19 November 2009, can be considered to constitute a direct financial contribution to Boeing.

8.2.8.5.3.2 Whether Boeing's assumption of Vought's interests under the Vought Sublease on 30 July 2009 is a direct financial contribution to Boeing

8.733. As previously noted, the European Union and United States agree that there was a financial contribution to Vought, in the form of a provision of goods or services other than general infrastructure, at the time that South Carolina entered into the Vought Sublease with Vought on 25 August 2006.

[2041] Additionally, after explaining that Boeing assumed the sublease of the Project Site from Vought on 30 July 2009, the European Union argues that, on 19 November 2009, "Boeing and SCPR (with the consent of the Charleston County Aviation Authority) entered into the Amended and Restated Ground Sublease … providing Boeing with that direct sublease." (European Union's first written submission, para. 553). The references to the terms of the "Ground Sublease" in paragraphs 554 and 555 which the European Union then argues (in paragraphs 556 and 557) is a specific subsidy to Boeing, are to Exhibit EU-471 which is the Amended and Restated Sublease between South Carolina Public Railways and Boeing, dated 19 November 2009, not the Vought Sublease.

[2042] This much is clear not only from paragraphs 24 and 25 of the European Union's panel request, but also from its submissions: "{a}s demonstrated below, the provision of this lease constitutes a specific subsidy". (European Union's first written submission, para. 556). "{t}he lease of the project site to Boeing provides a financial contribution by a government under the SCM Agreement". (European Union's first written submission, para. 557). "{t}he European Union explained in its First Written Submission that South Carolina's lease of land at Charleston International Airport to Boeing (i.e., the 'project site lease') … provides to Boeing a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement". (European Union's second written submission, para. 614). "{t}he United States … misunderstands *what* is the subject of {the European Union's valuation of the financial contribution}. Contrary to the US' characterization, the European Union here valued the project site *lease*, not the project site itself." (European Union's second written submission, para. 615 (emphasis original)).

[2043] To the extent that the European Union intends to challenge a direct financial contribution allegedly provided to Boeing by South Carolina as of 30 July 2009, when Boeing became the assignee of Vought's interests under the Vought Sublease, there is a real issue in our view, whether the Vought Sublease has been sufficiently clearly identified in the European Union's panel request.

8.734. To be clear, a government's undertaking legal obligations embodied in a legal instrument such as a ground sublease is not of itself a provision of "goods". The characterization of a legal instrument such as a government ground sublease as a "provision" of "goods" for purposes of Article 1.1(a)(1)(iii) is based on the notion that the legal instrument creates a government obligation to provide the recipient with certain rights in respect of a "good". In the present case, the Vought Sublease provided the sublessee, Vought, with the rights of exclusive use and possession of the Project Site for an agreed period of time. There is accordingly a reasonably proximate relationship between the action of the government in granting legal rights in the legal instrument (i.e. Vought Sublease) and the use and enjoyment of the "good" (i.e. the Project Site).[2044]

8.735. The United States considers that, while a ground sublease involves a government obligation to provide rights to land for the duration of the ground sublease, the financial contribution is the government's legal commitment to provide the land for a period into the future, which occurs when the commitment becomes legally effective. The United States thus regards the question of whether the Vought Sublease involves a subsidy to Boeing to concern the question of the transmission of subsidy *benefits* between unrelated parties.

8.736. We recall that the disputes in *US – Lead and Bismuth II* and *US – Countervailing Measures on Certain EC Products* addressed the question of whether the benefit conferred from past, non-recurring subsidies continued to exist and had been fully transferred to the recipient firms' new owners in spite of the fact that the new owners had paid fair market value for the recipient firms. The United States' arguments are similarly based on an analytical framework in which the financial contribution (South Carolina's obligation to provide a Ground Sublease of the Project Site) was made directly to Vought in 2006 when it entered into the Vought Sublease, while any benefit conferred by that financial contribution (annual rental payments allegedly at below-fair market value) would necessarily be enjoyed by the recipient over the period of the ground sublease. Under this framework, when Boeing became the assignee of Vought's interests under the Vought Sublease in July 2009, the relevant question is whether the benefit conferred by the allegedly below-market value rental payments, from the period of time from which Boeing had assumed Vought's rights and obligations, can be said to have "passed through" to Boeing, or whether it was "extinguished" at that point because Boeing effectively paid for it when it acquired the Project Emerald facilities and infrastructure from Vought in an arm's-length, fair market value transaction. For the United States, there is no question that the relevant financial contribution occurred only once in 2006 when the South Carolina authorities granted the Vought Sublease to Vought. The relevant issue is whether the benefit conferred by that financial contribution from July 2009 onwards is being enjoyed by Boeing.

8.737. The European Union's analytical approach, on the other hand, obviates the need to determine whether the benefit conferred by a financial contribution to Party A in Year N has "passed through" to an assignee of that financial contribution so that it is subsequently being enjoyed by Party B in Year N + 1, by characterizing the assignment of the financial contribution by Party A to Party B as itself giving rise to a new, distinct and direct financial contribution by a government to the assignee. For the European Union, because Boeing enjoyed the right to use the Project Site as Vought's assignee under the Vought Sublease as of 30 July 2009, South Carolina can be considered from that date to have made a new financial contribution of "goods … other than general infrastructure" directly to Boeing under the Vought Sublease.

8.738. The parties' positions involve the question of how to characterize a financial contribution that involves a government-provided legal right which is to be enjoyed over a period of time (e.g. to occupy land, to obtain a particular tax treatment). More specifically, the question is whether the government-provided legal right should be characterized for purposes of Article 1.1(a)(1) of the SCM Agreement as a single financial contribution that occurs at the time the government undertakes the legal commitment, notwithstanding that the benefit conferred by that one-time financial contribution may be analysed as being enjoyed over the period of the government's actual performance of that obligation, or as a continuing or recurring series of financial contributions commensurate with the government's performance of the obligation over time.

[2044] Appellate Body Report, *US – Softwood Lumber IV*, para. 71. See also Appellate Body Report, *US – Carbon Steel (India*), para. 4.69.

8.739. The United States regards the Vought Sublease over the Project Site as a "unified asset" provided by South Carolina at the time of the execution of the Vought Sublease on 30 July 2006.[2045] The existence and magnitude of any subsidy arising from the Vought Sublease would be measured by reference to the market rates at the time the Vought Sublease was executed and its terms (e.g. period and annual rental) were set. Whether the agreed annual rental was below the market rate is an *ex ante* analysis that would be assessed at the time the South Carolina authorities and Vought executed the Vought Sublease, even if the benefit were to be considered to be enjoyed over the period of the sublease.[2046] When Boeing purchased Vought's South Carolina interests and assets – including Vought's interests under the Vought Sublease – for over USD 1 billion in a July 2009 transaction with Vought, South Carolina "provided" nothing. It was already contractually obligated to honour the annual rental and term of the Vought Sublease.[2047] The only question is whether the European Union can demonstrate that any benefit conferred on Vought can be considered to have "passed through" to Boeing as assignee of Vought's interests under the Vought Sublease in 2009, which the European Union has failed to do.

8.740. The European Union regards the Ground Sublease of the Project Site as "ongoing", rather than a "completed single act in 2006".[2048] According to the European Union, there are a number of factors that support such a characterization, including: (a) the "nature of the land rights" provided under a ground sublease, being "possession and use, rather than ownership"; (b) the conditioning of those rights on certain performance obligations by the sublessee and the broader relationship of other aspects of the Project Gemini incentive package to Boeing's location of its facility on public land; (c) South Carolina's "ongoing supervisory relationship to Boeing as landlord"; and (d) the limited term of the sublease and the eventual "reversion" of the Project Site to South Carolina.[2049] Moreover, the "goods or services" provided to Boeing are "qualitatively different" from those previously provided to Vought, because the parts of the Project Site other than those already in use by the Project Emerald companies were only made useable for the Project Gemini facilities and infrastructure through approximately USD 50 million spent by South Carolina on land remediation.[2050] In addition, "Boeing's lease" is materially different from the Vought Sublease because the former eliminated the performance requirements that potentially could have triggered additional payment obligations on the part of Vought.[2051]

8.741. We do not consider it appropriate to characterize the financial contribution that arises from the Ground Sublease of the Project Site, involving as it does a government provision of land for the term of the sublease, as a financial contribution that is ongoing, or continues, for the duration of the Ground Sublease.[2052] Like the United States, we see the financial contribution as a one-time financial contribution made by South Carolina at the time the government undertakes the legal obligation under the sublease, notwithstanding that its performance of the obligation will necessarily occur over time. When the South Carolina authorities entered into the Vought Sublease with Vought in 2006, they became legally obligated to provide Vought or Vought's assignees with exclusive use and possession of the Project Site for the period of the Ground Sublease. This did not change when Boeing became assignee of Vought's rights under the Vought Sublease.

8.742. We are not persuaded by the European Union's arguments that the "nature" of the rights granted to the sublessee, or the rights and obligations of South Carolina as sublessor, under the Ground Sublease of the Project Site, warrant a characterization of the relevant financial contribution as one that is "ongoing". We note that ground leases (or land leases, as they are sometimes called) are a particular form of property interest that typically involve the long-term lease of land only.[2053] A ground lease tenant will usually construct its own buildings on the land

[2045] United States' comments on the European Union's response to Panel question No. 107, para. 174.
[2046] United States' comments on the European Union's response to Panel question No. 107, para. 180.
[2047] United States' comments on the European Union's response to Panel question No. 107, para. 181.
[2048] European Union's response to Panel question No. 172, para. 578.
[2049] European Union's response to Panel question No. 172, para. 578.
[2050] European Union's response to Panel question No. 172, para. 579.
[2051] European Union's response to Panel question No. 172, para. 580.
[2052] This is very different from the question of whether it is appropriate to analyse any benefit conferred by such a financial contribution as being amortized over the period of the ground sublease, or over some other appropriate period.
[2053] Black's Law Dictionary describes a "ground lease" as follows:

> A long term (usu. 99-year) lease of land only. Such a lease typically involves commercial property, and any improvements built by the lessee usu. revert to the lessor.

and own those buildings for the duration of the ground lease term, after which the buildings will become the property of the lessor when the control of the land reverts to the lessor. The long-term nature of the lease means that the lessee will control the land for a sufficient length of time to make him or her willing to invest in site and building improvements.[2054] Ground leases are in many respects regarded as an alternative to outright fee purchases, and may enable a lessee to obtain long-term control and use of land that would not otherwise be available, or avoid the up-front capital cost of purchasing land.[2055]

8.743. These characteristics of ground leases (which apply equally to the Ground Sublease of the Project Site) suggest that they are comparable in many respects to outright purchases of land. Under a ground lease, the lessee obtains exclusive use and control of the land for a long (but necessarily finite) duration, rather than indefinitely, as in the case of an outright purchase. Like an outright purchase, however, the lessor grants the lessee the right to exclusive use and control of the land for the term of the ground lease once, on execution of the Ground Sublease. This is the case even though the period of time over which the ground lessee will necessarily enjoy the exclusive use and control of the land is confined to the term of the ground lease (rather than indefinitely, as in the case of an outright purchase).

8.744. The European Union argues that "subsidies involving leases of land are considered to involve recurring benefits" in U.S. law and practice in countervailing duty investigations.[2056] We find it instructive that the authorities the European Union refers to in fact address the characterization of the benefit rather than the financial contribution as being recurring in nature. We note in this regard that it is important not to confuse the concepts of an ongoing financial contribution and a recurring benefit. We emphasize that in concluding that the financial contribution made by the South Carolina authorities in granting Vought a Ground Sublease of the Project Site in 2006 was made once on 25 August 2006 rather than continually or on a recurring basis for the duration of the Ground Sublease, we do not suggest that the benefit or indeed the subsidy in question existed only once in 2006. We mean only to say that the financial contribution provided directly to Vought under the Vought Sublease in 2006 was not "continuous" and did not become a financial contribution provided directly to Boeing on 30 July 2009 without any action on the part of the South Carolina authorities at that time.

8.745. We are therefore unable to identify any basis on which to conclude that South Carolina can be said to have granted a new direct financial contribution to Boeing on 30 July 2009 when Boeing, in a private transaction with Vought, assumed Vought's rights as sublessee under the Vought Sublease. The legal instrument through which Boeing, as of 30 July 2009, enjoyed the exclusive possession and use of the Project Site remained the *Vought Sublease*, and South Carolina's obligations with respect to that legal instrument, and thus the financial contribution, were crystallized on 25 August 2006.

8.746. The European Union has argued that under "Boeing's lease", South Carolina eliminated the performance requirements that previously would have triggered additional payment obligations on the part of Vought, and thus that Boeing was "provided the land on materially different (and *more favourable*) terms than was Vought".[2057] However, the replacement of the "Additional Rent" provisions contained in identical terms in both the Vought Sublease and the Amended and Restated Sublease with a "Performance Provision" occurred only as a result of the Project Gemini Fee Agreement, which was entered into on 1 January 2010. The European Union has nowhere argued that the Project Gemini Agreement, by amending certain aspects of the Amended and Restated Sublease, so materially altered South Carolina's obligation with respect to the Ground

(*Black's Law Dictionary*, 10th edn, B. A. Garner (ed.) (Thomson Reuters, 2004), p. 1025)

[2054] C. Carneghi, "Determining Ground-Lease Rental Rates", *The Appraisal Journal*, April 2004, (Exhibit EU-1108), p. 257.

[2055] C. Carneghi, "Determining Ground-Lease Rental Rates", *The Appraisal Journal*, April 2004, (Exhibit EU-1108), p. 257.

[2056] European Union's response to Panel question No. 172, para. 586, and authorities cited at fn 1112 thereto.

[2057] European Union's response to Panel question No. 172, para. 580 (emphasis original); comments on the United States' response to Panel question No. 121, para. 349.

Sublease of the Project Site as to warrant the conclusion that there was a new, direct financial contribution to Boeing as of 1 January 2010, nor do we think such a conclusion is warranted.[2058]

8.747. Although not specifically argued by the European Union, we have additionally considered the possibility that, if the legal validity of Vought's assignment to Boeing of its subleasehold interest in the Project Site were conditional upon first obtaining the consent of South Carolina Public Railways as sublessor, or Charleston County Aviation Authority as lessor, there could arguably be sufficient government action in July 2009 to warrant treating such consent to the Vought assignment as "reasonably proximate" to Boeing's use and enjoyment of the Project Site, and thus a "provision" of the property in question, for purposes of Article 1.1(a)(1)(iii). However, while some lease instruments may expressly prohibit assignments of leases without the prior consent of the lessor, the terms of the Vought Sublease do not appear to do so, meaning that the legal effectiveness of Vought's assignment of its interests under the Vought Sublease to Boeing was not conditional upon any prior consent from South Carolina Public Railways as the sublessor.[2059]

8.748. We similarly do not find any provision of the underlying Ground Lease to South Carolina Public Railways that could potentially operate to prevent the legal effectiveness of Vought's assignment of its interest under the Vought Sublease to Boeing without the prior consent of South Carolina Public Railways or Charleston County Aviation Authority. We note that Charleston County Aviation Authority (the lessor of the Project Site under the Ground Lease) did execute a consent to the Amended and Restated Sublease on 19 November 2009.[2060] This consent is almost identical to the consent that Charleston County Aviation Authority previously gave to the Vought Sublease.[2061] However, it is not apparent that this consent was legally necessary, as section 12.01 of the Ground Lease appears to enable South Carolina Public Railways to assign or sublease its interest in the Ground Lease to any party without the consent of Charleston County Aviation Authority.[2062]

8.749. We note that, when the Ground Lease was amended on 19 November 2009, the following sentence was added to section 12.01:

> Through assignment of the Vought Sublease, {Charleston County Aviation Authority} specifically authorizes the sublease by {South Carolina Public Railways} of its rights hereunder to Boeing under the {Amended and Restated} Sublease and further authorizes the lease by Boeing of certain Improvements within the Leased Premises to entities engaged in manufacturing.[2063]

8.750. Once again, it is not clear that Charleston County Aviation Authority's authorization of Vought's assignment of its interest under the Vought Sublease to Boeing was legally necessary. It appears that this amendment to section 12.01 of the Ground Lease was added through an abundance of caution to provide clarity that Charleston County Aviation Authority was aware of Boeing's assumption of the Vought Sublease and its plans to construct further facilities on the Project Site.

[2058] We are similarly not persuaded that the question of whether a lease or sublease of land should be analysed as a one-time or "ongoing" financial contribution is assisted by attempted analogies to the very different context of breaches of international obligations having a "continuing character" or involving "composite acts" in Articles 14 and 15 of the ILC's Articles on State Responsibility. (See European Union's response to Panel question No. 172, fn 1091).

[2059] Section 16 of the Vought Sublease permits Vought to assign or sublet *additional portions* of the Project Site to third parties involved in the manufacture of aeronautical composites products for projects which foster strategic development opportunities with appropriate investment and job creation without the prior consent of South Carolina Public Railways. After 31 December 2013, the mutual consent of the parties is required for any assignment or sublease of any "*unused portion*" of the Project Site. However, section 16 does not on its terms prevent Vought from assigning its leasehold interest in the whole of the Project Site without South Carolina Public Railway's prior consent.

[2060] The consent appears as an attachment to the version of the Amended and Restated Sublease submitted as Exhibit EU-471.

[2061] The consent appears as an attachment to the version of the Vought Sublease submitted as Exhibit EU-474.

[2062] Ground Lease Agreement, (Exhibit EU-473).

[2063] See First Amendment to Ground Lease Agreement by and between Charleston County Aviation Authority and South Carolina Public Railways (19 November 2009), (Exhibit EU-476), section 11.

8.751. We therefore consider that there is insufficient support for the proposition that there was a direct financial contribution to Boeing when Vought assigned its rights under the Vought Sublease to Boeing on 30 July 2009, even leaving aside the terms of reference difficulties to which we have previously referred.[2064]

8.2.8.5.3.3 Whether South Carolina Public Railway's entering into the Amended and Restated Sublease with Boeing on 19 November 2009 is a new direct financial contribution to Boeing

8.752. As we have previously explained, the terms of the European Union's panel request and arguments in its submissions, compared to its responses to the Panel's questions and comments on the United States responses, have left the Panel somewhat uncertain as to which legal instrument the European Union challenges as the "long-term lease of government-owned land", or the "sublease of the project site".

8.753. The European Union does not appear to have explicitly argued that South Carolina Public Railway's entering into the Amended and Restated Sublease with Boeing on 19 November 2009 terminated the Vought Sublease, thereby putting to an end that financial contribution, and bringing into existence a new direct financial contribution to Boeing.[2065] We nevertheless consider whether the facts in question may support such a conclusion. In our view, *if* the Amended and Restated Sublease could be considered to involve a new legal commitment on the part of South Carolina to provide a Ground Sublease of the Project Site directly to Boeing, there would be a basis for concluding that South Carolina made a direct financial contribution to Boeing on 19 November 2009.

8.754. The United States argues that in executing the Amended and Restated Sublease with Boeing on 19 November 2009, South Carolina Public Railways did not enter into a new legal relationship with Boeing. Rather, the Amended and Restated Sublease simply "formalized" Boeing's role as successor-in-interest to Vought under the Vought Sublease.[2066] For the United States, Boeing's interest as sublessee of the Project Site derives from the assignment by Vought of its interests under the Vought Sublease on 30 July 2009.[2067]

8.755. We recall that on 28 October 2009, some three months after acquiring Vought's South Carolina operations (i.e. the Project Emerald facilities and infrastructure), and taking over Vought's interest as sublessee under the Vought Sublease, Boeing decided to locate its second 787 final assembly and delivery facility (i.e. the Project Gemini facilities and infrastructure) on the same Project Site, allegedly as a result of the tax and other incentives offered by South Carolina.[2068] As detailed in paragraph 8.710 above, on 19 November 2009, Charleston County Aviation Authority and South Carolina Public Railways amended the underlying Ground Lease for the Project Site to acknowledge that the Vought Sublease had been assigned to Boeing on 30 July 2009, as well as to update certain factual information.[2069] At the same time, South Carolina Public Railways and Boeing executed the Amended and Restated Sublease which was expressed as amending, restating, and entirely taking the place of the Vought Sublease.[2070]

[2064] See fn 2043 above.

[2065] We note that the European Union does not argue that the Amended and Restated Sublease involved a new legal commitment by South Carolina to provide a Ground Sublease of the Project Site directly to Boeing. Rather, the European Union argues that Boeing's interests as sublessee of the Project Site arose on 30 July 2009 when it was assigned Vought's interests under the Vought Sublease. For example, the European Union explains in its first written submission that Boeing's purchases of Vought and Global Aeronautica additionally led to it "taking over the $1 per year lease to the Project Emerald site at Charleston International Airport", which lease "also covers the location of Boeing's 787 Final Assembly and Delivery Facility". (European Union's first written submission, paras. 696, 552, and 553, and fn 1554).

[2066] United States' second written submission, para. 492 and fn 722; response to Panel question No. 101(b), para. 195; and response to Panel question No. 101(d), para. 199.

[2067] Thus, the United States argues, to the extent the sublease of the Project Site involves a financial contribution by South Carolina in the form of a provision of land other than general infrastructure: (a) it was made to Vought (and not Boeing) on execution of the Vought Sublease on 25 August 2006; and (b) there was no financial contribution made by South Carolina to Boeing.

[2068] These incentives are the Project Gemini measures, set out in para. 8.682 above.

[2069] First Amendment to Ground Lease Agreement by and between Charleston County Aviation Authority and South Carolina Public Railways (19 November 2009), (Exhibit EU-476), recitals 3 and 4.

[2070] Amended and Restated Sublease, (Exhibit EU-471), section 1.

8.756. Our examination of the Vought Sublease and the Amended and Restated Sublease indicates that the Amended and Restated Sublease is an instrument embodying the same Ground Sublease of the Project Site that was originally provided to Vought under the Vought Sublease (and of which Boeing became the assignee from Vought from 30 July 2009).[2071] The Project Site the subject of the Amended and Restated Sublease is the same Project Site covered by the Vought Sublease, and is defined in the same way in both instruments. The Amended and Restated Sublease simply restates the terms of the sublease of the Project Site as originally provided in the Vought Sublease, replacing Vought for Boeing as the sublessee.[2072] Significantly, there is nothing to indicate that the subleasehold interests granted to Vought under the Vought Sublease (and then assigned to Boeing) were ever terminated on or prior to 18 November 2009 such that South Carolina Public Railways can be said to have granted Boeing a *new* subleasehold interest in the Project Site when it executed the Amended and Restated Sublease on 19 November 2009. We do not see any basis for finding that South Carolina Public Railways provided a direct financial contribution to Boeing on 19 November 2009 when it executed the Amended and Restated Sublease with Boeing. We therefore conclude that the Amended and Restated Sublease is not relevant to our determination of the financial contribution with respect to the sublease of the Project Site.[2073]

8.757. In sum, our review of the relevant instruments suggests that Vought was legally entitled to assign to Boeing its right to sublease the Project Site from South Carolina Public Railways on 30 July 2009, without first obtaining the consent of, or otherwise requiring any action on the part of, South Carolina. Consequently, by entering into the Assignment and Assumption of Vought Sublease with Boeing on 30 July 2009, Vought assigned its subleasehold interests in the Project Site to Boeing, and Boeing thereby became the sublessee under the Vought Sublease. The subsequent execution by South Carolina Public Railways and Boeing of the Amended and Restated Sublease did not legally alter this position, nor did any of the consents to the Vought assignment executed by South Carolina Public Railways or Charleston County Aviation Authority.

8.758. As a result of the foregoing analysis, we conclude that the only relevant action that South Carolina took in granting a Ground Sublease of the Project Site was when South Carolina Public Railways entered into the Vought Sublease with Vought on 25 August 2006.[2074] Thus, the relevant financial contribution is a financial contribution made directly to Vought in 2006.

8.759. As we have explained, we do not agree with the European Union's characterization of the financial contribution as "ongoing", and we do not consider that it has demonstrated the existence of a direct financial contribution to Boeing. We wish to emphasize that in reaching this conclusion, we do not rule out the possibility that some or all of the benefit conferred by the financial contribution provided to Vought in 2006 could have "passed through" to Boeing when it became the assignee Vought's interest in the Vought Sublease on 30 July 2009, and thereby obtained the right to use and control of the Project Site from that point onwards.

[2071] This also appears to be the understanding of South Carolina, as in the second recital of the Ground Lease, when referring to the assignment of the Vought Sublease to Boeing on 30 July 2009, Charleston County Aviation Authority and South Carolina Public Railways state that pursuant to the Assignment and Assumption of the Vought Sublease dated 30 July 2009, the Vought Sublease *thereby became* the "Boeing" Sublease. (First Amendment to Ground Lease Agreement by and between Charleston County Aviation Authority and South Carolina Public Railways (19 November 2009), (Exhibit EU-476)).

[2072] As we note in para. 8.710, the operative terms of the Amended and Restated Sublease as regards term, annual rent and representations of the sublessor and sublessee for all practical purposes remain the same as those of the Vought Sublease. While the European Union argues that the "additional rent" provision in the Vought Sublease was eliminated by the Project Gemini Agreement, we note that the Project Gemini Agreement was executed by the State of South Carolina and Boeing on 1 January, 2010, which is subsequent to the date on which the Amended and Restated Sublease was executed. The Amended and Restated Sublease as originally executed contained the same "additional rent" provision as the Vought Sublease. (See European Union's response to Panel question No. 39, para. 225).

[2073] See also para. 8.746.

[2074] Indeed, the European Union's own approach to the calculation of the "benefit" conferred by the financial contribution reflects the notion that the financial contribution was made in August 2006 rather than in 2009. The European Union bases its estimate of the "benefit" on the annual value of the sublease of the Project Site from the first full year of the sublease to Boeing (i.e. from January 2010) through the end of the final five year extension on 31 December 2041. However, its estimate of the annual value is the "base lease value" of the Project Site established in the Vought Sublease and negotiated with Vought in 2006. (See European Union's first written submission, paras. 558 and 561).

8.760. While it is well accepted that a financial contribution provided to one entity can be demonstrated to have conferred a benefit on (and thus constitute a subsidy to) another entity, the European Union bears the onus of demonstrating that the benefit conferred by the financial contribution to Vought passed through to Boeing as of 30 July 2009 or subsequently, particularly in light of the United States' arguments that Boeing's acquisition of Vought's South Carolina operations, including the assignment of the sublease of the Project Site, was an arm's-length transaction for fair market value.[2075] The European Union has not attempted to do so, because its characterization of the relevant financial contribution renders such a demonstration irrelevant. However, we find its characterization of the relevant financial contribution, whether commencing on 30 July 2009 or 19 November 2009, to be in error. This being so, the European Union has failed to establish the existence of any benefit conferred on Boeing by whichever of the legal instruments the European Union challenges as the Ground Sublease of the Project Site.

8.2.8.5.4 Conclusion

8.761. In light of our findings above with respect to the sublease of the Project Site, we conclude that the European Union has failed to establish that the measure involves a subsidy to Boeing within the meaning of Article 1 of the SCM Agreement.

8.2.8.6 Whether specific subsidies exist by virtue of South Carolina's provision of Gemini and Emerald facilities and infrastructure to Boeing

8.2.8.6.1 Introduction

8.762. In paragraph 24 of its panel request, the European Union identifies the following measure as a subsidy related to Project Gemini directly benefiting Boeing:

> Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Gemini Agreement between Boeing and the State of South Carolina, dated 1 January 2010, funded through state general obligation bonds issued pursuant to Title 11, Chapter 41 of the S.C. Code, as amended by Section 5 of H3130, Act No. 124, 2009 S.C. Acts 1092 (H3130), and S.C. Code § 55-11-520, at no cost to Boeing.

8.763. In paragraph 25 of its panel request, the European Union identifies the following measure as a subsidy related to Project Emerald directly benefiting Boeing:

> Provision of facilities and infrastructure at the Charleston International Airport site, as provided for in the Project Emerald Confidential Site Development Agreement, funded through state general obligation bonds issued pursuant to Title 11, Chapter 41 of the S.C. Code, at no cost to Boeing.

8.764. The European Union's arguments concern, on the one hand, facilities and infrastructure relating to Boeing's 787 final assembly and delivery facility (Gemini facilities and infrastructure) and, on the other, facilities and infrastructure relating to Boeing's 787 fuselage fabrication and integration complex (Emerald facilities and infrastructure).[2076] The United States argues that the European Union has failed to demonstrate that the alleged financial contribution confers a benefit (with regard to the Gemini facilities and infrastructure) and that a financial contribution to Boeing exists (with regard to the Emerald facilities and infrastructure), and that the alleged financial contributions are specific within the meaning of Article 2 of the SCM Agreement.

8.765. With regard to the *Project Gemini facilities and infrastructure*, as explained in Section 8.2.8.3.1, under the Project Gemini Agreement, dated 1 January 2010, which provides for various incentives in relation to Project Gemini, South Carolina committed to issue a total of USD 220 million in state economic development bonds to offset the costs of infrastructure associated with Project Gemini and to issue USD 50 million in air hub bonds to offset the costs associated with air carrier hub terminal facilities.[2077] Boeing agreed that "the commitments made

[2075] United States' first written submission, para. 548.
[2076] European Union's first written submission, paras. 697 and 567.
[2077] Project Gemini Agreement, (Exhibit EU-467), Articles II(A) and II(B), p. 3.

by Commerce of general obligation bond funding set forth in this Section II were made based on the expectation that Boeing will attain the Minimum Job requirement and the Minimum Investment requirement as defined in Section IV herein, or, if those requirements are not met during the applicable time-period, will be obligated to reimburse the State in accordance with the Performance Provision attached hereto as *Exhibit A*."[2078]

8.766. The Project Gemini Agreement provides a set of procedures to ensure the proper application of the bond proceeds, whereby Boeing enters into contracts to construct infrastructure and facilities, pays the invoices and subsequently submits the invoices to South Carolina for reimbursement. On 13 January 2010, the South Carolina State Budget and Control Board adopted three resolutions, providing for the issuance and sale of economic development bonds and air hub bonds, as contemplated by the Project Gemini Agreement.[2079] The resolutions provided that the economic development bond proceeds were to be used as follows: USD 10 million for "{r}oad improvements necessary to provide Project Gemini full use of the project site"; USD 53.9 million for "{s}ite preparation, including clearing, grading, and filling the site, and construction of any required infrastructure"; USD 156.1 million for "{c}onstruction of the new assembly facility which is functionally related to and is part of the air carrier hub terminal facility".[2080] The air hub bond proceeds, in the amount of USD 50 million, were to be used for "{c}onstruction of the new assembly facility which is functionally related to and is part of the air carrier hub terminal facility".[2081]

8.767. Beginning in November 2009, Boeing contracted and paid for the construction of facilities and infrastructure pertaining to Project Gemini on the Project Site. The construction costs were reimbursed, at least partially, in the amount of USD 270 million, by South Carolina through bond proceeds. **[***]**.[2082]

8.768. With respect to the *Project Emerald facilities and infrastructure*, as explained in Section 8.2.8.3.2, Project Emerald was the subject of an agreement concluded in 2004 and 2006 between the relevant South Carolina authorities and Vought, on its own behalf and on behalf of the Project Emerald entities, which contemplated a number of incentives, including the issuance of state bonds to fund certain facilities and infrastructure.[2083] Specifically, South Carolina committed to providing economic development bond proceeds to the maximum amount of USD 120 million to Vought while Vought *inter alia* committed itself to utilising these proceeds towards the construction of infrastructure, as broadly defined in section 11-41-30 of the South Carolina Code, within broad categories of expenditure as laid out in the Project Emerald Agreement.[2084] The South Carolina State Budget and Control Board approved the issuance of the economic development bonds for

[2078] Project Gemini Agreement, (Exhibit EU-467), p. 3. (emphasis original)

[2079] South Carolina State Budget and Control Board, A Resolution to Provide for the Issuance and Sale of Not Exceeding in the Aggregate Fifty Million Dollars (USD 50,000,000) Principal Amount General Obligation State Economic Development Bonds of the State of South Carolina, to Prescribe the Purposes for Which the Proceeds Shall Be Expended, to Provide for the Payment Thereof, and Other Matters Relating Thereto (13 January 2010), exhibit 3 (Gemini economic development bond resolution), (Exhibit EU-481); South Carolina State Budget and Control Board, A Resolution to Provide for the Issuance and Sale of Not Exceeding in the Aggregate One Hundred Seventy Million Dollars (USD 170,000,000) Principal Amount General Obligation State Economic Development Bonds of the State of South Carolina, to Prescribe the Purposes for Which the Proceeds Shall Be Expended, to Provide for the Payment Thereof, and Other Matters Relating Thereto (13 January 2010) (Gemini additional economic development bond resolution), (Exhibit EU-482); and South Carolina State Budget and Control Board, A Resolution to Provide for the Issuance and Sale of Not Exceeding in the Aggregate Fifty Million Dollars (USD 50,000,000) Principal Amount General Obligation State Air Carrier Hub Terminal Facilities Bonds of the State of South Carolina, to Prescribe the Purposes for Which the Proceeds Shall Be Expended, to Provide for the Payment Thereof, and Other Matters Relating Thereto (13 January 2010), exhibit 2 (Gemini air hub bond resolution), (Exhibit EU-483).

[2080] Gemini economic development bond resolution, (Exhibit EU-481), pdf p. 44; Gemini additional economic development bond resolution, (Exhibit EU-482), pdf p. 44.

[2081] Gemini air hub bond resolution, (Exhibit EU-483), pdf p. 45.

[2082] Project Gemini Reimbursement Documents (formerly Exhibit US-13-287), (Exhibit EU-1269) (BCI).

[2083] Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560); and Final Project Emerald Incentive Agreement, (Exhibit EU-550).

[2084] Final Project Emerald Incentive Agreement, (Exhibit EU-550), sections 2.1 and 2.3. While the Initial Project Emerald Agreement originally contemplated the issuance of both economic development bonds and air hub bonds, it appears that Project Emerald was only eligible for economic development bonds, and only that type of bond was issued. Compare section 2.1 of the Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560) and section 2.1 of the Final Project Emerald Incentive Agreement, (Exhibit EU-550).

this purpose in a resolution adopted on 14 December 2004. This resolution provided that the bond proceeds were to be utilized as follows: USD 7.5 million for "site prep"; USD 5 Million for "wetlands", USD 2 million for "airport improvements"; USD 2 million for "road improvements"; USD 2 million for a "training/multi-use center"; and USD 97 million for "manufacturing facilities". The remaining USD 4 million was allocated to the costs of issuing the bonds. This resolution also provided a tentative timetable for expenditure of the bond proceeds in support of Project Emerald from November 2004 to April 2006.[2085]

8.769. Vought was granted the right to sublease the Project Site in the Initial Project Emerald Agreement concluded on 29 November 2004, an arrangement subsequently formalised through the Ground Lease and the Vought Ground Sublease, both dated 25 August 2006.[2086] The Vought Ground Sublease provides in Article 7 that "{s}ublessee is subleasing the Premises for the purpose of constructing thereon facilities related to the manufacture of products for the aeronautics industry (the 'Improvements')". Prior to the beginning of production in 2006, Vought contracted and paid for the construction of facilities and infrastructure on the Project Site. Vought's construction costs were then partially reimbursed by the South Carolina Department of Commerce through economic development bond proceeds.[2087]

8.770. On 6 July 2009, Vought and Boeing entered into the Vought Asset Purchase Agreement, pursuant to which Vought sold its title and interest in the assets that it owned, leased, licensed, used or held for use in connection with the design, manufacture, and assembly of the aft fuselage sections of the 787. On 30 July 2009, Vought assigned to Boeing its rights to the Project Site under the Assignment and Assumption of Vought Sublease[2088], and to the Emerald facilities and infrastructure constructed thereon, under two apparently **[***]** instruments.[2089]

8.771. On 19 November 2009, Boeing entered into the Amended and Restated Ground Sublease with South Carolina Public Railways[2090], Article 7 of which provides that "{s}ublessee is subleasing the Premises for the purpose of (a) constructing thereon or (b) using previously constructed thereon facilities related to or supporting the manufacture of products for the aeronautics industry (the 'Improvements')".

8.2.8.6.2 Main arguments of the parties

8.772. Regarding the *Gemini facilities and infrastructure*, the European Union argues that South Carolina constructed custom-built facilities and infrastructure for Boeing and is presently providing Boeing with the exclusive use of these facilities and infrastructure for the entirety of their useful life. Such a provision of goods and services other than general infrastructure constitutes a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[2091] The European Union asserts, in this regard, that the State of South Carolina maintains title to the facilities and infrastructure constructed with the bond proceeds and that Boeing only has a leasehold interest in these facilities and infrastructure.[2092] The European Union argues, in the alternative, that South Carolina has provided Boeing with funding for the construction of its 787

[2085] South Carolina State Budget and Control Board, Resolution providing for the issuance and sale of not exceeding in the aggregate one hundred sixty million (USD 160,000,000) principal amount general obligation state economic development bonds of the State of South Carolina, to prescribe the purposes for which the proceeds shall be expended, to provide for the payment thereof, and other matters relating thereto (14 December 2004), (Exhibit EU-551).

[2086] Ground Lease Agreement, (Exhibit EU-473). Exhibit E of the Ground Lease contains the Vought Ground Sublease.

[2087] South Carolina Office of the State Treasurer, Debt Management System, Project Emerald Reimbursement Documents, 6 January 2005 (formerly Exhibit US-13-288), (Exhibit USA-247) (BCI).

[2088] Assignment of Vought Sublease, (Exhibits EU-475/USA-449 (exhibited twice)).

[2089] Bill of Sale, Assignment and Assumption Agreement (30 July 2009), (Exhibit USA-515) (BCI); and Assignment and Bill of Sale from Vought Aircraft Industries, Inc. to Boeing Commercial Airplanes Charleston South Carolina, Inc. (30 July 2009), (Exhibit EU-552). Also see United States' response to Panel question No. 120, para. 249.

[2090] Amended and Restated Sublease, (Exhibit EU-471).

[2091] European Union's first written submission, para. 573. We note that while Article 1.1(a)(1)(iii) of the SCM Agreement refers to "goods *or* services other than general infrastructure" (emphasis added), the European Union mainly refers in its submissions to "goods *and* services".

[2092] European Union's first written submission, paras. 574-576.

final assembly facility through the transfer of bond proceeds to Boeing, which constitutes a direct transfer of funds in the sense of Article 1.1(a)(1)(i) of the SCM Agreement.[2093]

8.773. The European Union considers that its explanation of why under the Vought Ground Sublease Vought only has a leasehold interest in the Emerald facilities and infrastructure also applies to Boeing's interest in the Gemini facilities and infrastructure. Thus, Boeing has a leasehold interest, or the functional equivalent thereof, in the Premises, including all improvements constructed thereupon at whatever point.[2094]

8.774. In response to a Panel question, the European Union explains that, if the Panel were to reach the factual conclusion that Boeing constructed the Gemini facilities and infrastructure and that South Carolina partially reimbursed Boeing's costs of constructing these facilities and infrastructure, the measures should nevertheless be characterized as a provision of goods and services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[2095] In this respect, the European Union notes that the Appellate Body has indicated that a panel's characterization of a measure should identify the measure's most significant features.[2096] Thus, although as a formal matter funds were being transferred directly from South Carolina to Boeing, the essence of the transaction is one of South Carolina providing goods and services to Boeing. The transfer of funds from South Carolina to Boeing is merely a means to the end of enabling South Carolina to provide goods and services to Boeing. Indeed, even before the funds were raised through the sale of economic development bonds and air hub bonds it had already been determined that those funds must be expended on goods and services to be provided to Boeing, including for the construction and assembly of a new assembly facility. Boeing pays for the construction of the facility and infrastructure, and is then promptly reimbursed by the government for this expenditure. Moreover, the United States has acknowledged that "the State {of South Carolina} (or a political subdivision of the State) retains an ownership or reversionary interest in such property".[2097] According to the European Union, it should make no difference to the fundamental nature of the transaction, for purposes of the analysis under Article 1.1(a)(1) whether Boeing paid for the goods and services and was reimbursed, or whether the government initially paid for the goods and services to be provided to Boeing.[2098] The European Union also contends that the United States' argument on how to determine whether a benefit exists implies that the United States agrees that the measure should be characterized as a provision of goods and services within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[2099]

8.775. The European Union further argues that the provision of the Gemini facilities and infrastructure confers a benefit within the meaning of Article 1.1(b).[2100] The provision of facilities is made for less than adequate remuneration in relation to prevailing market conditions, as Boeing provides nothing in exchange. This is so regardless of whether the financial contribution is considered as a provision of goods and services other than general infrastructure under Article 1.1(a)(1)(iii), or as a direct transfer of funds under Article 1.1(a)(1)(i). Indeed, paying nothing constitutes less than adequate remuneration since Boeing would have two options to obtain access to the custom-made Gemini facilities and infrastructure in the market: either raise funds in the market to construct the facilities and infrastructure itself, or find another market participant to construct and then lease the facilities and infrastructure. Each option carries with it a financing cost.[2101]

[2093] European Union's first written submission, para. 577.
[2094] European Union's response to Panel question No. 101(c), paras. 129 and 130.
[2095] European Union's response to Panel question No. 106.
[2096] European Union's response to Panel question No. 106, para. 163.
[2097] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 64, para. 144.
[2098] European Union's response to Panel question No. 106, para. 164. See also European Union's comments on United States' response to Panel question Nos. 101, para. 305; and 116, paras. 340-342.
[2099] European Union's response to Panel question No. 106, para. 165; comments on United States' response to Panel question No. 101, para. 306.
[2100] European Union's first written submission, paras. 578-582; second written submission, paras. 635-638.
[2101] European Union's response to Panel question No. 105, paras. 155 and 156; first written submission, para. 579. Also see European Union's second written submission, para. 637.

8.776. With respect to specificity, the European Union argues that the provision of the Gemini facilities and infrastructure is specific within the meaning of Articles 2.1(a) and 2.1(c).[2102] First, the transfer of bond proceeds is specific to Boeing within the meaning of Article 2.1(a) since South Carolina committed to providing the Gemini facilities in the Project Gemini Agreement, the resolutions authorising the issuance of bonds explicitly restricted the use of the bond proceeds to the construction of the facilities for Boeing's use, and the legislative provision pursuant to which the bonds were issued was enacted under H3130, the Boeing incentive legislation.[2103] Furthermore, access to the subsidy is limited to the aviation and aerospace industry, since air hub bond proceeds may only be issued for air carrier hub terminal facilities, and economic development bond proceeds may only be used for buildings when used in connection with air hub carrier terminal facilities or located on government-owned land.[2104] Second, the provision of the Gemini facilities and infrastructure is specific within the meaning of Article 2.1(c) since this type of subsidy has only been used by a limited number of enterprises, and Boeing and its suppliers have been its predominant users.[2105]

8.777. Regarding the *Emerald facilities and infrastructure*, the European Union argues that South Carolina constructed custom-built facilities and infrastructure for Project Emerald and is presently providing Boeing with the exclusive use of these facilities and infrastructure for the remainder of their useful life. Such a provision of goods and services other than general infrastructure constitutes a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement.[2106] The European Union asserts, in this regard, that the State of South Carolina maintains title to the Emerald facilities and infrastructure constructed with the bond proceeds and that Boeing only has a leasehold interest in these facilities and infrastructure.[2107]

8.778. The European Union rejects the argument of the United States that South Carolina does not provide any Emerald facilities and infrastructure to Boeing since Boeing purchased the right to use the facilities and infrastructure from Vought and Global Aeronautica at arm's-length and for fair market value. The European Union contests the assertion that this purchase was made for fair market value and argues that the United States fails to explain how Boeing's transactions with Vought could change the fact that South Carolina is currently providing the facilities and infrastructure to Boeing at below-market rates.[2108]

8.779. In response to a Panel question, the European Union argues that Vought never actually owned, and therefore could not sell, the bond-funded Emerald facilities and infrastructure to Boeing, as they were owned at all times by South Carolina (or an agency thereof).[2109] First, the European Union contends that as a matter of the property laws of U.S. states: (a) the term "Premises" as used in the Vought Ground Sublease refers to buildings and land together; and (b) ownership of buildings and other permanent improvements constructed upon leased premises passes to the lessor.[2110] Second, the European Union argues that South Carolina built the Emerald facilities and infrastructure.[2111] South Carolina law requires that bond issuances be used to fund buildings located only on land owned by a state agency, or at an air carrier hub terminal facility, for a public purpose.[2112] As such, improvements constructed with the proceeds of state bonds become part of the leased premises, pursuant to the underlying rules of U.S. state property

[2102] European Union's first written submission, paras. 583-586; second written submission, paras. 639-642.
[2103] European Union's first written submission, paras. 583 and 584.
[2104] European Union's first written submission, para. 584; second written submission, para. 639.
[2105] European Union's first written submission, para. 585; second written submission, para. 639.
[2106] European Union's first written submission, para. 701.
[2107] European Union's first written submission, para. 702. As support for its view that Boeing only has a leasehold interest in the Emerald facilities and infrastructure, the European Union invokes Article 6.06(A) of the Ground Lease, as incorporated into the Boeing Ground Sublease, governing the ownership of improvements to the Project Site that are real property (Category I improvements). (European Union's first written submission, para. 702).
[2108] European Union's second written submission, para. 727. The European Union further states that, to the extent that the United States argues that the expected future value of the subsidies passed through to Vought and Global Aeronautica at the time of the sale to Boeing, a similar argument was rejected by the panel in the original proceedings. (European Union's second written submission, paras. 727 and 728 (referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.881)).
[2109] European Union's response to Panel question No. 101, para. 134.
[2110] European Union's response to Panel question No. 101(a), paras. 121, 122, and 125.
[2111] European Union's response to Panel question No. 101(a), para. 121.
[2112] European Union's response to Panel question No. 101(a), paras. 122 and 123.

law.[2113] In this respect, the European Union contends that section 6.06(A) of the Ground Lease does not affect the respective property interests of South Carolina Public Railways and Vought in Category I Improvements. In particular, given that South Carolina Public Railways is part of the South Carolina Department of Commerce, section 6.06(A) does not provide a basis for transferring ownership of the improvements built by the South Carolina Department of Commerce to Vought.[2114] Finally, the European Union argues that section 4.9 of the Vought Asset Purchase Agreement does not clarify the nature of Vought's rights in the Emerald facilities and infrastructure.[2115]

8.780. The European Union considers that the fact that the Emerald facilities and infrastructure are owned by South Carolina, and that the facilities and infrastructure became part of the Premises subject to the Ground Sublease, confirms that South Carolina, through Charleston County Aviation Authority and South Carolina Public Railways as lessors, is "providing" such facilities and infrastructure directly to Boeing as lessee.[2116]

8.781. Nonetheless, the European Union posits, with regard to each of the financial contributions associated with the provision of land and the provision of the Emerald and Gemini facilities and infrastructure, that South Carolina or a state agency is providing Boeing with the right to possess and use tangible assets that would (or do) belong to the state. In this regard, it is irrelevant whether Boeing is considered to have legal title to, or simply a leasehold interest in, such assets as both arrangements would constitute "provision" of goods and services.[2117]

8.782. The European Union further argues that the provision of the Emerald facilities and infrastructure confers a benefit to Boeing within the meaning of Article 1.1(b), since it is made for less than adequate remuneration in relation to prevailing market conditions.[2118] Finally, the European Union contends that the provision of the facilities and infrastructure is specific within the meaning of Articles 2.1(a) and 2.1(c). Indeed, the resolutions authorising the issuance of the bonds indicate that access to the subsidy is *de jure* limited to the Project Emerald companies, or at a minimum the aeronautics industry. The subsidy is also *de facto* specific since it has only been used by a limited number of enterprises, and Boeing and its suppliers have been the predominant users.[2119]

8.783. Regarding the *Gemini facilities and infrastructure*, the United States argues that the European Union's assertion regarding the existence of a financial contribution in the form of a provision of goods rests on factual misunderstandings.[2120] First, the United States argues that Boeing, not South Carolina, constructed the facilities and infrastructure, and that South Carolina's only role was to reimburse a portion of Boeing's costs.[2121] In this respect, the United States points to the reimbursement forms and supporting documentation for Boeing's expenditures in constructing the facilities and infrastructure.[2122] Second, the United States contends that, contrary to the European Union's assertion, Boeing, not South Carolina, maintains title to the facilities and infrastructure constructed with the bond proceeds. Boeing obtained this title at the latest upon Boeing's construction of the facilities and infrastructure, and pursuant to the Ground Lease, such

[2113] European Union's response to Panel question No. 101(a), para. 125.
[2114] European Union's response to Panel question No. 101(a), para. 124. The European Union argues that while it is possible that Vought retained ownership of improvements constructed solely by Vought, subject to the reversionary interest of the South Carolina Civil Aviation authority upon expiry of the lease, such term-limited ownership does not appear to differ from a transferable leasehold interest for the same term. (European Union's response to Panel question No. 101(a), para. 126).
[2115] European Union's response to Panel question No. 101(a), para. 128.
[2116] European Union's response to Panel question No. 101(d), para. 134.
[2117] European Union's response to Panel question No. 101, para. 132.
[2118] European Union's first written submission, para. 705.
[2119] European Union's first written submission, paras. 706-708.
[2120] United States' second written submission, para. 512. The United States indicates with respect to the alleged financial contribution in the form of a provision of bond-funded facilities and infrastructure to Boeing in the context of Project Gemini that it "simply addresses the EU case as it has argued it, and has demonstrated why the EU's case is flawed. The United States has not taken a position on the correct characterization of this series of transactions outside the context of the EU's claims and arguments". (United States' comments on European Union's response to Panel question No. 101, fn 257). See also United States' comments on European Union's response to Panel question No. 101(d), fn 229.
[2121] United States' response to Panel question Nos. 101, para. 203, 116, paras. 240-242; and comments on European Union's response to Panel question No. 106, para. 169.
[2122] United States' response to Panel question No. 116, para. 240.

property remains Boeing's until the expiration or termination of the Ground Lease.[2123] With reference to a statement by the European Union that "in any circumstance involving a provision of goods, the goods will have been constructed or acquired before they are provided", the United States argues that the European Union's own standard implies that South Carolina could not have provided the Emerald or Gemini facilities and infrastructure to Boeing because it never constructed or acquired those facilities or infrastructure. Since the Gemini facilities and infrastructure were never owned by South Carolina, they could not have been provided by South Carolina to Boeing. The United States considers that the European Union's assertion that "it is irrelevant whether Boeing is considered to have legal title or simply a leasehold interest in such assets, as both arrangements would constitute 'provision'" is belied by the European Union's arguments, which are based on South Carolina's purported ownership of the facilities and infrastructure.[2124]

8.784. The United States considers that in contending that it makes no difference whether Boeing paid for the goods and services and was reimbursed, or whether the government initially paid for the goods and services to be provided to Boeing, the European Union ignores the fact that only a portion of the costs were reimbursed.[2125]

8.785. With respect to the *Emerald facilities and infrastructure*, the United States argues that there is no financial contribution by a government since Boeing's right to use the facilities and infrastructure stems from Vought, not South Carolina. More specifically, Boeing obtained ownership of the Emerald facilities and infrastructure through the Vought Asset Purchase Agreement and related legal instruments.[2126] The United States argues that its position that Vought owned the Emerald facilities and infrastructure, prior to selling them to Boeing is supported by section 6.06(A) of the Ground Lease. This provision indicates that when improvements are constructed by the sublessee of Operator (e.g. Vought or Boeing), such improvements remain the property of sublessee until expiration or termination of the Ground Lease. It is not until the expiration or termination of the Ground Lease that such improvements become the property of the Charleston County Aviation Authority (the Lessor). Thus, while South Carolina (through Charleston County Aviation Authority) does not have and has never had title to the improvements, it does maintain a future interest in the improvements.[2127] The United States also considers that Vought's ownership of the Emerald facilities and infrastructure is corroborated by the Vought Asset Purchase Agreement. Indeed, section 4.9(c)(i) states that Vought "owns the Facilities free and clear of any Encumbrances except for Permitted Encumbrances and Outstanding Encumbrances".[2128]

8.786. Furthermore, the United States argues that the European Union is wrong to state that the Emerald facilities and infrastructure were built by South Carolina. The facilities and infrastructure were in fact built by Vought. Only after paying for the construction of the facilities and infrastructure did Vought apply for partial reimbursement from the South Carolina Department of Commerce. The South Carolina Department of Commerce had no control over the construction process itself, nor did it select which of the expenditures it would reimburse. There is no basis for concluding that, by the South Carolina Department of Commerce partially reimbursing Vought's construction costs, South Carolina Public Railways gained title to the Emerald facilities and infrastructure.[2129] In any event, the European Union is wrong to presume that ownership of the Emerald facilities and infrastructure is determined by who built them. Instead, section 6.06(A) of the Ground Lease provides a clear statement as to "Title to Improvements and Alterations".[2130]

8.787. Finally, the United States rejects the European Union's argument that it ultimately does not matter whether Vought had a leasehold interest in the facilities and infrastructure or a time-limited ownership. Where South Carolina never had more than a future interest in the

[2123] United States' response to Panel question No. 101, paras. 199 and 202.
[2124] United States' comments on European Union's response to Panel question No. 101, paras. 149 and 150.
[2125] United States' comments on European Union's response to Panel question No. 106, para. 169.
[2126] See e.g. United States' response to Panel question Nos. 101(b), para. 194, and 101(d), para. 199.
[2127] United States' response to Panel question No. 101, para. 190.
[2128] United States' response to Panel question No. 101(a), para. 191.
[2129] United States' comments on the European Union's response to Panel question No. 101(a), para. 140.
[2130] United States' comments on the European Union's response to Panel question No. 101(a), paras. 138 and 139.

Emerald facilities and infrastructure, South Carolina could not have "provided" those facilities and infrastructure within the meaning of Article 1.1(a)(1).[2131]

8.788. The United States argues that the provision of the Gemini facilities and infrastructure confers no benefit within the meaning of Article 1.1(b).[2132] First, the European Union's benefit arguments are based on the factually inaccurate premise that Boeing received the bond funds for the Gemini facilities and infrastructure for free. Boeing has in fact compensated South Carolina through its investment in unimproved real property at the Project Site, which will revert to South Carolina at the end of the Amended Ground Lease.[2133] Second, the European Union has failed to provide an adequate benchmark for determining benefit since the relevant question for the European Union's arguments is how much more Boeing would pay to rent the facilities and infrastructure in question if South Carolina were a market actor.[2134] Furthermore, the United States is aware of no logic or principle endorsed by the Appellate Body supporting the European Union's position that, even if the financial contribution is properly characterized as a direct transfer of funds, the benefit has the same value as the value of the goods and services that must, by law, be purchased with the funds transferred by the government.[2135]

8.789. With respect to specificity, the United States argues that the provision of the bond-funded Gemini facilities and infrastructure is not specific within the meaning of Article 2.[2136] The specificity analysis should be carried out at the level of the South Carolina legislative system for issuing state bonds.[2137] First, the provision of bond-funded facilities and infrastructure is not specific within the meaning of Article 2.1(a), since there is no provision in this legislative system limiting access for funds raised through economic development bonds, air hub bonds, and industrial revenue bonds to certain enterprises.[2138] Moreover, none of the individual pieces of legislation pursuant to which the bonds are issued limit access to certain enterprises.[2139] The mere fact that the Project Gemini Agreement and the South Carolina State Budget and Control Board resolutions authorising the issuance of bonds mention Boeing by name is not sufficient to satisfy the requirements of Article 2.1(a), since the specificity analysis must be carried out at a different level.[2140] Second, the provision of bond-funded facilities and infrastructure is not specific within the meaning of Article 2.1(c), since the South Carolina bond scheme has funded facilities and infrastructure that are used by a variety of companies, only two of which are in the aerospace industry.[2141]

8.2.8.6.3 Evaluation by the Panel

8.2.8.6.3.1 Whether there is a financial contribution

8.790. The issue before the Panel is whether South Carolina authorities provide the Gemini and Emerald facilities and infrastructure[2142] to Boeing, such that a financial contribution exists within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement ("a government provides goods or services other than general infrastructure, or purchases goods"). In addition, with regard to the Gemini facilities and infrastructure, the European Union argues in the alternative that a financial contribution exists in the form of a direct transfer of funds in the sense of Article 1.1(a)(1)(i) of the SCM Agreement ("a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees)"). The

[2131] United States' comments on the European Union's response to Panel question No. 101(a), para. 145.
[2132] United States' first written submission, paras. 583 and 584; second written submission, para. 519.
[2133] United States' first written submission, para. 488; response to Panel question Nos. 105, para. 224, 128, para. 265, and 129, paras. 266 and 267; and comments on European Union's response to Panel question Nos. 105, paras. 162-168, and 106, para. 169.
[2134] United States' first written submission, paras. 583 and 584; second written submission, para. 519.
[2135] United States' comments on European Union's response to Panel question Nos. 105, paras. 162 and 164-168, and 106, para. 170. Also see United States' response to Panel question No. 105, para. 228.
[2136] United States' first written submission, paras. 619-632; second written submission, paras. 523-532.
[2137] United States' first written submission, para. 624.
[2138] United States' first written submission, paras. 625-628; second written submission, paras. 524-528.
[2139] United States' first written submission, para. 626.
[2140] United States' first written submission, para. 627.
[2141] United States' first written submission, paras. 629-632; second written submission, paras. 529-532.
[2142] As noted above, "Gemini facilities and infrastructure" refers to Boeing's 787 final assembly and delivery facility and "Emerald facilities and infrastructure" refers to Boeing's 787 fuselage fabrication and integration complex.

European Union makes no such alternative argument under Article 1.1(a)(1)(i) with respect to the Emerald facilities and infrastructure.[2143]

8.791. The principal argument of the European Union to support its view that South Carolina "provides" the Gemini and Emerald facilities and infrastructure to Boeing[2144] is that South Carolina "constructed", and "is presently providing Boeing with exclusive use of", the Gemini and Emerald facilities.[2145] The European Union argues, in this respect, that South Carolina owns, and that Boeing has a leasehold interest in, the Gemini and Emerald facilities and infrastructure.[2146].

8.792. We consider that the evidence before us does not support this argument of the European Union regarding the construction of, and ownership interest in, the Gemini and Emerald facilities and infrastructure: (a) we see no factual basis for the contention that South Carolina "constructed" the Gemini and Emerald facilities; and (b) it follows from the Ground Lease (and, in the case of the Emerald facilities and infrastructure, from the Vought Asset Purchase Agreement) that Boeing actually owns, and does not sublease, the Gemini or Emerald facilities and infrastructure.

8.793. First, as noted above, in January 2010, and pursuant to commitments made in the Project Gemini Agreement, South Carolina issued bonds to defray a portion of the costs incurred by Boeing in connection with the construction of certain Project Gemini facilities and infrastructure. The Project Gemini Agreement provides a set of procedures to ensure the proper application of the bond proceeds, whereby Boeing enters into contracts to construct infrastructure and facilities, pays the invoices and subsequently submits the invoices to South Carolina for reimbursement.[2147] In accordance with these procedures, **[***]**. We see nothing in the record to suggest that South Carolina's role with respect to the construction of these facilities and infrastructure went beyond the provision of funding to offset a portion of the costs incurred by Boeing.[2148]

[2143] European Union's first written submission, para. 701.

[2144] The European Union's argument concerns the alleged provision of the Gemini and Emerald facilities and infrastructure to Boeing. The European Union does not request the Panel to make a finding that prior to Boeing's assumption of the Vought Ground Sublease in July 2009 a financial contribution existed in relation to Vought by virtue of South Carolina's provision of the Emerald facilities and infrastructure to Vought. The aim of the European Union's discussion of Vought's legal interest in the Emerald facilities is to bolster its arguments that Boeing only has a leasehold interest in these facilities. The European Union asserts that since Vought only held a leasehold interest in the Emerald facilities, Boeing could not have acquired ownership of the facilities when it acquired Vought's assets. See e.g. European Union's comments on United States' response to panel question No. 101(a), para. 293 ("{g}iven that United States' central premise with respect to ownership of the project Emerald facilities is incorrect, it follows that all of its claims which depend on that premise are, in turn, incorrect. Accordingly, because Vought did not own the Project Emerald facilities, it could not have sold them to Boeing; rather it must have simply assigned its leasehold interest. Nor does Boeing now hold title to the Project Emerald facilities, as it could not have acquired from Vought greater rights to the property than Vought had, itself. It additionally follows that, if Vought held only a leasehold interest in the Project Emerald facilities, title to the facilities must be held by the lessor (CCAA) or sub-lessor (SCPR/SCDOR)").

[2145] European Union's first written submission, paras. 701 and 573.

[2146] While the argumentation presented by the European Union as to why South Carolina should be considered to "provide" the Gemini and Emerald facilities and infrastructure is mainly based on the assertion that Boeing has access to these facilities and infrastructure pursuant to a sublease arrangement with the South Carolina authorities, the European Union has also suggested, at a later stage of this proceeding, that even in the absence of such a sublease arrangement South Carolina should be considered to "provide" the Emerald and Gemini facilities and infrastructure to Boeing. (See para. 8.805 below).

[2147] See para. 8.766 above.

[2148] With respect to the reimbursement through state bonds being characterized as *partial* in nature, we note that the European Union contests the extent of the *land remediation* reimbursed by South Carolina, and argues that South Carolina paid for "all or nearly all" of the remediation necessary to make the Project Site usable. (European Union's comments on United States' response to Panel question No. 123, para. 352; Supplemental Expert Report of D. E. Fields, MAI, CRE, FRICS, 24 November 2014, (Exhibit EU-1349) (BCI), p. 4; also see comments on United States' response to Panel question Nos. 125-127, paras. 357-360, and 128, para. 362). Nonetheless, the European Union does not appear to contest the characterization of the reimbursement for the *building of facilities* as partial. (See European Union's response to Panel question No. 106, para. 167; also see European Union's comments on United States' response to Panel question No. 123, para. 352: "despite its best efforts, Boeing has yet to find a state that would directly pay for all of its capital expenditures" (fn omitted, emphasis original)). The United States explains that Boeing spent a total of **[***]** in real property investment at the Project Site. As this entire figure was eligible for reimbursement from state bonds, Boeing, at its discretion, selected USD 270 million worth of expenses for which to seek reimbursement. (United States' response to Panel question No. 123, paras. 254-256; also see Boeing

8.794. Similarly, the evidence before us shows that, prior to the beginning of production in 2006, Vought contracted and paid for the construction of the Emerald facilities and infrastructure. The construction costs were then partially reimbursed by the South Carolina Department of Commerce through economic development bond proceeds.[2149] Indeed, in the Project Emerald Agreement, South Carolina committed itself to providing economic development bond proceeds to the maximum amount of USD 120 million to Vought, while Vought *inter alia* committed itself to utilising these proceeds towards the construction of "infrastructure", as broadly defined in section 11-41-30 of the South Carolina Code, within broad categories of expenditure as laid out in the Project Emerald Agreement.[2150] As such, it seems to us that South Carolina merely provided bond funds to Vought, which were to be used for the construction of broadly-defined categories of facilities and infrastructure.

8.795. In light of the above, we do not consider that the European Union has demonstrated that South Carolina constructed or built the Gemini or Emerald facilities and infrastructure. Instead, we find that South Carolina provided bond proceeds to Boeing, in the context of Project Gemini, and similarly to Vought, in the context of Project Emerald, which were to be used for the construction of broadly-defined categories of facilities and infrastructure.[2151]

8.796. Second, the Ground Lease, as incorporated into the Vought Ground Sublease and the Amended and Restated Ground Sublease, contains a provision that specifically addresses the issue of ownership of the facilities and infrastructure constructed on the Project Site. This provision indicates that Vought and subsequently Boeing obtained ownership over such facilities and infrastructure. Section 6.06 of the Ground Lease, entitled "Title to Improvements and Alterations", provides ownership rules for "Improvements" built on the Project Site. "Improvements" are defined as:

> {A}ny and all improvements, additions or alterations made to the Leased Premises by the Operator and its contractors, agents, employees, and sublessees, including, but not limited to buildings, bridges, overpasses, retaining walls, ditches, culverts, lighting supports, earth fills, earth excavations, clearing, grubbing, grading, roads, utilities, paving, ground cover, fences, signs, railway spurs and tracks, and landscaping, constructed, installed or placed on, under or above the Leased Premises.[2152]

Improvements are divided into two categories. "Category I Improvements" are defined in the Ground Lease as "Improvements encompassing building locations, heights, elevations, materials used in the exterior construction, landscaping and any other exteriors".[2153] Facilities and infrastructure thus appear to be covered by the scope of Category I Improvements.

8.797. Section 6.06(A) provides with respect to Category I Improvements that:

> All Category I Improvements made with the Leased Premises during the Term shall remain the property of Operator, or any assignee or sublessee of Operator, as

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Investment in South Carolina (2010-3Q2012), (Exhibit USA-324) (BCI), and explanations of this Exhibit in United States' response to Panel question Nos. 124, para. 261, and 128, para. 265). Boeing received compensation through state bonds of **[***]** under the category **[***]**, and **[***]** under the category **[***]**. (SC Department of Commerce, *Summary of Reimbursements to Boeing*, (Exhibit USA-519) (BCI)). The amount of Boeing's unreimbursed real property investment at the Project Site, that is a total of **[***]**, is split between **[***]** under the category **[***]**, **[***]** under the category **[***]**, and **[***]** under the category **[***]**. The United States explains that **[***]** includes expenditures to **[***]**. **[***]** refers to **[***]**. (Comparison of Boeing Investment in South Carolina (2010-3Q2012), (Exhibit USA-324) (BCI), and SC Department of Commerce, *Summary of Reimbursements to Boeing*, (Exhibit USA-519) (BCI); also see explanations in United States' response to Panel question Nos. 124, paras. 259-261 and fn 327, and 128, para. 265). In light of this evidence, we consider it appropriate to characterize the reimbursement of Boeing's real property investment at the Project Site, including land remediation as well as the building of facilities, as partial in nature.

[2149] Final Project Emerald Incentive Agreement, (Exhibit EU-550), sections 2.1 and 2.3.

[2150] See para. 8.768 above.

[2151] The European Union does not request the Panel to find that the payments made to Vought under these procedures constitute a financial contribution to Vought.

[2152] Ground Lease Agreement, (Exhibit EU-473), section 1.01(K).

[2153] Ground Lease Agreement, (Exhibit EU-473), section 1.01(F).

> applicable, until expiration or termination of this Agreement, at which time all Category I Improvements shall automatically become the property of Authority.[2154]

"Operator" is defined in the Ground Lease as meaning "South Carolina Public Railways, its successors, sublessees and assign{ee}s".[2155]

8.798. It therefore appears to us that the clause "Operator, or any assignee or sublessee of Operator, as applicable" indicates that if there is an assignee or sublessee of South Carolina Public Railways, Category I Improvements shall remain the property of that assignee or sublessee. Thus, during the Vought Ground Sublease, any Category I Improvements built by Vought remained the property of Vought as sublessee of the Operator. Similarly, during the term of the Amended Boeing Ground Sublease, any Category I Improvements built by Boeing remain the property of Boeing as sublessee of the Operator. It is only after the expiration or termination of the Ground Lease that these improvements become the property of the Authority.[2156]

8.799. We consider that the European Union's argument that "Premises" generally encompass land as well as the buildings on it is irrelevant, since the term "Premises" is specifically defined in the Ground Lease for the purposes of that agreement. Indeed, "Premises", as used in the Ground Lease, is defined as "that portion of the Airport more particularly described in Exhibit A attached hereto"[2157], whereby Exhibit A appears to represent the 240-acre parcel of land that constitutes the Project Site.[2158] Thus, it is clear that the definition of "Premises" is limited to land and does not include facilities and infrastructure constructed thereon.

8.800. It follows that the subleasehold interest in the Project Site provided for in the Vought Ground Sublease and the Amended and Restated Ground Sublease is confined to a particular tract of land and does not encompass any facilities and infrastructure.[2159] We consider moot the European Union's argument that the ownership of the Emerald facilities and infrastructure is governed by general rules of U.S. state property law and South Carolina law on the expenditure of bonds. Instead, there is a specific provision of the Ground Lease that was precisely intended to govern the ownership of Category I Improvements built on the Premises during the term of the lease and potential subleases, and this provision indicates that the improvements built by Vought remain the property of Vought for the duration of the Ground Lease.

8.801. Our conclusion regarding the ownership of the Gemini and Emerald facilities and infrastructure is based on an analysis of the text of the Ground Lease, as incorporated into the Vought Ground Sublease and the Amended and Restated Ground Sublease. While the United States also relies on the Vought Asset Purchase Agreement as evidence that Vought owned the Emerald facilities, we agree with the European Union that the Vought Asset Purchase Agreement is not clear as to the nature of Vought's right to the Emerald facilities and infrastructure.[2160] Thus, we do not consider that the Vought Asset Purchase Agreement either

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[2154] Ground Lease Agreement, (Exhibit EU-473), section 6.06(A).

[2155] Ground Lease Agreement, (Exhibit EU-473), section 1.01(M).

[2156] "Authority" means "the Charleston County Aviation Authority, the governing body of the Airport District, which is granted the responsibilities of exercising and performing the corporate powers and duties of the Airport District, and when used herein refers to both." (Ground Lease Agreement, (Exhibit EU-473), section 1.01(E)).

[2157] Ground Lease Agreement, (Exhibit EU-473), section 1.01(L).

[2158] Ground Lease Agreement, (Exhibit EU-473), annex A.

[2159] The text of the Vought Ground Sublease and the Amended and Restated Ground Sublease also indicates that the scope of the subleasehold interest is limited to land. Article 7 of the Vought Ground Sublease states that "{s}ublessee is subleasing the Premises for the purpose of constructing thereon facilities related to the manufacture of products for the aeronautics industry". (Ground Lease Agreement, (Exhibit EU-473), pdf p. 63). Article 7 of the Amended and Restated Ground Sublease states that "{s}ublessee is subleasing the Premises for the purpose of (a) constructing thereon or (b) using previously constructed thereon facilities related to or supporting the manufacture of products for the aeronautics industry". (Amended and Restated Sublease, (Exhibit EU-471), pdf p. 4). In both cases, if the scope of the subleasehold included facilities, the agreements would not state that the Premises were being subleased for the purpose of constructing facilities thereon or using facilities already constructed thereon. Also see para. 8.769 above.

[2160] The provisions of section 2 indicate that Vought sold, assigned, transferred, conveyed and delivered assets either owned, leased, licensed, used or held for use by Vought, including the North Charleston Facility. Such a statement is inconclusive as to the nature of Vought's rights to these facilities. Indeed, the North Charleston Facility could have been either owned, leased, licensed or held for use by Vought. Section 4.9 in turn indicates that Vought owns facilities, except to the extent leased pursuant to **[***]**. The United States

confirms or refutes our conclusion reached on the basis of the Ground Lease. At the same time, however, the Vought Asset Purchase Agreement and related instruments[2161] are relevant as evidence that Vought transferred its ownership rights in the Emerald facilities and infrastructure to Boeing. Therefore, the assertion of the European Union that Boeing acquired its interest in the Emerald facilities and infrastructure through the Assignment and Assumption of the Ground Sublease is erroneous.[2162]

8.802. In light of the above, we consider the factual premise of the European Union's main argument under Article 1.1(a)(1)(iii), namely that South Carolina owns, and Boeing only has a leasehold interest in, the Gemini and Emerald facilities and infrastructure, to be erroneous. Rather we find that: (a) Vought owned the facilities and infrastructure constructed on the Project Site during the term of the Vought Sublease as a consequence of the operation of specific provisions in the Ground Lease defining ownership rights in such facilities and infrastructure; therefore, there is no merit to the European Union's argument that Vought could not have transferred ownership of the Emerald facilities and facilities to Boeing; (b) Boeing acquired the Emerald facilities and infrastructure as part of its purchase of Vought's assets in July 2009; and (c) Boeing owns the facilities and infrastructure constructed on the Project Site in the context of Project Gemini as a consequence of the operation of specific provisions in the Ground Lease defining ownership rights in such facilities and infrastructure.[2163]

8.803. Article 1.1(a)(1)(iii) of the SCM Agreement stipulates that a financial contribution exists where a government provides goods or services other than general infrastructure. In *US – Softwood Lumber IV*, the Appellate Body considered whether the grant of an "intangible right to harvest" equated to a provision of goods within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement. The Appellate Body noted definitions of the term "provide" as "supply or furnish for use; make available" and "to put at the disposal of".[2164] The Appellate Body reasoned that there must be a "reasonably proximate relationship" between the governmental action of providing the good or service and the use or enjoyment of the good or service by the recipient.[2165] It stated that "a government must have some control over the *availability* of a specific thing being 'made available'".[2166]

8.804. In our view, since Boeing does not sublease but actually owns the Gemini and Emerald facilities and infrastructure, and it is clear that its ownership interest was not conveyed to Boeing by South Carolina, there is no basis to conclude that a financial contribution to Boeing exists in the form of a provision of goods or services other than general infrastructure. South Carolina did not, and does not "have some control over the availability of" the facilities and infrastructure that are actually owned by Boeing and where Boeing acquired its ownership not from South Carolina but by operation of the relevant provisions of the Ground Lease (in the case of the Gemini facilities and infrastructure) or from Vought (in the case of the Emerald facilities and infrastructure).

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has provided no further explanation of its assertion that the majority of facilities and infrastructure built on the Project Site during the term of Vought's sublease was not subject to a lease by a Material Contract. (See United States' comments on European Union's response to Panel question No. 101(a), para. 143 and fn 219).

[2161] See Assignment and Bill of Sale from Vought Aircraft Industries, Inc. to Boeing Commercial Airplanes Charleston South Carolina, Inc. (30 July 2009), (Exhibit EU-552); Exhibit J of the Vought-Boeing Asset Purchase Agreement, (Exhibit USA-450) (BCI); and Bill of Sale, Assignment and Assumption Agreement (30 July 2009), (Exhibit USA-515) (BCI). Also see United States' response to Panel question Nos. 101(a), paras. 192 and 193, 101(b), para. 194 and fn 263, and 120, paras. 247-249.

[2162] European Union's response to Panel question No. 101(b), para. 129 ("{t}he European Union is not aware of any mechanism by which Boeing obtained its interest in the Premises and the various improvements already located thereupon, other than the assignment and assumption of the Ground Sublease (including CCAA's consent thereto), and the subsequent Amended and Restated Ground Sublease"); European Union's comments on United States' response to Panel question No. 101(b), para. 298 ("{a}s the United States has failed to show otherwise, the European Union continues to consider that the Assignment and Assumption of Vought Sublease was the legal mechanism by which Boeing initially obtained its interest in the Premises and the improvements located thereupon, subject to the consent of the CCAA" (fn omitted)).

[2163] In any event, with regard to the Emerald facilities and infrastructure, even if the European Union were correct that Boeing only has a leasehold interest in these facilities and infrastructure, we would not necessarily find that there is a financial contribution provided by South Carolina to Boeing. This is because Boeing obtained its interest in the Emerald facilities and infrastructure as part of its purchase of Vought's assets. See Section 8.2.8.5.3 above.

[2164] Appellate Body Report, *US – Softwood Lumber IV*, para. 69.

[2165] Appellate Body Report, *US – Softwood Lumber IV*, para. 71.

[2166] Appellate Body Report, *US – Softwood Lumber IV*, para. 71. (emphasis original)

8.805. We note that, in its responses to Panel questions, the European Union makes several arguments suggesting that South Carolina should be considered to "provide" (within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement), facilities and infrastructure to Boeing regardless of whether Boeing owns or subleases the facilities and infrastructure. Aside from the fact that these arguments would seem to be inconsistent with the main line of reasoning advanced by the European Union on this matter in its two written submissions, we consider that these arguments are factually erroneous and legally unfounded as they stretch the meaning of the notion of a "provision" of goods or services other than general infrastructure beyond what we consider to be the proper interpretation of that notion as reflected in Article 1.1(a)(1)(iii) of the SCM Agreement.

8.806. Thus, one argument made by the European Union in response to a Panel question is that a provision of goods or services other than general infrastructure occurs, regardless of whether Boeing has a legal title or a leasehold interest in facilities and infrastructure, because "South Carolina (or a state agency) is providing Boeing with the right to possess and use tangible assets that otherwise would (or do) belong to the state".[2167] As discussed above, Boeing owns the Gemini and Emerald facilities and infrastructure at issue. The European Union does not explain the precise legal meaning of this alleged "right to possess and use", how the evidence before the Panel shows that South Carolina conveyed such a "right to possess and use" to Boeing, and on what factual basis it asserts that these facilities and infrastructure "would (or do) belong to the state".

8.807. The European Union also argues, in respect of the *Gemini facilities and infrastructure*, that South Carolina provides goods and services to Boeing by providing funding specifically for the purpose of reimbursing costs incurred by Boeing in the construction of the Project Gemini facilities and infrastructure; although as a formal matter funds were being transferred directly from South Carolina to Boeing, the essence of the transaction is one of South Carolina providing goods and services to Boeing.[2168] Related to this, the European Union contends that insofar as Boeing's ownership of the Gemini facilities and infrastructure is limited in time and subject to South Carolina's reversionary interest, this should be considered to be the "functional equivalent" of a leasehold arrangement.[2169]

8.808. It is not in dispute that South Carolina made payments to Boeing to cover a portion of the costs incurred by Boeing for the construction of the Gemini facilities and infrastructure. In our view, the most natural characterization of these payments is "a direct transfer of funds" within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement. We disagree with the European Union's argument that "the fundamental nature" of the transaction is a provision of goods because the payments were made for the specific purpose of funding the construction of certain facilities and infrastructure. There is nothing in the text of Article 1 to suggest that when it is clear that the nature of the measure is a direct transfer of funds, the purpose for which the funds are granted should be given a decisive weight in the characterization of that measure.

8.809. The logic underlying the European Union's argument is that where a particular type of financial contribution is made for the purpose of supporting a firm's financing of the construction or purchase of a good, such a financial contribution must be treated as a provision of that good in the sense of Article 1.1(a)(1)(iii) because of its "fundamental nature". Thus, if a government lends money, makes a payment or grants a tax credit to a firm for purposes of reimbursing the firm's acquisition costs, each of these measures would be a financial contribution in the form of a provision of a good or service other than general infrastructure. We consider that this logic is inconsistent with Article 1.1(a)(1), which clearly contemplates a characterization of a measure as a financial contribution on the basis of the manner in which that measure transfers value to a recipient.[2170] Therefore, even where they are somehow related to the purchase of goods or

[2167] European Union's response to Panel question No. 101(d), para. 132.

[2168] European Union's response to Panel question No. 106, para. 164.

[2169] See e.g. European Union's response to Panel question No. 101(c), para. 130; and comments on United States' response to Panel question No. 101, para. 305.

[2170] It is also inconsistent with the approach taken to the same issue by other panels and the Appellate Body. For example, in *EC and certain member States – Large Civil Aircraft*, the panel addressed whether certain infrastructure-related grants to Airbus (i.e. grants towards the costs of constructing the A380 assembly line in Hamburg, a grant for the expansion of Airbus' Nordenham facility, a grant for Airbus facilities in Broughton, Wales and grants for the expansion and modernization of Airbus and EADS plants in Puerto de Santa Maria, Illescas, Puerto Real, Sevilla and La Rinconada, Spain) were specific subsidies to Airbus. These infrastructure-related grants were analysed as financial contributions to Airbus in the form of direct transfers of

services by a recipient, grants, loans, and tax measures are distinctive types of financial contributions. The term "provide goods or services other than general infrastructure" cannot be interpreted so broadly as to include measures that fall naturally within the scope of the other types of financial contribution identified in Article 1.1(a)(1).

8.810. We consider that for a government to "provide", i.e. "to supply or furnish for use" or "to make available" facilities and infrastructure, these facilities and infrastructure must have been created. Indeed, the Appellate Body has observed that while the circumstances of the creation of infrastructure may be relevant to a proper characterization of what is provided, the creation of infrastructure is a precondition, and thus necessary, for the provision of that infrastructure.[2171] We do not consider that a private entity can be "provided" with created facilities and infrastructure by a government within the meaning of Article 1.1(a)(1)(iii) where that private entity is itself responsible for the construction of those facilities and infrastructure.

8.811. The notion that the financing provided by South Carolina is somehow tantamount to the actual provision of those facilities and infrastructure is also contradicted by the fact that South Carolina only covered a part of Boeing's expenditures for the construction of these facilities and infrastructure. Moreover, the European Union's position is based on the factual premise that the bond proceeds were pre-destined to be spent on the construction of specific facilities and infrastructure. The extent to which proceeds were thus pre-destined is debatable. It in fact seems that the purpose of the bond proceeds was so broadly defined and Boeing had such a margin of discretion in selecting which of its expenses to have reimbursed[2172] that the European Union is unable to precisely identify the Gemini facilities and infrastructure that were allegedly provided to Boeing *beyond the evidence that is contained in the bond withdrawal requests*. Similarly, in the context of specificity, the European Union's arguments mostly relate to the issuance of the bonds themselves.[2173] Indeed, the bond funds for Project Gemini were intended for use under broadly-defined categories of facilities and infrastructure. The European Union itself acknowledges that Boeing had complete and total control over how the proceeds were expended within the agreed-upon categories.[2174]

8.812. Finally, we find that South Carolina's reversionary, future ownership in the Gemini facilities and infrastructure does not give it any control at present over the availability of the facilities and infrastructure and therefore does not constitute a basis for finding that South Carolina "provides" the facilities and infrastructure to Boeing.

8.813. **In light of the foregoing considerations, we: (a) reject the European Union's argument that a financial contribution exists within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement because South Carolina provides Gemini and Emerald facilities and infrastructure to Boeing[2175]; (b) find that the payments made by South Carolina pursuant to commitments made in the Project Gemini Agreement to compensate Boeing for a portion of the costs in constructing the Gemini facilities and infrastructure are direct transfers of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement; and (c) find that there is no financial contribution to Boeing with respect to the Emerald facilities and infrastructure.[2176]**

8.2.8.6.3.2 Whether there is a benefit

8.814. The issue before the Panel is whether the direct transfers of funds made by South Carolina to compensate Boeing for a portion of the costs in constructing the Gemini facilities and

funds without objection by the European Communities as to the correct form of financial contribution. (See Panel Report, *EC and certain member States – Large Civil Aircraft*, paras. 7.1010 and 7.1205-7.1218).

[2171] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 964-966.

[2172] See United States' response to Panel question No. 123, para. 256.

[2173] European Union's response to Panel question No. 110, paras. 176 and 177.

[2174] European Union's first written submission, para. 570.

[2175] The parties disagree on whether the European Union has identified the facilities and infrastructure with sufficient precision and on whether, as argued by the European Union, these facilities and infrastructure are "tailor-made". In light of our conclusion that the European Union has not established that South Carolina actually provide facilities and infrastructure to Boeing, we do not see the need to address these issues.

[2176] While payments were made in connection with the construction of the Emerald facilities and infrastructure, these payments were made to Vought. The European Union does not argue in this proceeding that any financial contributions to Vought have given rise to subsidies to Boeing.

infrastructure, which the Panel has found to be financial contributions within the meaning of Article 1.1(a)(1)(i), confer a benefit within the meaning of Article 1.1(b). The disagreement between the parties mainly focuses on the identification of the correct benchmark for determining benefit, as well as the question of whether Boeing provided remuneration to South Carolina in exchange for the direct transfers of funds that would offset any benefit conferred.

8.815. At the outset, we recall that the European Union considers the proper characterization of the financial contribution associated with the Gemini facilities to be the provision of goods or services within the meaning of Article 1.1(a)(1)(iii).[2177] As such, the European Union's submissions focus to a great extent on determining the benefit conferred by South Carolina's provision of a lease of the Gemini facilities. Consequently, while taking no position on the proper characterization of the alleged financial contribution, the United States mainly responds to the European Union's arguments made in the context of the financial contribution characterized as a provision of goods. However, as explained above, we are of the view that the relevant financial contribution is properly characterized as direct transfers of funds.[2178] The Panel requested the parties to explain their position on benefit if the financial contribution were properly characterized as a direct transfer of funds, and the following sets out the parties' positions relating to such a characterization of the financial contribution.

8.816. The European Union's position is that a benefit was conferred to Boeing since it received bond funds for the Gemini facilities in the amount of USD 270 million for free, while in the market it would have had to pay for them.[2179] Indeed, irrespective of how the financial contribution is characterized, paying nothing constitutes less than adequate remuneration since Boeing would have two options to obtain access to the custom-made Gemini facilities in the market, each carrying with it a financing cost. First, Boeing could have raised funds in the market sufficient to construct the custom-made facilities itself, with a corresponding cost of funds for the investment (either as actual expenditure or as opportunity cost, in case Boeing had the funds available). Second, and alternatively, Boeing could have found another market participant to make the investment in the construction of the custom-made facilities, and leased these from the investor. In that case, the investor would agree to the construction and lease of custom-made facilities for Boeing only if the lease would result in the investor expecting an appropriate return on its investment.[2180]

8.817. The United States' position is that the European Union has failed to provide an adequate benchmark, since the United States is aware of no logic or principle endorsed by the Appellate Body that supports the European Union's position that, even if the financial contribution is properly characterized as a direct transfer of funds, the benefit has the same value as the value of the goods and services that must, by law, be purchased with the funds transferred by the government.[2181] Furthermore, the European Union's reliance on a benchmark comprising of the cost of constructing the facilities plus a finance charge is precisely the methodology found to be inconsistent with Articles 1.1(b) and 14 by the Appellate Body in *EC and certain member States – Large Civil Aircraft*.[2182]

8.818. For the reasons detailed below, we find that the direct transfers of funds made by South Carolina to compensate Boeing for a portion of the costs in constructing the Gemini facilities confer a benefit within the meaning of Article 1.1(b). It is well established in previous panel and Appellate Body reports that a financial contribution confers a benefit and thus constitutes a subsidy within the meaning of Article 1.1 where the financial contribution is provided to the recipient on terms that are more favourable than the terms available to the recipient on the market.[2183] In other words, the "market benchmark" for determining the existence of a subsidy is the terms on which that financial contribution would have been available to the recipient on the market.

[2177] European Union's response to Panel question No. 106, para. 162.
[2178] See para. 8.808 above.
[2179] European Union's response to Panel question No. 105, para. 153.
[2180] European Union's response to Panel question No. 105, paras. 155 and 156.
[2181] United States' comments on European Union's response to Panel question Nos. 105, paras. 162 and 164-168, and 106, para. 170.
[2182] United States' comments on European Union's response to Panel question No. 105, paras. 164-166; response to Panel question No. 105, para. 228.
[2183] See e.g. Appellate Body Reports, *Canada – Aircraft*, paras. 154 and 157; *Japan – DRAMs (Korea)*, para. 225; and *EC and certain member States – Large Civil Aircraft*, para. 705.

8.819. The European Union considers an appropriate benchmark in the present instance to be either what Boeing would have had to pay in financing costs had it built the Gemini facilities itself, or what Boeing would have had to pay in rent to an investor expecting an appropriate return on investment.[2184] Indeed, the European Union argues that regardless of which characterization of the financial contribution is most appropriate, since the bond funds were used to construct facilities and infrastructure, the benefit of such a financial contribution is to be determined with respect to those facilities and infrastructure. We agree with the United States to the extent that the European Union has failed to explain how the benefit determination is the same whether the financial contribution is properly characterized as a direct transfer of funds, or a provision of goods or services.[2185] The European Union's approach to determining benefit confounds the distinction between the two different types of financial contribution embodied in Articles 1.1(a)(1)(i) and 1.1(a)(1)(iii), and the different methodologies involved in determining benefit for different types of financial contributions. We note the Appellate Body's observation that:

> {T}he characterization of a transaction under Article 1.1(a) of the SCM Agreement may have implications for the manner in which the assessment of whether a benefit is conferred is to be conducted. For instance, the context provided by Article 14 of the SCM Agreement presents different methods for calculating the amount of a subsidy in terms of benefit to the recipient depending on the type of financial contribution at issue.[2186]

8.820. We have previously explained that the financial contribution at issue consists of funds provided to Boeing to offset some of Boeing's costs of constructing the Gemini facilities, and that this financial contribution is properly characterized as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement. Whether that financial contribution confers a benefit is necessarily determined by comparing the terms on which Boeing received that financial contribution (i.e. the funds), compared to the terms on which that financial contribution would have been provided to it on the market. In our view, like the infrastructure-related grants analysed by the panel in *EC and certain member States – Large Civil Aircraft*, the financial contribution clearly confers a benefit.[2187]

8.821. A further issue raised by the parties' benefit arguments is what, if anything, Boeing can be considered to have given as remuneration to offset any benefit conferred by the financial contribution. The European Union claims that Boeing received the funds for the Gemini facilities for free. Any residual value from Boeing's unreimbursed investment in real property at the Project Site that may revert to South Carolina at the end of the Amended Ground Lease in 2041 is nominal and fails to provide adequate remuneration, thus meaning that the direct transfers of funds confer a benefit.[2188] The United States argues that the European Union's benefit arguments are based on the factually inaccurate premise that Boeing received the bond funds for the Gemini facilities and infrastructure for free. In fact, Boeing has compensated South Carolina through its investment in unreimbursed real property at the Project Site in the amount of **[***]**, the residual value of which will revert to South Carolina at the end of the Amended Ground Lease, thus obviating any benefit.[2189]

8.822. We consider both parties' positions to be flawed, since an assessment of benefit should be carried out on an *ex ante* basis, and there is no evidence before us that any remuneration for the direct transfers of funds was foreseen in the agreement between South Carolina and Boeing that could be considered to offset any benefit conferred. Both parties' arguments on benefit appear to stray from the text and interpretation of Article 1.1(b). The Appellate Body has indicated that the benefit determination is an *ex ante* analysis, carried out at the time the financial contribution is

[2184] European Union's response to Panel question No. 105, para. 156.

[2185] See United States' comment on European Union's response to Panel question No. 106, para. 170.

[2186] Appellate Body Reports, *Canada – Renewable Energy / Canada – Feed-In Tariff Program*, para. 5.130.

[2187] See Panel Report, *EC and certain member States – Large Civil Aircraft*, paras. 7.1010 and 7.1205-7.1218. See also Panel Report, *US – Upland Cotton*, para. 7.1116.

[2188] European Union's response to Panel question Nos. 106, para. 167, and 111, paras. 182-195. Also see Expert Report of D. E. Fields, MAI, CRE, FRICS, 2 December 2013, (Exhibit EU-1267) (BCI); and Supplemental Expert Report of D. E. Fields, MAI, CRE, FRICS, 24 November 2014, (Exhibit EU-1349) (BCI).

[2189] United States' response to Panel question Nos. 105, para. 224, and 128, para. 265; comments on European Union's response to Panel question Nos. 105, paras. 162-168, and 106, para. 169. Also see United States' response to Panel question No. 129, paras. 266 and 267.

made. To determine whether a benefit has been conferred, a comparison is made between the terms and conditions of the financial contribution when it is granted with the terms and conditions that would have been offered on the market at that time.[2190] In making such an *ex ante* analysis, we see that the United States has failed to show that the Project Gemini Agreement between South Carolina and Boeing foresaw that Boeing would invest **[***]** in real property at the Project Site, the residual value of which would revert to South Carolina, via the Charleston County Aviation Authority, in 2041 at the latest. While it may be that some residual value of Boeing's investment of **[***]** in real property at the Project Site will revert to South Carolina[2191], the United States has failed to show that this residual value was foreseen in the agreement between South Carolina and Boeing, and should therefore be reflected in the *ex ante* analysis of benefit consistent with Article 1.1(b), nor do we see any evidence on the record to this effect.[2192] As such, we do not consider that Boeing can be considered to have compensated South Carolina for the direct transfers of funds, and instead find that these transfers are correctly described as a grant to Boeing.

8.823. **In light of the above, we find that the direct transfers of funds made by South Carolina to compensate Boeing for a portion of the costs in constructing the Gemini facilities confer a benefit within the meaning of Article 1.1(b).**

8.2.8.6.3.3 Whether the subsidy is specific within the meaning of Article 2.1 of the SCM Agreement

8.824. The first question raised by the parties' arguments is whether the subsidy provided through the direct transfers of funds made by South Carolina to compensate Boeing for a portion of the costs in constructing the Gemini facilities is specific within the meaning of Article 2.1(a) of the SCM Agreement, i.e. whether "the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to the subsidy to certain enterprises".

8.825. It is clear from the text of Article 2.1(a) that the "the express limitation can be found either in the legislation by which the granting authority operates, or in other statements or means by which the granting authority expresses its will".[2193] The European Union does not argue that such an explicit limitation exists as a result of "other statements or means by which the granting authority expresses its will". The question before us in this case is whether access to the subsidy is subject to an explicit limitation by virtue of "the legislation pursuant to which the granting authority operates".

8.826. As to the meaning of "explicitly limits" in Article 2.1(a), the Appellate Body has explained that "a subsidy is specific under Article 2.1(a) if the limitation on access to the subsidy to certain enterprises is express, unambiguous, or clear from the content of the relevant instrument, and not merely 'implied' or 'suggested"'.[2194] Whether "access to the subsidy" is explicitly limited must focus on whether the granting authority, or the legislation pursuant to which the granting authority operates, limits the *eligibility* to receive the subsidy to certain enterprises.[2195] With regard to the term "certain enterprises", the Appellate Body has observed that "the relevant enterprises must be

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[2190] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 706.

[2191] The parties disagree on the calculation of such residual value. (Parties' response and comments on Panel question Nos. 123-130).

[2192] The fact that Boeing's investment of **[***]** in real property at the Project Site contributed to its overall investment requirement of USD 750 million, set out in the Project Gemini Agreement (as confirmed by the United States in response to a question from the Panel – United States' response to Panel question No. 129, paras. 266 and 267), is in our view insufficient to consider any residual value from Boeing's investment of **[***]** as remuneration in our benefit determination. Indeed, the general requirement to invest USD 750 million as part of the Project Gemini package of incentives says nothing about an obligation to invest precisely **[***]** in real property at the Project Site.

[2193] Panel Report, *US – Large Civil Aircraft (2nd complaint)* para. 7.190.

[2194] Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 372. See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.190 and 7.192.

[2195] See, in particular, Appellate Body Reports, *US – Anti-Dumping and Countervailing Duties (China)*, para. 368 ("Article 2.1(a) thus focuses not on whether a subsidy has been granted to certain enterprises, but on whether *access* to that subsidy has been explicitly limited. This suggests that the focus of the inquiry is on whether certain enterprises are eligible for the subsidy, not on whether they in fact receive it"); and *US – Large Civil Aircraft (2nd complaint)*, para. 753 ("{t}his inquiry focuses not only on whether the subsidy was provided to the particular recipients identified in the complaint, but focuses also on all enterprises or industries eligible to receive that same subsidy").

'known and particularized', but not necessarily 'explicitly identified', and that they may have 'some mutual or common relation or purpose', or 'degree of similarity'".[2196]

8.827. Since "eligibility is key to a consideration of *de jure* specificity under subparagraphs (a) and (b) of Article 2.1 of the SCM Agreement"[2197], we consider that the term "legislation pursuant to which the granting authority operates" in Article 2.1(a) must be understood to mean the legislation that defines the criteria of eligibility for a subsidy.[2198] South Carolina provided the direct transfers of funds to Boeing to compensate for a portion of the costs in constructing the Gemini facilities pursuant to provisions of South Carolina Code sections 11-41-40 and South Carolina Code section 55-11-520 relating to the issuance of economic development bonds and air hub bonds, respectively. Accordingly, these provisions constitute "the legislation pursuant to which the granting authority operates" for purposes of the analysis under Article 2.1(a).[2199]

8.828. In this regard, we see no merit in the argument of the European Union that the individual resolutions adopted by South Carolina authorizing the issuance of the economic development bonds and air hub bonds establish an explicit limitation on access to the subsidy within the meaning of Article 2.1(a). The bond resolutions that the European Union relies on are clearly instances of application of a broader legislative framework in place for the issuance of economic development bonds and air hub bonds. The fact that, as alleged by the European Union, "the resolutions authorising issuance of the bonds explicitly restricted the use of the proceeds to the construction of specified facilities and infrastructure for Boeing's use"[2200] simply reflects the application of the relevant statutory provisions to this individual case and does not demonstrate an "explicit limitation" of access to the subsidy to certain enterprises.[2201]

8.829. At the same time, however, we are also not persuaded that the inquiry into whether the measure is specific within the meaning of Article 2.1(a) should be conducted at the level of what the United States refers to as South Carolina's "system for issuing state bonds to provide facilities and infrastructure".[2202] In our view, the United States has not defined that "system" with sufficient precision. In its first written submission, the United States asserts that the relevant legislative framework encompasses not only economic development bonds and air hub bonds but also industrial revenue bonds, since the common purpose of all of these bonds is to enable South Carolina to fund facilities and infrastructure for economic development projects to promote job creation and/or retention in South Carolina.[2203] In its second written submission, the United States also refers to "state highway bonds for road construction" and "state institution bonds to fund construction of facilities for state four-year colleges and universities".[2204] It is thus unclear whether the "system for issuing state bonds to provide facilities and infrastructure" should be understood to comprise only the three types bonds discussed in the United States' first written submission i.e. economic development bonds, industrial revenue bonds and air hub bonds or whether the two type of bonds mentioned in the second written submission of the United States also form part of that system.

[2196] Appellate Body Report, *US – Carbon Steel (India)*, para. 4.365. The Appellate Body has also stated that "{a}ny determination of whether a number of enterprises or industries constitute 'certain enterprises' can only be made on a case-by-case basis". (Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 373 (quoting Panel Report, *US – Upland Cotton*, para. 7.1142)). See also Appellate Body Report, *US – Washing Machines*, paras. 5.220.5.221 (explaining that the notion of "certain enterprises" in Article 2.2 of the SCM Agreement does not depend on the legal personality of the subsidy recipients).

[2197] Appellate Body Report, *US – Carbon Steel (India)*, para. 4.384.

[2198] This interpretation is also supported by a reading of Article 2.1(a) in the context of Article 2.1(b). See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 750.

[2199] The Appellate Body Report in the original proceeding emphasizes the need for an inquiry concerning specificity under Article 2.1(a) properly to take into account the broader legislative framework pursuant to which the subsidy has been provided. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 750, 753, and 841). Also see Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.565.

[2200] European Union's first written submission, para. 583.

[2201] We also consider that the fact that "the provision of these bond-funded facilities and infrastructure was among the commitments South Carolina made to Boeing as part of the Project Gemini Agreement" is an insufficient basis to find that access to the subsidy is explicitly limited to certain enterprises. (European Union's first written submission, para. 583).

[2202] United States' first written submission, paras. 625-632.

[2203] United States' first written submission, para. 619.

[2204] United States' second written submission, para. 526.

8.830. In light of these considerations, and since the subsidy at issue here concerns proceeds from the issuance of economic development bonds and air hub bonds for Project Gemini, we consider that whether the subsidy is specific within the meaning of Article 2.1(a) should be determined on the basis of the text of the relevant legislative provisions relating to the issuance of economic development bonds and air hub bonds.

8.831. In this context, the European Union argues that access to the subsidy is limited to the aviation and aerospace industry, since air hub bond proceeds may only be issued for air carrier hub terminal facilities, and economic development bond proceeds may not be used for buildings except when used in connection with air carrier hub terminal facilities or located on government-owned land.[2205] The United States counters that the provision of bond-funded facilities and infrastructure is not specific within the meaning of Article 2.1(a), since the system of legislation for issuing state bonds to provide facilities is not explicitly limited to certain enterprises.[2206] There is no provision in South Carolina law limiting access for funds raised through economic development bonds and air hub bonds to certain enterprises. Moreover, none of the individual pieces of legislation pursuant to which the bonds are issued limit access to certain enterprises.[2207]

8.832. As noted above[2208], section 11-41-40 of the South Carolina Code provides that economic development bonds can be used to fund financing for infrastructure. In this context, "economic development project" is defined as "a project in this State as defined in Section 12-44-30(16) in which a total of at least four hundred million dollars is invested in the project by the sponsor and at least four hundred new jobs are created at the project by the sponsor".[2209] With respect to economic development bonds, the European Union makes two arguments in support of its position that the relevant statutory provisions explicitly limit access to the subsidy to "certain enterprises: that is, Boeing, or, at a minimum, the aviation and aerospace industry".[2210]

8.833. First, the European Union argues that an amendment made in 2009 to increase the total amount of general obligation bonds[2211] "was enacted for Boeing as part of H3130".[2212] While we agree that this amendment was made in relation to commitments made by South Carolina *vis-à-vis* Boeing in the context of Project Gemini, we see nothing in the text of this amendment[2213] to suggest that this additional amount of economic development bonds may only be used in respect of economic development projects involving certain enterprises.

8.834. Second, the European Union asserts that "economic development bond proceeds may not be used for buildings (as they were in this case), *except* in the context of projects associated with an air hub carrier terminal facility or located on government-owned land".[2214] The European Union does not explain how this warrants the conclusion that "the statutory provisions pursuant to which the economic development bonds … were issued contain explicit limitations to certain enterprises".[2215] Moreover, the European Union only considers the eligibility criteria for economic development bond proceeds used for buildings. This is unwarranted, *inter alia* because the economic development bond proceeds transferred to Boeing were used **[*****[2216]**]**.[2217]

8.835. In sum, we consider that, with respect to the issuance of economic development bonds to finance infrastructure, the European Union has not offered sufficient reasoning to establish that the

[2205] European Union's first written submission, para. 584; second written submission, para. 639.
[2206] United States' first written submission, paras. 625-628; second written submission, paras. 524-528.
[2207] United States' first written submission, para. 626; also see second written submission, paras. 526 and 527.
[2208] See fn 1943 above.
[2209] State General Obligation Economic development Bond Act, *S.C. Code*, Title 11, chapter 41, (Exhibit EU-477), section 11-41-30.
[2210] European Union's first written submission, para. 584.
[2211] See para. 8.685 above.
[2212] European Union's first written submission, para. 584.
[2213] State General Obligation Economic development Bond Act, *S.C. Code*, Title 11, chapter 41, (Exhibit EU-477), section 11-41-50(B).
[2214] European Union's first written submission, para. 584. (emphasis original)
[2215] European Union's second written submission, para. 639.
[2216] See para. 8.767 above.
[2217] European Union's first written submission, para. 584.

measure at issue is explicitly limited to certain enterprises within the meaning of Article 2.1(a). Having made such a finding, we consider it unnecessary to pronounce on Article 2.1(b).[2218]

8.836. With respect to air hub bonds, section 55-11-520 of the South Carolina Code provides that this type of bond can be used to acquire land, construct, enlarge, improve, extend, renovate, and equip suitable air carrier hub terminal facilities, and purchase equipment, ground support equipment, machinery, special tools, maintenance, boarding facilities, and any real or personal property for operation of air carrier hub terminal facilities.[2219] The parties disagree as to whether the fact that proceeds from air hub bonds may be issued only for "air carrier hub terminal facilities", defined as airport terminal facilities from which certain categories of air carriers operate makes the measure specific within the meaning of Article 2.1(a). Since we find that the air hub bonds are specific within the meaning of Article 2.1(c), we do not consider it necessary to address that question.

8.837. A second issue raised by the parties' arguments is whether the direct transfers of funds made by South Carolina to compensate Boeing for a portion of the costs in constructing the Gemini facilities are specific within the meaning of Article 2.1(c). The European Union argues that the transfer of bond proceeds is specific within the meaning of Article 2.1(c) on the grounds that this type of subsidy has only been used by a limited number of enterprises, and Boeing and its suppliers have been the predominant users.[2220] The United States counters that the provision of bond-funded facilities and infrastructure is not *de facto* specific, since the South Carolina bond scheme has funded facilities and infrastructure that are used by a variety of companies, only two of which are in the aerospace industry.[2221]

8.838. The evidence before the Panel indicates that since the adoption of South Carolina legislation authorising the issuance of economic development bonds in 2002, South Carolina has issued economic development bonds for BMW (in 2003 in the amount of up to USD 105 million)[2222], the Project Emerald companies (in 2004 in the amount of up to USD 160 million)[2223], and Boeing. In addition, economic development bonds were issued for certain public entities in 2005, namely the City of Greenville, the City of Myrtle Beach, and the Trident Technical College, in the amount of up to USD 7 million each.[2224] Since the adoption of legislation authorising the issuance of air hub bonds in 1989[2225], air hub bonds have only been issued to Boeing, a fact which the United States does not contest.[2226]

8.839. We are of the view that the European Union has failed to establish that the transfer of funds to Boeing through economic development bond proceeds is specific within the meaning of Article 2.1(c) because it is used by a limited number of certain enterprises, or is predominantly used by Boeing and its suppliers. The European Union provides no reasoning as to why, in light of the level of diversification in the South Carolina economy and the duration of the economic development bond scheme, the grant of economic development bond proceeds to BMW, the Project Emerald companies and Boeing amounts to use by a limited number of enterprises.

[2218] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 876 ("{h}aving found that the IRB subsidies are not specific within the meaning of Article 2.1(a), analysis by the Panel under Article 2.1(b) was not necessary").

[2219] See fn 1951 above.

[2220] European Union's first written submission, para. 585; second written submission, para. 639.

[2221] United States' first written submission, para. 631; see also second written submission, paras. 529-532.

[2222] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 67, para. 150. Also see South Carolina State Budget and Control Board, Freedom of Information Act Response Letter, 23 July 2012, (Exhibit EU-490), p. 1, and South Carolina State Budget and Control Board, Freedom of Information Act Response Supplemental Letter, 31 July 2012, (Exhibit EU-491).

[2223] See para. 8.768 above. Also see South Carolina State Budget and Control Board, Freedom of Information Act Response Letter, 23 July 2012, (Exhibit EU-490), p. 1.

[2224] South Carolina State Budget and Control Board, Freedom of Information Act Response Letter, 23 July 2012, (Exhibit EU-490), p. 1.

[2225] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 67, para. 150.

[2226] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 67, para. 150.

8.840. With respect to predominant use, the Panel noted in the original proceeding that predominant use "requires consideration of whether the subsidy programme in issue is mainly or most frequently used by 'certain enterprises'", taking into account the extent of diversification of economic activities within the jurisdiction of the granting authority, as well as the length of time during which the subsidy programme has been in operation.[2227] The European Union argues that Boeing and its suppliers have been the predominant users of the subsidy, benefitting from USD 390 million out of a total of USD 495 million in economic development bonds and air hub bonds, or 79% of the bonds by value.[2228] We do not consider this information to show that the economic development bond scheme has mainly or most frequently been used by certain enterprises. While this information could be relevant to an argument that a disproportionately large amount of subsidy has been granted to certain enterprises, this is not an argument that the European Union makes.[2229] To find otherwise would be to confound predominant use by certain enterprises (the second of the "other factors" listed in Article 2.1(c)), and the granting of disproportionately large amounts of subsidy to certain enterprises (the third of the "other factors" listed in Article 2.1(c)).[2230] The European Union makes no other arguments why, in light of the diversification of the South Carolina economy and the duration of the economic development bond scheme, economic development bond proceeds have been mainly or most frequently used by certain enterprises.

8.841. Further to the above, with respect to economic development bond proceeds provided to public entities, the European Union states that "{b}ecause specificity is assessed with respect to enterprises and industries, the European Union does not include economic development bonds issued for public entities, such as cities or public colleges".[2231] Notwithstanding this, precisely the fact that economic development bonds can be and have been issued to public entities, namely two cities and a public college, in addition to private entities, suggests that the scheme is not limited to "certain enterprises" within the meaning of Article 2.1(c).

8.842. However, we *do* consider that the European Union has established that the grant of air hub bond proceeds to Boeing is specific within the meaning of Article 2.1(c), in the sense that the use of the subsidy programme is limited to certain enterprises. In this regard, we note that it is undisputed that air hub bonds have only been issued to Boeing during the almost three-decade long existence of the scheme. The fact that air hub bonds have only been issued for Boeing is unsurprising since the evidence before the Panel suggests that only Boeing meets the requirements to benefit from air hub bond proceeds, namely to be the operator of an "air carrier hub terminal facility" as defined in the South Carolina Code. While the Project Emerald Agreement originally contemplated the issuance of both economic development bonds and air hub bonds, it appears that Project Emerald was only eligible for economic development bonds, and only that type of bond was issued.[2232] The definition of "air carrier hub terminal facility" was amended in

[2227] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.746 and 7.747.

[2228] European Union's first written submission, para. 585 and fn 1377.

[2229] The European Union does not argue that a disproportionate amount of subsidy has been granted to certain enterprises, nor does it address the question of whether there is a "disparity between the expected distribution of that subsidy, as determined by the conditions of eligibility, and its actual distribution", necessary for the demonstration of disproportionality of grants. See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 879; also see para. 8.900 below concerning the FILOT agreements.

[2230] We note that in the original proceeding, the Panel conducted an analysis of the City of Wichita industrial revenue bonds under several of the factors listed in Article 2.1(c), but based its finding of specificity on the granting of disproportionately large amounts of subsidy to certain enterprises. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.743-7.779). Also see Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 879 and 886-889, upholding for different reasons the Panel's finding of specificity.

[2231] European Union's second written submission, fn 1064. Also see first written submission, fn 1377; and United States' second written submission, paras. 529 and 530.

[2232] Compare section 2.1 of the Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560), and section 2.1 of the Final Project Emerald Incentive Agreement, (Exhibit EU-550). Nonetheless, in the Project Emerald Agreement the "parties acknowledge that {South Carolina Department of Commerce} will request a modification to existing legislation to facilitate Project Emerald's qualification for the issuance of Air Hub Bonds". Initial Project Emerald Site Development and Incentive Agreement, (Exhibit EU-560), section 2.4. A Bond Counsel Opinion in the Project Emerald Agreement also noted the following: "{w}e have been informed that the Project Emerald Consortium will not independently satisfy the requirement that the Project account for at least 'twenty common carrier departing flights a week on an annual basis for the purposes of transporting cargo and air freight'", within the meaning of section 55-11-500(1) of the South Carolina Code. (Initial Project Emerald Site Development and Incentive Agreement), (Exhibit EU-560), exhibit D.

2005 to encompass section 55-11-500(a)(3)[2233] in addition to section 55-11-500(a)(1), and air hub bonds were issued for the first time to Boeing, which fulfilled the requirements of section 55-11-500(a)(3).[2234]

8.843. **As such, we find that the European Union has established that subsidy provided by South Carolina through air hub bond proceeds to compensate Boeing for a portion of the costs in constructing the Gemini facilities and infrastructure is specific within the meaning of Article 2.1(c). However, the European Union has failed to establish that the subsidy provided by South Carolina through economic development bond proceeds is specific within the meaning of Article 2.1**.

8.844. Finally, we note that the European Union also argues that the subsidies provided to Boeing through air hub bond proceeds and economic development bond proceeds are specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.8.6.4 The amount of the subsidy

8.845. The European Union argues that, where the financial contribution in question is South Carolina's provision of funding for the construction of Boeing's 787 facilities and infrastructure through the transfer of bond proceeds to Boeing, such that the subsidy is characterized as a direct transfer of funds, the amount of the *financial contribution* is the total value of the funds (i.e. the proceeds of both the economic development bonds and the air hub bonds), which it alleges is USD 270 million between 2010 and 2011.[2235] However, the European Union considers that the value of the *benefit* is USD 400.64 million between 2011 and 2035, or USD 67.53 million between 2013 and 2015.[2236] The European Union's estimate of the amount of the subsidy (i.e. USD 400.64 million between 2011 and 2035[2237], or USD 67.53 million between 2013 and 2015[2238]) is based on its estimate of the value of the facilities and infrastructure that the European Union alleges were provided to Boeing[2239], plus the imputed financing costs for Boeing to either raise funds in the market to construct the facilities and infrastructure itself, or find another market participant to construct and then lease the facilities and infrastructure.[2240] The European Union argues that, as Boeing paid nothing for the facilities and infrastructure, the entire amount represents the benefit conferred to Boeing.[2241]

8.846. The United States does not provide an estimate of the amount of the subsidy, arguing instead that the financial contribution conferred no benefit to Boeing on account of adequate remuneration provided to South Carolina through real property investment at the Project Site, and

[2233] H3234, signed into law on 5 April 2005. S.C. Code, section 55-11-500(a)(3) provides: "{a}n 'air carrier hub terminal facility' is an airport terminal facility from which an air carrier … operates either: … (3) irrespective of the number of flights, two or more specially equipped planes that are : (i) used for the transportation of specialized cargo; and (ii) subject to ad valorem property taxation or a fee in lieu of taxes in this State".

[2234] Gemini air hub bond resolution, (Exhibit EU-483), p. 48, section 1.

[2235] European Union's first written submission, para. 577.

[2236] European Union's first written submission, para. 582; second written submission, paras. 636-638; response to Panel question Nos. 105, paras. 150-161, and 106, paras. 162-168; comments on United States' response to Panel question No. 105, paras. 319-329; and South Carolina's Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 1.

[2237] European Union's first written submission, para. 581.

[2238] South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 1.

[2239] The European Union estimates the value of the facilities and infrastructure at USD 270 million from 2011 to 2035.

[2240] European Union's response to Panel question Nos. 106, para. 166, and 105, paras. 155 and 156. However, the European Union rejects as a mischaracterization the United States' assertion that its valuation addresses the cost to Boeing to raise an amount of money equal to what South Carolina raised through state bonds. (European Union's second written submission, para. 636).

[2241] European Union's first written submission, para. 581.

because the European Union has failed to provide an appropriate benchmark to determine and estimate any benefit conferred.[2242]

8.847. The European Union's estimate of the amount of the subsidy, based on what it would cost Boeing to raise funds to construct the facilities, or find another market participant to construct and lease the facilities, suffers from a fundamental factual and legal flaw regarding the nature of the subsidy. In Section 8.2.8.6.3.1, we reject as factually unsupported the European Union's argument that South Carolina provides the Gemini facilities and infrastructure to Boeing. We also reject as a legal matter the European Union's argument that, in relation to the Gemini facilities and infrastructure, there was a financial contribution to Boeing in the form of a provision of goods or services other than general infrastructure, since we consider that Article 1.1(a)(1) contemplates a characterization of a measure as a financial contribution on the basis of the manner in which that measure transfers value to a recipient. Rather, we find that the payments made by South Carolina pursuant to commitments in the Project Gemini Agreement to compensate Boeing for a portion of the costs in constructing the Gemini facilities and infrastructure are direct transfers of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement.

8.848. In Section 8.2.8.6.3.2, we find that these financial contributions, which are direct transfers of funds (and essentially infrastructure-related grants), confer a benefit. In so doing, we explain that our benefit determination is not affected by any alleged remuneration or "compensation" provided by Boeing in relation to the grants.

8.849. Moreover, in Section 8.2.8.6.3.3, we find that only the direct transfers of funds made by South Carolina through air hub bonds are specific. The total amount of these bond proceeds is USD 50 million. This being so, and bearing in mind that there is no requirement in a dispute under Part III of the SCM Agreement for panels to quantify precisely the amount of a subsidy benefiting a product at issue in every case[2243], **it suffices for present purposes to consider the amount of the subsidy to be equal to the amount of the air hub bond proceeds, namely USD 50 million.[2244]**

8.2.8.6.5 Conclusion

8.850. In light of our findings above with respect to the Gemini and Emerald facilities and infrastructure, we conclude that:

a. The European Union has failed to establish that financial contributions exist within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement because South Carolina provides Gemini and Emerald facilities and infrastructure to Boeing, and thus has also not established that specific subsidies exist within the meaning of Articles 1 and 2 of the SCM Agreement in this regard.

b. The European Union has established that the payments made by South Carolina pursuant to commitments in the Project Gemini Agreement to compensate Boeing for a portion of the costs incurred by Boeing in respect of the construction of the Gemini facilities and infrastructure through air hub bond proceeds involve a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement, in the amount of USD 50 million.

8.2.8.7 Whether property tax reductions through the Boeing and Project Emerald FILOT Agreements are specific subsidies to Boeing

8.2.8.7.1 Introduction

8.851. In paragraph 24 of its panel request, the European Union identifies as one of the Project Gemini-related subsidies presently benefiting Boeing:

[2242] United States' first written submission, paras. 583 and 584; second written submission, paras. 518 and 519; response to Panel question No. 105, paras. 218-229; and comments on European Union's response to Panel question Nos. 105, paras. 162-168, and 106, paras. 169-171.

[2243] Appellate Body Report, *US – Upland Cotton*, paras. 462-467; and Panel Report, *Mexico – Olive Oil*, para. 7.152.

[2244] Gemini Air Hub Bond Resolution, (Exhibit EU-483).

> Property tax reductions under a fee-in-lieu-of taxes agreement between Charleston County and Boeing, dated 1 December 2009, as authorized by Title 12, Chapter 44 of the S.C. code, including the provision of special source credits as provided for in such agreement, and authorized by S.C. Code § 4-1-175.

8.852. In paragraph 25 of its panel request, the European Union identifies as one of the Project Emerald-related subsidies presently benefiting Boeing:

> Property tax reductions under a fee-in-lieu-of taxes agreement between Charleston County and Vought Aircraft industries, Global Aeronautica, and Boeing, dated 19 December 2006, and assigned to Boeing on or about 10 February 2010, as authorized by Title 12, Chapter 44 of the S.C. Code, and provided for in the Project Emerald Confidential Site Development Agreement, including the provision of infrastructure credits as provided for in such agreement, and authorized by S.C. Code § 12-44-70.

8.853. The European Union argues that the above-referenced FILOT agreements in respect of Project Gemini and Project Emerald, through which Boeing pays negotiated fees in place of the *ad valorem* property taxes that it would otherwise owe in respect of the 787 final assembly and delivery facility, and the 787 fuselage fabrication and integration complex, respectively, are specific subsidies to Boeing.

8.854. Real property, personal property used in business, and certain other personal property (e.g. aeroplanes) are subject to property taxes in South Carolina. Such property taxes are calculated by multiplying the periodically appraised fair market value of property by an assessment ratio set forth in the South Carolina Constitution according to the type of property. The resulting assessed value is then multiplied by a millage rate, i.e. a varying tax rate applied by each local taxing jurisdiction (e.g. county)[2245], to obtain the amount of tax due.[2246]

8.855. Assessment ratios are established in the South Carolina Constitution and differ according to property classification. All manufacturing property, whether real or personal, is assessed at the ratio of 10.5%[2247], a higher rate than in neighbouring states.[2248] The South Carolina legislature has, through legislation enacted between 1988 and 1997, granted counties the authority to exempt certain projects from property taxes in exchange for entering into agreements that provide for the annual payment of fees with respect to property which would otherwise be subject to property taxes.[2249] These agreements are known as FILOT agreements. In general terms, FILOT agreements: (a) freeze the value of real property; and (b) provide for a reduced assessment ratio. They may also set a fixed millage rate.[2250] FILOT agreements may be supplemented by Special Source Revenue Credits (revenue credits), which rebate a portion of the fee due under the

[2245] A "mill" is a unit of monetary value equal to one thousandth of a dollar, or USD 0.001.

[2246] See South Carolina Department of Revenue, South Carolina Tax Incentives for Economic Development 20, 2013 edn, (South Carolina Department of Revenue, 2012) (South Carolina Tax Incentives), (Exhibit EU-494), pp. 141 and 142.

[2247] County Equalization and Reassessment, *S.C. Code*, Title 12, chapter 43, (Exhibit EU-525), section 12-43-220(a)(1). By way of context, most commercial personal property is also assessed at 10.5%, whereas commercial real property is assessed at 6%. (See South Carolina Tax Incentives, (Exhibit EU-494), pp. 142-148).

[2248] See Alliance for South Carolina's Future, *The Economic Impact of Boeing in South Carolina*, (May 2010), (Exhibit EU-489), p. 3; and Lincoln Institute of Land Policy, *50-State Property Comparison Study*, (April 2012), (Exhibit USA-331), p. 20.

[2249] The legislation in question is the "Big Fee" FILOT statute, enacted in 1988, followed by the "Little Fee" and "Simplified Fee" statutes. See Industrial Development Projects, *S.C. Code*, Title 4, chapter 29, (Exhibit USA-243), section 4-29-67; Fee in Lieu of Property Taxes, *S.C. Code*, Title 4, chapter 12, (Exhibit USA-330), section 4-12-30; and Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit EU-539), section 12-44-44. The legislative findings for the "Simplified Fee" statute, the full title of which is the "Fee in Lieu of Tax Simplification Act", enacted in 1997, explain that the legislation simplifies the method for obtaining the fee in lieu of tax benefits and makes this incentive more attractive by eliminating the requirement in the existing FILOT legislation for the issuance of industrial revenue bonds or the transfer of title to property to a county. See the Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit EU-539), section 12-44-20.

[2250] Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit EU-539), section 12-44-50(A)(1).

agreement and thereby further reduce the assessment ratio. Counties evaluate projects, negotiate terms, approve agreements, and collect fee payments.[2251]

8.856. South Carolina law authorizing FILOT agreements provides for three main types of FILOT agreements which differ, *inter alia*, with respect to the minimum required investments and the title to project property.[2252] Notwithstanding these differences, all three types of agreements provide for a reduced assessment ratio of 6%. Furthermore, the South Carolina law regarding FILOT agreements also contains special provisions for very large investments, known as "Super Fee" agreements or "Enhanced Investment Fee" agreements, depending on the particular FILOT statute under which the FILOT agreement is authorized. Under both super fee agreements and enhanced investment fee agreements, a company investing USD 150 million and creating 125 new jobs, or investing USD 400 million regardless of job creation, is subject to a reduced assessment ratio of 4%.[2253] Where a party to a FILOT agreement fails to meet the requirements to qualify for the lower assessment ratios, the higher constitutional assessment ratio will be applied retroactively to the property covered by the agreement.[2254]

8.857. On 1 December 2010, Charleston County entered into an Enhanced Investment Fee Agreement with Boeing (the Boeing FILOT Agreement).[2255] The property covered by the Boeing FILOT Agreement consists of Boeing's 787 final assembly and delivery facility (i.e. the Project Gemini property), as well as Boeing's South Carolina Interior Responsibility Center.[2256] The tax treatment applicable to this project property for a minimum of thirty years[2257] is based on: (a) an assessment ratio of 4%; (b) a fixed millage rate of 269.8; and (c) a fair market value estimate determined by the South Carolina Department of Revenue according to state legislation.[2258] In addition, the Boeing FILOT Agreement grants a rebate equal to half of each of Boeing's first 15 annual payments in the form of revenue credits.[2259] The Boeing FILOT Agreement contains a provision regarding the allocation of property between the Project Emerald FILOT Agreement and the Boeing FILOT Agreement.[2260] The Boeing FILOT Agreement also provides that the Project Emerald FILOT Agreement "shall remain in full force and effect, and shall be controlling, with respect to the Vought Project".[2261]

8.858. On 19 December 2006, Charleston County entered into an Enhanced Investment Fee Agreement with Vought, Global Aeronautica and Boeing (the Project Emerald FILOT Agreement).[2262] The property covered by the Project Emerald FILOT Agreement consists of property used for the purpose of manufacturing and assembling aircraft components, including portions of the fuselage for the Boeing 787 aircraft (i.e. the Project Emerald property).[2263] The tax

[2251] With respect to Big Fee agreements, see e.g. South Carolina Tax Incentives, (Exhibit EU-494), pp. 184 and 185. See also United States' second written submission, para. 534.

[2252] By way of example, Little Fee and Simplified Fee agreements generally require a minimum investment of USD 2.5 million, whereas Big Fee agreements generally require a minimum investment of USD 45 million. Furthermore, under Little Fee and Big Fee agreements, title to the project property must be held by the county, whereas under Simplified Fee agreements, title is usually held by the project sponsor. (See South Carolina Tax Incentives, (Exhibit EU-494), p. 204, and generally pp. 175-205).

[2253] South Carolina Tax Incentives, (Exhibit EU-494), p. 204, and generally pp. 175-205.

[2254] Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit USA-245), section 12-44-140(B).

[2255] Boeing FILOT Agreement, (Exhibit EU-470), recital 1 of which refers to the Simplified Fee statute, *S.C. Code*, Title 12 chapter 44. See also European Union's first written submission, fn 1309.

[2256] See United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 78, para. 170; and South Carolina Department of Revenue, Boeing PT-300S Forms, 2012, (Exhibit US-13-318) (BCI). See also Boeing FILOT Agreement, (Exhibit EU-470), section 1.3, p. 6 (definitions of "Project" and "Site"), and exhibit A.

[2257] Boeing FILOT Agreement, (Exhibit EU-470), section 5.6.

[2258] Boeing FILOT Agreement, (Exhibit EU-470), section 5.1(a).

[2259] Boeing FILOT Agreement, (Exhibit EU-470), section 5.2(a).

[2260] Boeing FILOT Agreement, (Exhibit EU-470), p. 10.

[2261] Boeing FILOT Agreement, (Exhibit EU-470), section 11.11.

[2262] Fee Agreement between Charleston County, Vought Aircraft Industries, Inc., Global Aeronautica, LLC, and the Boeing Company (19 December 2006) (Project Emerald FILOT Agreement), (Exhibit EU-556), recital 1 (referring to Simplified Fee statute, *S.C. Code*, Title 12, chapter 44).

[2263] See Project Emerald FILOT Agreement, (Exhibit EU-556), recital 4, p. 1 (definition of the "Site"), section 1.01, p. 5 (definition of the "Project"), and section 2.2(b). See also United States' response to Panel question No. 143, para. 294; and State of South Carolina, Department of Revenue, Emerald Property Return PT-300, schedule S-1 (2013), (Exhibit USA-529) (BCI).

treatment applicable to this project property for a minimum of thirty years[2264] is based on: (a) the value of the real property established during the first year of the agreement; (b) an assessment ratio of 4%; and (c) a fixed millage rate of 273.[2265] In addition, the Project Emerald FILOT Agreement grants a rebate equal to 25% of the fees paid for ten years in the form of revenue credits.[2266] In 2010, following approval by Charleston County on 11 August 2009[2267], Vought assigned its rights under the Project Emerald FILOT Agreement to Boeing.[2268]

8.2.8.7.2 Main arguments of the parties

8.859. The European Union argues that the reductions of Boeing's property tax liability for property including the 787 final assembly and delivery facility, through the Boeing FILOT Agreement, and for the 787 fuselage fabrication and integration complex through the Project Emerald FILOT Agreement, constitute specific subsidies within the meaning of Articles 1 and 2.

8.860. The European Union argues that both the Boeing FILOT Agreement and the Project Emerald FILOT Agreement involve the foregoing of revenue otherwise due and thus a financial contribution within the meaning of Article 1.1(a)(1)(ii), or alternatively a direct transfer of funds within the meaning of Article 1.1(a)(1)(i). The European Union is of the view that its position finds support in the three-step analysis set out by the Appellate Body in the original proceeding for determining the existence of revenue foregone, and structures its arguments according to that analysis. The European Union identifies the benchmark tax treatment of comparable taxable activity of comparable taxpayers as the standard property tax treatment of *other manufacturers in Charleston County*. The European Union considers a benchmark based on *other manufacturers* to be appropriate, since property tax is contingent on the nature of the property, and manufacturing property is treated as a comprehensive category.[2269] Furthermore, the European Union considers a benchmark based on other manufacturers *in Charleston County* is appropriate, since Charleston County is the granting authority, and property taxes in South Carolina are imposed by local governments, not the state government. The property tax treatment of such taxpayers (i.e. other manufacturers in Charleston County) is based on: (a) the valuation by appraisal of a manufacturer's real property every five years or upon a triggering event; (b) the assessment ratio of 10.5%; and (c) fluctuating millage rates.[2270] Based on a comparison with other manufacturers, the Boeing FILOT Agreement and the Project Emerald FILOT Agreement involve the foregoing of revenue otherwise due because, in the absence of the agreements, the manufacturing property covered by the agreements would be subject to higher taxation under the general rule governing the taxation of manufacturing property.[2271] In the alternative, the European Union argues that the revenue credits, involving the transfer of funds by check or wire to Boeing as reimbursements for expenditures on Special Source Improvements, constitute a direct transfer of funds.[2272]

8.861. The European Union contends that both the Boeing FILOT Agreement and the Project Emerald FILOT Agreement confer benefits to Boeing within the meaning of Article 1.1(b). The foregoing of taxes that would otherwise be due "clearly confers a benefit".[2273]

8.862. The European Union argues that the Boeing FILOT Agreement and the Project Emerald FILOT Agreement are specific within the meaning of Articles 2.1(a) and 2.1(c). With respect to *de*

[2264] Project Emerald FILOT Agreement, (Exhibit EU-556), section 1.01, p. 5 (definition of "Termination Date").
[2265] Project Emerald FILOT Agreement, (Exhibit EU-556), section 4.1.
[2266] Project Emerald FILOT Agreement, (Exhibit EU-556), section 4.2.
[2267] Assignment and Assumption of Fee Agreement between Vought Aircraft Industries, Inc. and Boeing Commercial Airplanes Charleston South Carolina, Inc. (10 February 2010), (Exhibit EU-557), second recital, referring to a Charleston County resolution adopted on 11 August 2009.
[2268] Assignment and Assumption of Fee Agreement between Vought Aircraft Industries, Inc. and Boeing Commercial Airplanes Charleston South Carolina, Inc. (10 February 2010), (Exhibit EU-557).
[2269] European Union's first written submission, para. 682.
[2270] European Union's first written submission, para. 682.
[2271] European Union's first written submission, paras. 683 and 726.
[2272] Nevertheless, the European Union has indicated that, if the Panel finds the Boeing FILOT Agreement *as a whole* to provide a financial contribution through the foregoing of government revenue otherwise due, the Panel need not consider the European Union's alternative argument that the rebate provisions can also be characterized as a direct transfer of funds. (European Union's second written submission, para. 715; first written submission, para. 684).
[2273] European Union's first written submission, paras. 687 and 730 (both citing Panel Report, *US – FSC*, para. 7.103).

jure specificity within the meaning of Article 2.1(a), the legislation pursuant to which Charleston County authorised and approved the Boeing FILOT Agreement and the Project Emerald FILOT Agreement explicitly limit the availability of these arrangements to Boeing and the Project Emerald companies, respectively.[2274] With respect to *de facto* specificity within the meaning of Article 2.1(c), the Boeing FILOT Agreement and the Project Emerald FILOT Agreement are used by a limited number of enterprises, are predominantly used by certain enterprises, and grant disproportionately large amounts of the subsidy to certain enterprises. In addition, the manner in which discretion has been exercised in granting the subsidy further indicates specificity.[2275]

8.863. The United States rejects the European Union's argument that the FILOT agreements at issue provide financial contributions through the foregoing of revenue otherwise due within the meaning of Article 1.1(a)(1)(ii). The United States additionally argues that the European Union has failed to demonstrate that the Project Emerald FILOT Agreement provides a subsidy *to Boeing*, given that Project Emerald was an investment package for Vought and Global Aeronautica and the European Union has failed to demonstrate that any alleged benefits conferred to Vought and/or Global Aeronautica passed through to Boeing.[2276]

8.864. The United States argues that FILOT agreements are the rule rather than the exception for the property taxation of similarly situated industrial taxpayers in South Carolina.[2277] The United States considers that the FILOT agreements at issue in this dispute are an example of a situation in which a notional general tax rate (the rate of 10.5% mandated by the South Carolina Constitution) does not constitute the appropriate benchmark.[2278] "Similarly situated" taxpayers are *large industrial taxpayers* in South Carolina[2279] (i.e. companies eligible for FILOT agreements because they invest over USD 150 million and create 125 jobs, or invest USD 400 million in projects in South Carolina).[2280] Indeed, industrial taxpayers throughout the State of South Carolina receive the same tax treatment as Boeing if they meet the statutory investment and employment thresholds[2281] and are generally assessed pursuant to an assessment ratio of less than 4% through FILOT agreements coupled with revenue credits. When compared to this benchmark, the applicable assessment ratio under the FILOT agreements at issue is not out of the norm.[2282]

8.865. The United States also rejects the argument that the FILOT agreements provide financial contributions through a direct transfer of funds within the meaning of Article 1.1(a)(1)(i) of the SCM Agreement. The FILOT agreements and revenue credits do not entail payments or any other funds flowing from South Carolina to Boeing, and instead merely provide for the adjustment of tax payments to reflect the correct tax rate.[2283] Indeed, the amount to be rebated does not belong to South Carolina in the first place.[2284] Furthermore, the European Union fails to specify the amount of the supposed revenue credits, or to identify the alleged check or wire payments.[2285]

8.866. The United States argues that FILOT agreements, such as the Boeing FILOT Agreement and the Project Emerald FILOT Agreement, are not specific. Rather, they are a general feature of South Carolina industrial property tax law and widely available throughout South Carolina due to the relatively high property tax rate fixed by the South Carolina Constitution.[2286] The "legislation pursuant to which the granting authority operates", namely the Simplified Fee statute, including the statutory provision for Enhanced Investment Fees, South Carolina Code section 12-44-30(7)

[2274] European Union's first written submission, para. 731 (referring to Charleston County Council, Minutes of 21 December 2004 Meeting where an Inducement Resolution is approved, (Exhibit EU-561)); Charleston County, Ordinance 1476 (19 December 2006), (Exhibit EU-562), para. 688 (referring to Charleston County Council, Minutes of 17 November 2009 Meeting where an Inducement Resolution is approved, (Exhibit EU-540); and Charleston County Council, Minutes of 12 January 2010 Meeting where a County Ordinance is approved, (Exhibit EU-541)).

[2275] European Union's first written submission, paras. 689-691 and 732; second written submission, para. 717; and response to Panel question No. 112, paras. 197-201.

[2276] United States' first written submission, paras. 546-553.

[2277] United States' first written submission, para. 582; response to Panel question No. 104, para. 215.

[2278] United States' first written submission, para. 565.

[2279] United States' second written submission, paras. 537 and 538.

[2280] United States' first written submission, para. 566.

[2281] United States' second written submission, para. 542.

[2282] United States' first written submission, para. 566.

[2283] United States' first written submission, para. 567.

[2284] United States' second written submission, para. 544.

[2285] United States' second written submission, para. 544.

[2286] United States' first written submission, para. 633.

and chapter 44, Title 12, does not explicitly limit access to FILOT agreements to certain enterprises within the meaning of Article 2.1(a). Furthermore, South Carolina's FILOT programme is non-specific under Article 2.1(b) since it establishes "objective criteria or conditions" that are "clearly spelled out in law, regulation or other official document{s}" that govern eligibility to FILOT agreements within the meaning of footnote 2 to the SCM Agreement. Finally, the European Union has failed to establish that the challenged agreements are *de facto* specific within the meaning of Article 2.1(c).[2287]

8.2.8.7.3 Evaluation by the Panel

8.2.8.7.3.1 Whether there is a financial contribution

8.867. The first question before the Panel is whether the tax treatment of property covered by the Boeing FILOT Agreement and the Project Emerald FILOT Agreement involves a financial contribution in the form of the foregoing of revenue otherwise due, within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement. The European Union's basic position is that, in the absence of the challenged FILOT agreements, the property in question would be subject to the standard treatment of manufacturing property pursuant to the Constitution of the State of South Carolina, which is significantly higher. The United States' basic position is that the FILOT agreements do not involve the foregoing of revenue otherwise due because they provide for tax treatment that is identical to the treatment of manufacturing property in projects with similar investment and employment levels.

8.868. Both parties structure their arguments according to the three-step analysis set out by the Appellate Body in the original proceeding for determining the existence of revenue foregone.[2288] In our view, it is essential to consider the broader legal rationale underlying this analysis before studying its specific stages.

8.869. The Appellate Body has observed that the foregoing of revenue otherwise due within the meaning of Article 1.1(a)(1)(ii) implies that less revenue has been raised by the government than would have been raised in a different situation, and crucially that "the word 'foregone' suggests that the government has given up an entitlement to raise revenue that it could 'otherwise' have raised".[2289] However, this cannot be an entitlement in the abstract, because governments could, in theory, tax all revenues. There must therefore be some defined, normative benchmark against which a comparison can be made between the revenue actually raised and the revenue that would have been raised "otherwise".[2290] The Appellate Body has also emphasized that this comparison must be made under the domestic taxation rules established by the Member in question.[2291] Because domestic taxation rules can be varied and complex, identifying the appropriate benchmark for comparison under Article 1.1(a)(1)(ii) may be difficult.[2292] The Appellate Body has observed, in this regard, that panels must ensure that in identifying the appropriate benchmark for comparison, "they identify and examine fiscal situations which it is legitimate to compare"[2293] and that the examination under Article 1.1(a)(1)(ii) "involve{s} a comparison of the fiscal treatment of the relevant income for taxpayers in comparable situations".[2294] In this connection, the Appellate Body has expressed reservations regarding the application of a "but for" test as a basis for

[2287] United States' first written submission, paras. 634 and 635; second written submission, paras. 547-554. See also United States' response to Panel question Nos. 132, paras. 271-273, 133, paras. 274-282, 138, paras. 2 and 3, 140, para. 170, and 142, paras. 14 and 15; and comments on European Union's response to Panel question Nos. 104, para. 158, and 112, paras. 200 and 201.

[2288] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814 (reproduced below at para. 8.874). European Union's first written submission, paras. 594 and 681-683; and United States' first written submission, para. 563.

[2289] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2290] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2291] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90), and para. 808 (referring to Appellate Body Report, *US – FSC (Article 21.5 – EC)*, para. 89).

[2292] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 809.

[2293] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 809 (referring to Appellate Body Report, *US – FSC (Article 21.5 – EC)*, para. 90).

[2294] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 809 (referring to Appellate Body Report, *US – FSC (Article 21.5 – EC)*, para. 92).

determining the fiscal treatment in the absence of the contested measure[2295] and emphasized the need to take into account "the structure of the domestic tax regime and its organizing principles".[2296]

8.870. In light of the guidance provided by the Appellate Body, we consider that the tax treatment of property covered by the Boeing FILOT Agreement and the Project Emerald FILOT Agreement is a financial contribution within the meaning of Article 1.1(a)(1)(ii) because it is an instance of a government giving up an entitlement to raise revenue that it could otherwise have raised. We find support for this view in: (a) the characterization of the FILOT agreements by the South Carolina tax authorities; (b) the nature of the FILOT agreements as conditional tax incentives that provide benefits in consideration of commitments by companies regarding levels of investment and employment; and (c) the application to the facts of this case of the three-step analysis set out by the Appellate Body in the original proceeding.[2297]

8.871. First, the South Carolina tax authorities themselves describe the benefits of FILOT agreements by comparing them with the rule that applies generally to manufacturing property, and have explicitly characterized FILOT agreements as involving savings on property taxes that would be otherwise due on a project:

> Industries investing at least $2.5 million in South Carolina may negotiate for a fee-in-lieu of property taxes, resulting in a savings of about 40% on the property taxes otherwise due for a project. Additionally, certain large investments may be able to further reduce their liability. Under a fee in lieu of property tax agreement, the assessment ratio can be negotiated down from 10.5% to 6%. For large investments, the assessment ratio can be reduced down to 4%. The county and the industry may agree to either set the millage rate for the entire agreement period or have the millage change every five years in step with the average millage rate for the area where the industry's project is located. Any personal property subject to the fee in lieu of property taxes depreciates in accordance with South Carolina law while the real property is either set at cost for the life of the agreement or can be appraised every five years.[2298]

8.872. Second, as reflected in the text of the Boeing FILOT Agreement and Project Emerald FILOT Agreement, FILOT agreements are conditional tax incentives available to all companies able and willing to make or expand manufacturing investments of a certain magnitude in South Carolina, and are aimed at inducing companies to locate within the state by counteracting the relatively high property tax assessment ratio set in the South Carolina Constitution. For example, the first two recitals of the Boeing FILOT Agreement state the following:

> Whereas, to induce companies to locate in the State and to encourage companies now located in the State to expand their investments and thus to make use of and employ workers and other resources of the State, the County is authorized by Title 12, chapter 44 (the "Fee Act"), Code of Laws of South Carolina 1976, as amended, (the "Code") and specifically Section 12-44-30(7) of the Fee Act, to enter into an enhanced investment fee agreement with companies meeting the requirements of such Fee Act which identifies certain property of such companies as economic development property …
>
> Whereas, pursuant to the Act, and based on factual representations by the Company to the County, the County finds that: (a) it is anticipated that the Project (as defined herein) will benefit the general public welfare of the County by providing services, employment and other public benefits not otherwise adequately provided locally; (b) neither the Project nor any documents or agreements entered into by the County in

[2295] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 810 (referring to Appellate Body Report, *US – FSC*, para. 91, and to Appellate Body Report, *US – FSC (Article 21.5 – EC)*, fn 66). See also Appellate Body Report, *US – FSC (Article 21.5 – EC)*, paras. 815, 818, and 823.

[2296] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 815.

[2297] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814 (reproduced below at para. 8.874).

[2298] South Carolina Department of Revenue, "Fee in Lieu", available at: <http://www.sctax.org/tax/fee-in-lieu>, accessed 1 September 2016, (Exhibit EU-1436).

> connection therewith will give rise to any pecuniary liability of the County or incorporated municipality or to any charge against their general credit or taxing power; (c) the purposes to be accomplished by the Project are proper governmental and public purposes; and (d) the benefits of the Project to the public are greater than the costs to the public … .[2299]

The Boeing FILOT Agreement states that "the County agreed to make available to Boeing the benefits of certain programs, including a payment-in-lieu of taxes arrangement, in consideration of Boeing's agreement to invest in the County through the development, acquisition, and installation of certain facilities".[2300]

8.873. Thus, statements of the South Carolina tax authorities and the text of the agreements at issue clearly indicate that the treatment of manufacturing property provided for in the Boeing FILOT Agreement and the Project Emerald FILOT Agreement is understood as a "benefit" that companies receive in return for making certain commitments with respect to levels of investment and employment and which constitutes a departure from the otherwise applicable rule under which manufacturing property is subject to an assessment ratio of 10.5%. The measure can be properly characterized as conditional tax incentives that embody a *quid pro quo* arrangement where an entity is granted some form of tax advantage in exchange for fulfilling set requirements, and conversely a taxing authority relinquishes an existing entitlement to raise revenue that it could otherwise raise where an entity fulfils the set requirements.

8.874. Our tentative conclusion that the challenged FILOT agreements involve a situation in which the government gives up an entitlement to raise revenue that it could have raised otherwise finds further support in the application to the facts of this case of the three-step analysis set out by the Appellate Body in the original proceeding:

> The identification of circumstances in which government revenue that is otherwise due is foregone requires a comparison between the tax treatment that applies to the alleged subsidy recipients and the tax treatment of comparable income of comparably situated taxpayers. Accordingly, a panel examining a claim under Article 1.1(a)(1)(ii) of the *SCM Agreement* should first identify the tax treatment that applies to the income of the alleged recipients. Identifying such tax treatment will entail consideration of the objective reasons behind that treatment and, where it involves a change in a Member's tax rules, an assessment of the reasons underlying that change.
>
> As a second step, the panel should identify a benchmark for comparison–that is, the tax treatment of comparable income of comparably situated taxpayers. We recognize that this is not always a straightforward exercise, and may in some circumstances be exceedingly difficult. Identifying a benchmark involves an examination of the structure of the domestic tax regime and its organizing principles. In some cases, the principles will be ones well recognized in the tax regimes of Members; in other cases, they will be unique to the particular domestic regime. It may be that disparate tax measures, implemented over time, do not easily offer up coherent principles serving as a benchmark. In any event, the task of the panel is to develop an understanding of the tax structure and principles that best explains that Member's tax regime, and to provide a reasoned basis for identifying what constitutes comparable income of comparably situated taxpayers. Evidence relied upon in such an analysis must be located in the "rules of taxation that each Member, by its own choice, establishes for itself". In doing so, a Member will be held to account for the tax structure and principles that it itself employs. This is akin to the approach undertaken in the field of public finance for purposes of estimating what are known as "tax expenditures".
>
> Finally, as a third step, the panel should compare the reasons for the challenged tax treatment with the benchmark tax treatment it has identified after scrutinizing a Member's tax regime. Such a comparison will enable a panel to determine whether, in the light of the treatment of the comparable income of comparably situated taxpayers,

[2299] Boeing FILOT Agreement, (Exhibit EU-470), p. 1. Similarly, see Project Emerald FILOT Agreement, (Exhibit EU-556), recitals 4 and 5.

[2300] Boeing FILOT Agreement, (Exhibit EU-470), recital 3. Similarly, see Project Emerald FILOT Agreement, (Exhibit EU-556), recital 4.

> the government is foregoing revenue that is otherwise due in relation to the income of the alleged recipients.[2301]

8.875. As to the first step of this analysis, we have described the tax treatment applicable to the property covered by the Boeing FILOT Agreement and the Project Emerald FILOT Agreement above in paragraphs 8.857 and 8.858. We consider that the "objective reasons behind that treatment" can be discerned from the stated purpose of the agreements. As expressed in the Boeing FILOT Agreement, the purpose is "to induce companies to locate in the State and to encourage companies now located in the State to expand their investments and thus to make use of and employ workers and other resources of the State".[2302]

8.876. We observe that the disagreement between the parties primarily concerns the second step of the Appellate Body's analysis, namely the identification of the benchmark tax treatment and more specifically how "comparably situated taxpayers" should be defined. The identification of comparable taxable, income, activity or property of "comparably situated taxpayers" and the tax treatment applicable to such taxpayers under the second step of the Appellate Body's analysis has direct implications for the comparison carried out under the third step, and the determination of whether the Boeing FILOT Agreement and the Project Emerald FILOT Agreement involve the foregoing of revenue that is otherwise due. For the reasons detailed below, we are of the view that the group of comparably situated taxpayers in this instance should be considered to comprise manufacturers subject to the tax rules set out in the South Carolina Constitution with regard to manufacturing property, rather than large industrial users eligible for enhanced investment fee agreements, as argued by the United States.

8.877. First, regarding the "structure and organising principles", a central feature of South Carolina's property tax regime is that it distinguishes between broad categories of property, with different rules applying to each of these categories.[2303] This suggests to us that, in the case at hand the "comparable property of comparably situated taxpayers"[2304] is manufacturing property and therefore that the appropriate benchmark is the constitutional assessment ratio of 10.5% that applies generally to manufacturing property. Under the approach advanced by the United States, Boeing and other large industrial taxpayers are "comparably situated" because they satisfy the same eligibility requirements relating to investment and employment levels. This means that the group of comparably situated taxpayers is defined by the criteria attached to the very measure that is alleged to give rise to the foregoing of revenue otherwise due. We find the circularity of this argument to be problematic. Since the granting of tax incentives is often conditioned on criteria similar to the criteria that determine the eligibility for the FILOT agreements at issue in this dispute, accepting the argument advanced by the United States would imply that an important category of measures could not be found to be financial contributions within the meaning of Article 1 of the SCM Agreement. Indeed, if one follows the reasoning of the United States, the Boeing FILOT Agreement and the Project Emerald FILOT Agreement could only be found to involve revenue foregone otherwise due if there were not a single taxpayer in South Carolina which met the same criteria for eligibility for the same type of FILOT agreement and was thus comparably situated. However, the United States does not explain the legal and conceptual basis for such a narrow conception of the scope of Article 1.1(a)(1)(ii).

8.878. Further to the above, the comparison suggested by the United States of the tax treatment of one individual taxpayer under a challenged measure with the treatment of other taxpayers who qualify for the same tax treatment is at odds with cases in which the Appellate Body has articulated the comparability test, which examine measures applicable to a more abstractly identified group of taxpayers. The Appellate Body found in those cases that there was revenue foregone when the treatment of one category of taxpayers was more favourable than the treatment of another comparable category. It gave as examples of comparable situations the following: "{i}n general terms, in this comparison, like will be compared with like. For instance, if the measure at issue involves income earned in sales transactions, it might not be appropriate to

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[2301] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814 (fns omitted). While the above analysis refers to comparable income, the Appellate Body has noted that it "understand{s} that the same approach would apply to identifying any comparable taxable activity, transaction, or property of comparably situated taxpayers". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 1667).

[2302] See para. 8.872 above.

[2303] See para. 8.855 above.

[2304] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 1667.

compare the treatment of this income with employment income".[2305] Furthermore, "{f}or instance, if the measure at issue is concerned with the taxation of foreign-sourced income in the hands of a domestic corporation, it might not be appropriate to compare the measure with the fiscal treatment of such income in the hands of a foreign corporation".[2306] The very narrow benchmark suggested by the United States is at odds with these examples of comparable situations given by the Appellate Body.

8.879. Second, to find that there is revenue forgone based on a comparison with "comparably situated taxpayers" defined as comprising "manufacturers" is consistent with the analysis in the original proceeding of certain Washington State tax measures. The original panel determined that a Washington State B&O tax rate reduction for manufacturing of commercial aircraft and components of such aircraft provided for under HB 2294 constituted a financial contribution under Article 1.1(a)(1)(ii) of the SCM Agreement. In arriving at this conclusion, the panel made a comparison between a general tax rate applicable to manufacturing activities in the State of Washington and the tax rate applicable under HB 2294 with respect to the manufacturing of commercial aircraft and components. The panel noted, in this regard, that it was possible to identify a general rule applicable to "every person … engaging in business as a manufacturer".[2307] The panel found further support for its characterization of the B&O tax rate reduction as a deviation from a standard rate on the basis that HB 2294 provided that where certain requirements were not met the reduced rate would cease to apply and the aircraft manufacturers would be subject to the general rate for manufacturing.[2308] The Appellate Body observed that this supported the panel's view as to what were the benchmark tax rates because these rates "reflected what would currently apply to these activities if the conditions for the lower rates were not met".[2309]

8.880. The implication of the approach in the original proceeding is that, where tax treatment is accorded that is more favourable than the treatment resulting from a general rule, subject to certain conditions, the measure involves the foregoing of revenue otherwise due based on a comparison with the situation that would exist if the conditions for the more favourable treatment were not met. In the case of the Boeing FILOT Agreement and the Project Emerald FILOT Agreement, it is clear that South Carolina's tax code sets forth general rules on the taxation of different types of property, including an assessment ratio of 10.5% for manufacturing property, and that where a party to a FILOT agreement fails to meet the requirements to qualify for the lower assessment ratios, the higher assessment ratio under the general rule will be applied retroactively to the property covered by the agreements.[2310]

8.881. In light of our view that the group of "comparably situated taxpayers" in this instance should be considered to comprise manufacturers, subject to the constitutional property tax assessment ratio of 10.5% in respect of manufacturing property, rather than large industrial users eligible for Enhanced FILOT agreements, we find that a comparison of the challenged tax treatment with the properly identified benchmark tax treatment, in light of the reasons for the challenged tax treatment[2311], indicates the foregoing of government revenue otherwise due.

8.882. **We therefore conclude that each of the Boeing FILOT Agreement and the Project Emerald FILOT Agreement involves a financial contribution within the meaning of Article 1.1(a)(1)(ii).**

[2305] Appellate Body Report, *US – FSC (Article 21.5 – EC)*, para. 90.
[2306] Appellate Body Report, *US – FSC (Article 21.5 – EC)*, para. 92.
[2307] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.123.
[2308] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.127.
[2309] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 823. See also para. 825:

> The Panel also determined that commercial aircraft and component manufacturers are subject to a lower tax rate, which would in certain circumstances revert to the higher, general tax rates. The Panel moreover considered that the scope of the general tax rates in relation to that of various lower tax rates did not alter its conclusion that the general rates reflected what would have been applied to commercial aircraft and component manufacturers in the absence of the B&O tax reduction.

[2310] Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit USA-245), section 12-44-140(B); Boeing FILOT Agreement, (Exhibit EU-470), sections 5.7(b) and 5.7(c); and Project Emerald FILOT Agreement, (Exhibit EU-556), section 4.3(a).
[2311] See para. 8.872 above.

8.883. Further to the above, we note that the Boeing FILOT Agreement and the Project Emerald FILOT Agreement include fee rebates. We recall the European Union's position that if the Panel finds that the Boeing FILOT Agreement and the Project Emerald FILOT Agreement *as a whole* provide financial contributions through the foregoing of government revenue otherwise due, within the meaning of Article 1.1(a)(1)(ii), the Panel need not consider the European Union's alternative argument that the revenue credits can also be characterized as a direct transfer of funds within the meaning of Article 1.1(a)(1)(i).[2312] In light of our finding that the Boeing FILOT Agreement and the Project Emerald FILOT Agreement each involve a financial contribution within the meaning of Article 1.1(a)(1)(ii), it is therefore unnecessary for us to pronounce on the European Union's alternative argument.

8.884. Finally, we recall the United States' argument that the Project Emerald FILOT Agreement does not provide a financial contribution *to Boeing*. While we find that the Project Emerald FILOT Agreement involves a financial contribution within the meaning of Article 1.1(a)(1)(ii), we consider it a separate question whether this financial contribution was provided to Boeing. We note that the European Union has not argued that any benefit from the Project Emerald FILOT Agreement passed through to Boeing. In light of our conclusion below that the challenged FILOT agreements are not specific within the meaning of Article 2, we do not consider it necessary to answer the separate question of whether the Project Emerald FILOT Agreement provided a financial contribution to Boeing.[2313]

8.2.8.7.3.2 Whether there is a benefit

8.885. The United States makes no substantive arguments to refute the European Union's position that the foregoing of taxes that are otherwise due "clearly confers a benefit".[2314] We agree with the panel in *US – FSC* that the foregoing of certain taxes that would otherwise be due confers a benefit on the taxpayer concerned.[2315] **We therefore find that the reduction in property tax liability provided through the Boeing FILOT Agreement and the Project Emerald FILOT Agreement each confers a benefit within the meaning of Article 1.1(b).**

8.2.8.7.3.3 Whether the subsidy is specific

8.886. The first question raised by the parties' arguments is whether the subsidy granted through the property tax reductions provided for in the Project Emerald FILOT Agreement and the Boeing FILOT Agreement, respectively, is specific within the meaning of Article 2.1(a); i.e. whether "the granting authority, or the legislation pursuant to which the granting authority operates, explicitly limits access to a subsidy to certain enterprises".[2316]

8.887. An analysis of whether a subsidy is specific within the meaning of Article 2.1(a) must focus on whether the granting authority, or the legislation pursuant to which the granting authority operates, limits the *eligibility* to receive the subsidy to certain enterprises.[2317] The European Union

[2312] European Union's second written submission, para. 715; first written submission, para. 684.
[2313] See Section 8.2.8.7.3.3 below.
[2314] European Union's first written submission, para. 687 (citing Panel Report, *US – FSC*, para. 7.103).
[2315] Panel Report, *US – FSC*, para. 7.103: "{i}n our view, the financial contribution clearly confers a benefit, in as much as both FSCs and their parents need not pay certain taxes that would otherwise be due."
[2316] The Appellate Body has explained that "a subsidy is specific under Article 2.1(a) if the limitation on access to the subsidy to certain enterprises is express, unambiguous, or clear from the content of the relevant instrument, and not merely 'implied' or 'suggested"'. (Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 372). See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.192. With regard to the term "certain enterprises", the Appellate Body has explained that "the relevant enterprises must be 'known and particularized', but not necessarily 'explicitly identified', and that they may have 'some mutual or common relation or purpose', or 'degree of similarity'". (Appellate Body Report, *US – Carbon Steel (India)*, para. 4.365). "{A}ny determination of whether a number of enterprises or industries constitute 'certain enterprises' can only be made on a case-by-case basis". (Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 373 (quoting Panel Report, *US – Upland Cotton*, para. 7.1142)). See also Appellate Body Report, *US – Washing Machines*, paras. 5.220 and 5.221 (explaining that the notion of "certain enterprises" in Article 2.2 of the SCM Agreement does not depend on the legal personality of the subsidy recipients).
[2317] See, in particular, Appellate Body Report, *US – Anti-Dumping and Countervailing Duties (China)*, para. 368 ("Article 2.1(a) thus focuses not on whether a subsidy has been granted to certain enterprises, but on whether *access* to that subsidy has been explicitly limited. This suggests that the focus of the inquiry is on whether certain enterprises are eligible for the subsidy, not on whether they in fact receive it." (emphasis

does not argue that the eligibility for the subsidy at issue is explicitly limited by virtue of pronouncements of the granting authority; rather, the question before us is whether such an explicit limitation exists by virtue of the legislation pursuant to which the granting authority operates.

8.888. Since "eligibility is key to a consideration of *de jure* specificity under subparagraphs (a) and (b) of Article 2.1 of the SCM Agreement"[2318], we consider that the term "legislation pursuant to which the granting authority operates" in Article 2.1(a) must be understood to mean the legislation that defines the criteria of eligibility for a subsidy.[2319] Charleston County entered into the Project Emerald FILOT Agreement and the Boeing FILOT Agreement pursuant to the provisions of the Simplified FILOT Act that authorize the conclusion of enhanced investment fee agreements with companies meeting the requirements set out in those provisions.[2320] Accordingly, these provisions constitute "the legislation pursuant to which the granting authority operates" for purposes of the analysis under Article 2.1(a).[2321]

8.889. We note, in this respect, that the European Union does not advance any argument as to how the text of the relevant provisions of the Simplified FILOT Act relating to enhanced investment fee agreements limits the eligibility for the subsidy to certain enterprises. While the Act provides that such agreements can be concluded only if certain conditions relating to levels of investment and/or employment are satisfied[2322], we consider that these conditions do not expressly limit the eligibility for enhanced investment fee agreements to certain enterprises.

8.890. Because the Simplified FILOT Act is "the legislation pursuant to which the granting authority operates", we see no merit in the argument of the European Union that the subsidy should be found to be specific under Article 2.1(a) on the basis that certain resolutions and ordinances pursuant to which Charleston County authorized and approved the Project Emerald FILOT Agreement and Boeing FILOT Agreement "explicitly limited the availability of the FILOT arrangement" to the Project Emerald companies and to Boeing.[2323] The fact that the County Resolution and Ordinance adopted by Charleston County in connection with the FILOT agreements at issue only identify the Project Emerald companies and Boeing as beneficiaries of an enhanced investment fee agreement simply reflects the application of the Simplified FILOT Act in individual cases and does not demonstrate an "explicit limitation" of access to the subsidy to certain enterprises.[2324]

8.891. In this respect, we disagree with the European Union's argument that "the actions of Charleston County are the proper focus for whether the granting authority explicitly limited access to the subsidy to certain enterprises". Even assuming that in this case Charleston County could be

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original)), and *US – Large Civil Aircraft (2nd complaint)*, para. 753 ("{t}his inquiry focuses not only on whether the subsidy was provided to the particular recipients identified in the complaint, but focuses also on all enterprises or industries eligible to receive that same subsidy").

[2318] Appellate Body Report, *US – Carbon Steel (India)*, para. 4.384.

[2319] This interpretation is also supported by a reading of Article 2.1(a) in the context of Article 2.1(b). See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 750.

[2320] The agreements and associated county resolutions and ordinances explicitly refer to the relevant provisions of section 12-44-30 of the South Carolina Code. (Project Emerald FILOT Agreement, (Exhibit EU-556), p. 2; Charleston County Council, Minutes of 21 December 2004 Meeting where an Inducement Resolution is approved, (Exhibit EU-561), p. 52; Charleston County, Ordinance 1476 (19 December 2006), (Exhibit EU-562), p. 1; Boeing FILOT Agreement, (Exhibit EU-470), p. 1; Charleston County Council, Minutes of 17 November 2009 Meeting where an Inducement Resolution is approved, (Exhibit EU-540), section 2; and Charleston County Council, Minutes of 12 January 2010 Meeting where a County Ordinance is approved, (Exhibit EU-541), p. 4).

[2321] The Appellate Body Report in the original proceeding emphasizes the need for an inquiry concerning specificity under Article 2.1(a) properly to take into account the broader legislative framework pursuant to which the subsidy has been provided. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 750, 753, and 841). Also see Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. *7.565.*

[2322] See para. 8.856 above. See Fee in Lieu of Tax Simplification Act, *S.C. Code*, Title 12, chapter 44, (Exhibit USA-245), section 12-44-30(7), for the definition of an "enhanced investment" project.

[2323] See para. 8.862 above.

[2324] The European Union argues that "each of these fee agreements is explicitly restricted to a specific company or group of companies". (European Union's second written submission, fn 1206). In our view, this has no bearing on whether the eligibility for the subsidy is explicitly limited to certain enterprises. We also consider that the fact that the Project Emerald FILOT Agreement was entered into pursuant to agreements concluded between Charleston County and the Project Emerald Companies does not demonstrate that access to the subsidy is explicitly limited to certain enterprises.

considered a granting authority within the meaning of Article 2.1(a), a proper analysis of whether eligibility for the subsidy is limited to certain enterprises must take into account that Charleston County operates pursuant to legislation of South Carolina. Charleston County does not autonomously define the conditions of eligibility for the subsidy; rather, when Charleston County (or any other county in South Carolina) enters into a FILOT agreement, it acts on the basis of conditions of eligibility provided for in legislation adopted by South Carolina. Thus, treating Charleston County as "granting authority" provides no justification to narrow the scope of the analysis under Article 2.1(a) to "the actions of Charleston County".[2325] We recall, in this respect, that in the original proceeding the Appellate Body rejected the view that the use of the term "granting authority" in Article 2.1(a) means that "the analysis of specificity must be limited to the authority actually granting the alleged subsidy", "in isolation from the legislative and regulatory framework within which {the granting authority} operates".[2326]

8.892. In light of the above, we find that the European Union has failed to establish that access to the subsidy granted through the property tax reductions provided for in the FILOT Agreements at issue is explicitly limited to certain enterprises within the meaning of Article 2.1(a).

8.893. Having made such a finding that the subsidy is not specific under Article 2.1(a), we find it unnecessary to pronounce on the issues raised by the parties with regard to whether the conditions attached to the subsidy satisfy the requirements of Article 2.1(b).[2327] We note that in the original proceeding the Appellate Body observed that "having found that the IRB subsidies are

[2325] We note, in this regard, that consistent with our approach to whether the FILOT Agreements at issue are specific, within the meaning of Article 2.1(a), the original panel concluded that subsidies provided through industrial revenue bonds issued by the City of Wichita were not specific in the sense of Article 2.1(a), based on an examination of the relevant Kansas State statutory provisions. Thus, the panel did not consider that the fact that the Bonds were issued by the City of Wichita warranted a limitation of the scope of the analysis to "the actions of" the City of Wichita as granting authority. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.743). See also Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 875.

[2326] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 783. Also see paras. 756-760. The Appellate Body considered the question of how the notion of "the granting authority" relates to the scope of the specificity analysis in the context of an appeal by the European Union of the panel's finding that, assuming *arguendo* that the allocation of patent rights under NASA and DOD contracts and agreements with Boeing were a subsidy, that subsidy would not be specific under Article 2 of the SCM Agreement. The Appellate Body stated that it did "not consider that the use of the term 'granting authority' in the singular limits the inquiry. The use of the term 'granting authority', in our view, does not preclude there being multiple granting authorities. Rather, this is likely where a subsidy is part of a broader scheme." (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 749). The Appellate Body also noted that "{w}hile the scope and operation of the granting authority is relevant to the question of whether such an access limitation with respect to a particular class of recipients exists, it is important to keep in mind that it is not the purpose of a specificity analysis to determine whether the authorities involved in granting the subsidies constitute a single subsidy *grantor* or several *grantors*". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 756 (emphasis original)). In concluding this Section of the Report, the Appellate Body noted that "the granting authority (which may amount to a number of such authorities) and the legislation pursuant to which such granting authority(ies) operate(s) must be assessed within the legal framework of the WTO Member concerned at various levels of government, legislation, and regulation". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 760).

[2327] The United States argues that FILOT agreements are not specific, within the meaning of Article 2.1(b) of the SCM Agreement, because the eligibility criteria attached to these agreements regarding investment and employment levels are "objective criteria or conditions", within the meaning of Article 2.1(b) (and fn 2) of the SCM Agreement. (United States' first written submission, para. 635; second written submission, para. 550). While the European Union does not challenge the characterization of the investment and employment-related criteria as "objective", it points out that Article 2.1(b) requires that the objective criteria govern both eligibility and amount of the subsidy and that eligibility be automatic. According to the European Union, the eligibility criteria for the FILOT agreements do not satisfy these conditions because "the amount of the subsidy depends on the specific terms negotiated between the county and the project sponsor, while the US' purportedly 'objective' criteria are merely minimum requirements for a county's discretionary decision to negotiate a FILOT agreement". (European Union's second written submission, para. 720). See also European Union's comments on United States' response to Panel question No. 139, fn 17 and para. 17 (citing explanation by the South Carolina Department of Revenue that "{a} fee in lieu of property taxes is granted by the county and it is in the sole discretion of the county as to whether to grant a fee in lieu of property taxes for a particular project"). The United States rejects this criticism as unfounded because the European Union "fails to explain whether or how these 'negotiations' affect the eligibility for, or the amount of, the alleged subsidy" and has not identified any instances in which two taxpayers with projects with identical investment and employment profiles have been treated differently with respect to either eligibility for, or the amount of, the alleged subsidy. (United States' second written submission, para. 551).

not specific within the meaning of Article 2.1(a), analysis by the Panel under Article 2.1(b) was not necessary".[2328]

8.894. The second question relating to specificity raised by the parties' claims and arguments is whether the subsidy granted through the property tax reductions provided for in the Project Emerald FILOT Agreement and the Boeing FILOT Agreement is specific within the meaning of Article 2.1(c) of the SCM Agreement. The European Union argues that the subsidy is specific in terms of each of the four factors listed in the second sentence of Article 2.1(c).[2329] The first of these factors is the "use of a subsidy programme by a limited number of certain enterprises".[2330]

8.895. According to data provided by the United States in response to a Panel question, 954 FILOT agreements were concluded in South Carolina between 2000 and 2012. Furthermore, of the total of 954 FILOT agreements concluded by South Carolina between 2000 and 2012, 929 agreements provided for a 6% assessment ratio and 25 agreements provided for a 4% assessment ratio. Of the agreements with a 4% assessment ratio, 20 were accompanied by special source revenue credits. The data provided by the United States also shows that with regard to Charleston County, 29 FILOT agreements were concluded between 2000-2012. Of that total, 26 were agreements with a 6% assessment ratio and three were agreements with a 4% assessment ratio. The three agreements with a 4% assessment ratio were accompanied by special source revenue credits.[2331]

8.896. The parties disagree on whether the analysis of specificity under this and other factors enumerated in the second sentence of Article 2.1(c) should be conducted at the level of South Carolina or at the level of Charleston County. In our view, it is not necessary to decide this issue. Even assuming that, as argued by the European Union, the analysis should be confined to Charleston County as granting authority[2332], we consider that the European Union has not provided sufficient reasoning and evidence to warrant a finding that the subsidy is specific in fact by reason of the use of the subsidy programme by a limited number of certain enterprises.

8.897. The European Union argues that the fact that Charleston County has entered into only two enhanced investment FILOT agreements, three FILOT agreements of any kind providing for a 4% assessment ratio and only thirty-three negotiated FILOT agreements overall is indicative of "a

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[2328] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 876.

[2329] See para. 8.862 above.

[2330] The Appellate Body has explained that this factor is to be interpreted to mean that "a limited quantity of enterprises or industries qualifying as 'certain enterprises' must be found to have used the subsidy programme, without requiring that the limited quantity represent a subset of some larger grouping of 'certain enterprises'". (Appellate Body Report, *US – Carbon Steel (India)*, para. 4.378). Moreover, this first factor does not require a finding of discrimination between "certain enterprises" and other, similarly situated enterprises. (Appellate Body Report, *US – Carbon Steel (India)*, paras. 4.381-4.390). According to the Appellate Body, "{w}hat matters for the inquiry called for by subparagraph (a) and the first factor in subparagraph (c) is the existence of a limitation on access to, or use of, a subsidy". (Appellate Body Report, *US – Carbon Steel (India)*, para. 4.385; see also Panel Report, *US – Carbon Steel (India)*, para. 7.121). The Appellate Body has also indicated that a "subsidy programme" as used in this first factor in Article 2.1(c) means a "plan or scheme of some kind". (Appellate Body Report, *US – Countervailing Measures (China)*, para. 4.141).

[2331] United States' response to Panel question No. 142, paras. 14 and 15. In response to the same question the United States also provided a list of all (28) FILOT agreements with a 4% assessment ratio concluded in South Carolina between 2000 and 2014 (Exhibit USA-553).

[2332] While the panel in the original proceeding examined the existence of specificity under Article 2.1(a) in the case of the tax abatements granted by industrial revenue bonds issued by the City of Wichita on the basis of the relevant Kansas State legislation, the panel limited the scope of its examination of specificity under Article 2.1(c) to the City of Wichita as granting authority. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.746-7.779). The panel explained that for purposes of the analysis required by the last sentence of Article 2.1(c) of the extent of diversification of economic activities within the jurisdiction of the granting authority, the City of Wichita was the relevant granting authority:

> In the case of the IRBs provided to Boeing and Spirit, although the State of Kansas implemented the legislation authorizing the issuance of IRBs, individual cities and counties are responsible for actually granting the IRBs. Therefore, the City of Wichita is the relevant granting authority and the diversification of the Wichita economy must be considered.

(Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2125)
The panel's approach to the scope of the *de facto* specificity analysis was not raised on appeal. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 859-889).

limited number of users".[2333] The European Union contends that the data on the number of FILOT agreements provided by the United States in response to a Panel question shows that the number of FILOT agreements concluded by Charleston County is "quite small", both in absolute and in relative terms, and thus supports its position that FILOT agreements have been used by "a limited number of certain enterprises" within the meaning of Article 2.1(c).[2334]

8.898. We note, first, that in making these arguments purporting to demonstrate how the subsidy programme is used by a limited number of certain enterprises, the European Union does not address the two factors that must be taken into account in any analysis of *de facto* specificity under the last sentence of Article 2.1(c), i.e. the extent of diversification of economic activities within the jurisdiction of the granting authority, and the length of time during which the subsidy programme has been in operation.[2335] Second, if, "{i}t is the function of the inquiry under subparagraph (c) to determine whether, for example, only a limited number of certain enterprises, in fact, have access to the subsidy"[2336], it is necessary to provide some reasoning as to how a given number of enterprises using a subsidy programme reflects the existence of a limitation on access to the subsidy.[2337] That Charleston County has entered into three enhanced investment FILOT agreements, and thirty-three negotiated FILOT agreements in total may simply be a logical consequence of the application of the conditions attached to the subsidy in the particular context of that County's economy.[2338] To qualify a given number of agreements as "quite small" is not sufficient, in our view, to conclude that there is *de facto* specificity based on the use of the subsidy programme by a limited number of certain enterprises.

8.899. On the other hand, if we ascertain whether there is in this case use of a subsidy programme by a limited number of certain enterprises at the level of South Carolina, we note that the information before us indicates that 954 FILOT agreements of different types were concluded in South Carolina from 2000 to 2012 and that the European Union has not contested that, as argued by the United States, this involved a wide variety of industries and enterprises. The European Union argues that the number of FILOT agreements concluded in South Carolina is not relevant, but nevertheless notes that this number is "quite small" on the basis that the number of all active FILOT agreements in South Carolina in 2013 represented at most 25% of all manufacturing establishments in South Carolina.[2339] This argument suffers from the same flaws

[2333] European Union's first written submission, para. 689; Charleston County, Chart of negotiated Fee-in-Lieu-of-Taxes (FILOT) Agreements, (Exhibit EU-544); and Charleston County Negotiated FILOT Agreements, (Exhibit EU-545).

[2334] European Union's comments on United States response to Panel question No. 142, para. 22.

[2335] Article 2.1(c), last sentence. See Panel Reports, *US – Countervailing Measures (China)*, paras. 7.250-7.256; and *US – Washing Machines*, paras. 7.251-7.255. While these reports addressed the requirements of the last sentence of Article 2.1(c) in the context of countervailing duty determinations, there is nothing in that sentence to suggest that it does not also apply to determinations of *de facto* specificity in proceedings under Part III of the SCM Agreement. We recall that the panel in the original proceeding rejected an argument of the European Communities that industrial revenue bonds granting property tax abatements were *de facto* specific by virtue of the use of the subsidy programme by a limited number of certain enterprises because the European Communities failed to take into account the two factors identified in the last sentence of Article 2.1(c). (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.778).

[2336] Appellate Body Report, *US – Carbon Steel (India)*, para. 4.384.

[2337] We agree, in this regard, with the observations of the panel in *US – Carbon Steel (India)* on the relationship between Articles 2.1(a) and 2.1(c):

> These two provisions complement one another. Article 2.1(a) concerns limitations on access to subsidies that exist in law. Article 2.1(c) concerns limitations on access that are not expressly provided for in legal instruments, but whose existence may nevertheless be determined by reference to facts. In both cases, what matters is the existence of a restriction on access to the subsidy, in the sense that the subsidy is available to certain enterprises, industries, or groups of enterprises or industries, but not to others.

(Panel Report, *US – Carbon Steel (India)*, para. 7.121)

[2338] The European Union asserts that according to the data provided by the United States, Charleston County had 29 active FILOT agreements in 2012, representing at most 10% of the total number of manufacturing establishments in Charleston County. (European Union's comments on United States' response to Panel question No. 142, para. 22). The European Union does not explain how this comparison of the number of FILOT agreements with the total number of manufacturing establishments in Charleston County indicates that the subsidy is specific in fact by virtue of the use of a subsidy programme by a limited number of certain enterprises. In particular, the European Union's argument fails to address the possibility that the total number of FILOT agreements in Charleston County can be logically explained as resulting from the application of the conditions attached to the different types of FILOT agreements in the context of that County's economy.

[2339] European Union's comments on United States' response to Panel question No. 142, para. 22.

that we have discussed above in respect of the European Union's argument concerning the number of FILOT agreements concluded by Charleston County.

8.900. Third, the argument of the European Union to support its claim that the subsidy is *de facto* specific because of "the granting of disproportionately large amounts of subsidy to certain enterprises", is inconsistent with the guidance provided by the Appellate Body as to how this "relational concept" should be applied.[2340] The various arguments made by the European Union in this regard fail to address the question of whether there is a "disparity between the expected distribution of that subsidy, as determined by the conditions of eligibility, and its actual distribution" and, more specifically, "whether the actual allocation of the 'amounts of subsidy' to certain enterprises is too large relative to what the allocation would have been if the subsidy were administered in accordance with the conditions for eligibility for that subsidy".

8.901. The European Union argues that Boeing and its suppliers are "disproportionate users" based on the fact that both enhanced investment FILOT agreements, and two of three FILOT agreements entered into by Charleston County were concluded with Boeing and its suppliers, and that the FILOT agreements concluded with Boeing and its suppliers accounted for more than 55% of the total minimum amounts of investment covered by the FILOT agreements concluded by Charleston County.[2341] This argument does not demonstrate that there is disproportionality within the meaning of Article 2.1(c) because it does not involve any analysis of the actual allocation of the amounts of the subsidy at issue and of how that allocation is different from what would be expected in light of the eligibility conditions attached to the conclusion of enhanced investment FILOT agreements.

8.902. The European Union also argues that Boeing and Westvaco, "have received 100 per cent of the 4 per cent FILOT granted by Charleston County since 1998" but account for only 27% of total employment in manufacturing employment in the Charleston MSA and 44% of the manufacturing employment in Charleston County.[2342] The European Union does not explain, and we fail to see, how a comparison of the number of the agreements with the percentage of manufacturing employment provides any indication of a disparity between the actual distribution of the amounts of the subsidy and the distribution that would be expected on the basis of the eligibility criteria provided for in the Simplified FILOT Act. In particular, apart from the fact that it does not identify the amount of the subsidy and how that amount is distributed, the European Union does not

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[2340] The Appellate Body has discussed this issue as follows:

> The language of Article 2.1(c) indicates that the first task is to identify the "amounts of subsidy" granted. Second, an assessment must be made as to whether the amounts of subsidy are "disproportionately large". This term suggests that disproportionality is a relational concept that requires an assessment as to whether the amounts of subsidy are out of proportion, or relatively too large. When viewed against the analytical framework set out above regarding Article 2.1(c), this factor requires a panel to determine whether the actual allocation of the "amounts of subsidy" to certain enterprises is too large relative to what the allocation would have been if the subsidy were administered in accordance with the conditions for eligibility for that subsidy as assessed under Article 2.1(a) and (b). In our view, where the granting of the subsidy indicates a disparity between the expected distribution of that subsidy, as determined by the conditions of eligibility, and its actual distribution, a panel will be required to examine the reasons for that disparity so as ultimately to determine whether there has been a granting of disproportionately large amounts of subsidy to certain enterprises.

(Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 879 (fn omitted)).
See also para. 883 ("{w}here the actual distribution of a subsidy deviates materially from the expected distribution of that subsidy, a panel would need to examine the reasons provided by the parties to explain that outcome"), and para. 886 ("a panel's inquiry under Article 2.1(c) should focus on the reasons that explain any disparity between the actual and expected distributions of a subsidy"). The Appellate Body reiterated its view that the third factor in Article 2.1(c) reflects a relational concept in its Report in *US – Carbon Steel (India)*, paras. 4.388 and 4.389. See also Panel Report, *US – Washing Machines*, paras. 7.231-7.244. The panel in *US – Washing Machines* concluded from its review of Appellate Body case law on this issue that "the relational nature of the analysis {means} that a finding of disproportionality must be based on an assessment of how the amount of subsidy actually received relates to an objective benchmark indicative of the amount of subsidy that the recipient would have been expected to receive if the subsidy were distributed proportionately, in accordance with the conditions for eligibility". (Panel Report, *US – Washing Machines*, para. 7.236).

[2341] European Union's first written submission, para. 690; second written submission, para. 717.

[2342] European Union's response to Panel question No. 112, paras. 199 and 200. (underlining original, emboldening removed)

provide any reasoning as to why, in light of those eligibility criteria, one would expect a distribution of the subsidy in proportion to the percentage of manufacturing employment accounted for by the companies in question.

8.903. Finally, we see no merit in the argument that "the United States cannot justify why the investments of Boeing, its suppliers (Vought/Global Aeronautica), and Westvaco were accorded a 4% assessment rate, while all of the other 30 recipients were accorded a 6% assessment rate". Since this difference is a direct consequence of the application of the eligibility criteria, it cannot form the basis for a finding of disproportionality within the analytical framework set out by the Appellate Body.[2343]

8.904. Regarding the fourth factor listed in the second sentence of Article 2.1(c), we find that the European Union has failed to show that the FILOT agreements at issue in this dispute are *de facto* specific within the meaning of Article 2.1(c) on account of "the manner in which discretion has been exercised by the granting authority in the decision to grant a subsidy". The mere existence of discretion is not a sufficient basis to find that a subsidy is *de facto* specific under Article 2.1(c). Rather there must be analysis of how discretion has been exercised by the granting authority in the grant of the subsidy.[2344] In that regard, footnote 3 to Article 2.1(c) requires consideration of "information on the frequency with which applications for a subsidy are refused or approved and the reasons for such decisions". The European Union does not submit any such information in support of its argument that the Boeing FILOT Agreement is specific because of the discretionary nature of the measure. The fact that FILOT agreements are individually negotiated with particular companies and must be approved as to the particular agreement by the county council[2345] says nothing about how discretion "has been exercised in the grant of the subsidy" and can therefore not justify a finding of specificity under Article 2.1(c).

8.905. Finally, we note that the European Union also argues that the subsidy provided through the property tax reductions under the Project Emerald FILOT Agreement and the Boeing FILOT Agreement is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.906. **In light of the above, we find that the European Union has failed to establish that the subsidy provided through the property tax reductions under the Project Emerald FILOT Agreement and the Boeing FILOT Agreement is specific within the meaning of Articles 2.1(a) or (c) of the SCM Agreement**.

8.907. We recall that while we find in Section 8.2.8.7.3.1 above that the property tax reductions provided for through the Project Emerald FILOT Agreement constitute a financial contribution, we have left open the question of whether this is a direct financial contribution to Boeing. In light of our finding that the subsidy provided through the Project Emerald FILOT Agreement is not specific, we consider it unnecessary to decide that issue.

8.2.8.7.4 Conclusion

8.908. In light of our findings above, we conclude that the European Union has failed to establish that the fee-in-lieu-of taxes arrangements set forth in the Boeing FILOT Agreement and Project Emerald FILOT Agreement are specific, and therefore involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement.

[2343] European Union's response to Panel question No. 112, para. 203.
[2344] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 798; and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.773.
[2345] European Union's first written submission, para. 691.

8.2.8.8 Whether the corporate income tax credits in connection with the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton multi-county industrial park involve specific subsidies to Boeing

8.2.8.8.1 Introduction

8.909. In paragraph 24 of its panel request, the European Union identifies as one of the Project Gemini-related subsidies presently benefiting Boeing:

> The provision of corporate income tax credits, as provided for in S.C. Code § 12-6-3360(E)(1), by virtue of designating the Boeing site in North Charleston as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.

8.910. In paragraph 25 of its panel request, the European Union identifies as one of the Project Emerald-related subsidies presently benefiting Boeing:

> The provision of corporate income tax credits, as provided for in S.C. Code § 12-6-3360(E)(1), by virtue of designating the Project Emerald site at Charleston International Airport as part of a business/industrial park jointly established and developed by Charleston County and Colleton County, South Carolina.

8.911. The European Union argues that these above-referenced tax credits reduce Boeing's South Carolina income tax liability, and thereby constitute specific subsidies to Boeing within the meaning of Articles 1 and 2 of the SCM Agreement.

8.912. The South Carolina Income Tax Act, contained in Title 12, chapter 6 of the South Carolina Code, provides for various types of corporate income tax credits, including a "job tax credit" for new full-time jobs created in the state pursuant to section 12-6-3360(C) of the South Carolina Code. In addition, the Act provides that "{t}axpayers which qualify for the job tax credit provided in subsection C and which are located in a business or industrial park jointly established and developed by a group of counties pursuant to Section 13 of Article VIII of the Constitution of this State are allowed an additional one thousand dollar credit for each new full-time job created".[2346] These *additional* tax credits (the MCIP job tax credits) are at issue in the present proceeding.

8.913. Section 13 of Article VIII of the South Carolina Constitution provides that "{c}ounties may jointly develop an industrial or business park with other counties within the geographical boundaries of one or more of the member counties". Pursuant to this authority, Charleston County and Colleton County entered into an Agreement for Development for a Joint County Industrial Park in September 1995.[2347] This original Agreement was amended from time to time to add or remove property to or from the Charleston-Colleton Multi-County Industrial Park (Charleston-Colleton MCIP). In December 2006, Charleston County included *inter alia* the Project Emerald-portion of the Project Site within the limits of the Charleston-Colleton MCIP[2348], as Charleston County had undertaken to do in an Inducement and Millage Rate Agreement concluded on 21 December 2004 as part of Project Emerald.[2349] In February 2010, Charleston County included the Project Gemini-

[2346] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-3360(E)(1).

[2347] See United States' first written submission, para. 572.

[2348] Charleston County Council Ordinance 1475, 5 December 2006, An Ordinance to amend Ordinance No. 972, adopted September 19, amending the agreement for development of a joint county industrial park effective as of September 1, 1995, by and between Charleston County, South Carolina and Colleton County, South Carolina, providing for the development of a jointly owned and operated industrial/business park so as to (1) revise and clarify certain terms of the agreement, (2) include additional property in Charleston County as part of the joint county industrial park, (3) remove certain property in Charleston County from the industrial park, (4) and other matters relating thereto (Charleston County Council Ordinance 1475 (5 December 2006), (Exhibit EU-555)).

[2349] Section 2.06 of that Agreement provides: "{t}he County council covenant to take all action necessary to expand the park pursuant to the terms of the Park Agreement in order that the Site will be located entirely within the Park. The County will use its good faith best efforts to ensure that the Site remains a part of the Park as long as is necessary to enable the Company to claim the maximum jobs tax credits for each job created by the Company at the Project". (Inducement and Millage Rate Agreement between Charleston County and Project Emerald (21 December 2004), (Exhibit EU-553), p. 4).

portion of the Project Site within the limits of the Charleston-Colleton MCIP[2350], as Charleston County had undertaken to do in the Boeing FILOT Agreement concluded on 2 December 2010 as part of Project Gemini.[2351]

8.2.8.8.2 Main arguments of the parties

8.914. The European Union argues that the additional job tax credits[2352], provided to Boeing by virtue of Charleston County's designation of the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton MCIP, constitute specific subsidies to Boeing within the meaning of Articles 1 and 2 of the SCM Agreement.[2353] A comparison of the tax treatment of jobs created at Boeing's facilities with the tax treatment of jobs created at facilities outside of an MCIP demonstrates that the tax treatment granted to Boeing by means of the challenged MCIP job tax credits represents the foregoing of government revenue otherwise due.[2354] The reductions of Boeing's state income tax liability through the MCIP job tax credits confer benefits within the meaning of Article 1.1(b)[2355], and are specific within the meaning of Articles 2.1(a) and 2.1(c). Indeed, the Charleston County Ordinances designating the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton MCIP explicitly limit access to the challenged MCIP job tax credits to certain enterprises. In addition, Charleston County has designated the premises of only a limited number of enterprises as within a multi-county industrial park, and the manner in which the county has exercised its discretion further indicates specificity. Finally, the MCIP job tax credits are regionally specific, since they are limited to certain enterprises located within a designated geographic region within the jurisdiction of the granting authority.[2356]

8.915. The United States argues that the European Union has failed to establish a *prima facie* case that the MCIP job tax credits are financial contributions or confer benefits: since the European Union claims that Boeing will have no South Carolina taxable income as a result of the Income Allocation and Apportionment Agreement, the MCIP job tax credits will offset nothing.[2357] Notwithstanding the above, the MCIP job tax credits are not specific within the meaning of Article 2 since they are broadly available and widely used. Indeed, neither the State of South Carolina nor the South Carolina Income Tax Act explicitly limits access to job tax credits to certain enterprises. Furthermore, MCIP designations are commonplace in the State of South Carolina, and

[2350] Charleston County Council Ordinance 1626 (2 February 2010), An Ordinance to further amend the agreement for development of a joint county industrial park, by and between Charleston County, South Carolina and Colleton County, South Carolina, providing for the development of a jointly owned and operated industrial/business park, so as to include additional property in Charleston County as part of the joint county industrial park (Charleston County Ordinance 1626 (2 February 2010), (Exhibit EU-516), section 1). This Ordinance amended the Original Agreement so as to expand the Park premises located within Charleston County by including a parcel "owned by the Charleston County Aviation Authority and leased to The Boeing Company". This parcel, also referred to in the Ordinance as the "Boeing Tract", is described in detail in Exhibit A to the Ordinance. The Ordinance also provides for the distribution of revenues generated by the Park through the payment of fees in lieu of *ad valorem* property taxes. See Charleston County Ordinance 1626 (2 February 2010), (Exhibit EU-516), section 2.

[2351] Section 5.3 of the Boeing FILOT Agreement provides that "{t}he County will designate the Project as part of a Multi-County Park pursuant to the Multi-County Park Act and will, to the extent permitted by law, use its best, reasonable efforts to maintain such designation on terms which provide any additional jobs tax credits afforded by the laws of the State for projects located within multi-county industrial or business parks for all jobs created by the Company during the Investment Period and which facilitate the Special Source credit arrangements set forth herein". (Boeing FILOT Agreement, (Exhibit EU-470), section 5.3).

[2352] The European Union does not challenge the standard job tax credits provided under S.C. Code section 12-6-3360(c). (See European Union's first written submission, para. 628).

[2353] With respect to Project Gemini-related job tax credits, see European Union's first written submission, paras. 627-641; and second written submission, paras. 675-682. With respect to Project Emerald-related additional tax credits, see European Union's first written submission, paras. 709-720; and second written submission, paras. 733-736.

[2354] European Union's first written submission, paras. 631-634 and 712-714; second written submission, paras. 675-677, 733, and 734.

[2355] European Union's first written submission, paras. 636, 637, 715, and 716 (referring to Panel Report, *US – FSC*, para. 7.103).

[2356] European Union's first written submission, paras. 638-641 and 717-720; second written submission, paras. 679-682, 735, and 736.

[2357] United States' first written submission, paras. 571-574 and 607; second written submission, para. 606.

they are provided to a number of enterprises located within any number of different MCIPs throughout the state.[2358]

8.2.8.8.3 Evaluation by the Panel

8.916. In this Section of the Report, the Panel evaluates the European Union's claims that the MCIP job tax credits, granted to Boeing by virtue of the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton MCIP, are specific subsidies to Boeing within the meaning of Articles 1 and 2 of the SCM Agreement.

8.2.8.8.3.1 Whether there is a financial contribution

8.917. The first question before the Panel is whether the MCIP job tax credits, granted to Boeing by virtue of the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton MCIP, constitute financial contributions through the foregoing of government revenue that is otherwise due, within the meaning of Article 1.1(a)(1)(ii).

8.918. The European Union argues that Ordinances 1626 and 1475, relating to Project Gemini and Project Emerald respectively, involve financial contributions by a government within the meaning of Article 1.1(a)(1)(ii), namely the foregoing of government revenue otherwise due. The European Union refers to the three-step approach to analysing claims under Article 1.1(a)(1)(ii) set out by the Appellate Body in the original proceeding.[2359] First, the tax treatment applicable to Boeing's corporate income in South Carolina is Boeing's eligibility for MCIP job tax credits for the jobs created through the establishment of the 787 final assembly and delivery facility, and for the jobs related to the 787 fuselage fabrication and integration complex.[2360] Second, the benchmark tax treatment of comparable taxable activity of comparable taxpayers is the treatment afforded to identical taxpayers carrying out identical activities outside of an MCIP.[2361] Third, a comparison of this benchmark tax treatment with the treatment received by Boeing, in light of the reasons for the establishment of the MCIP job tax credits and the designation of the Project Site as part of an MCIP, clearly shows that the treatment accorded to Boeing amounts to the foregoing of government revenue otherwise due.[2362] The European Union estimates the amount of the financial contribution as USD 19 million between 2011 and 2016, and at USD 3.8 million per year from 2012 to 2015.[2363]

8.919. The United States' arguments focus on an alleged inconsistency between the European Union's arguments on the challenged MCIP job tax credits and another South Carolina measure; the Income Allocation and Apportionment Agreement for state corporate income tax. The United States notes that the European Union asserts that, as a result of the special methodology for apportioning Boeing's income provided for in the Income Allocation and Apportionment Agreement, Boeing will have no South Carolina taxable income, and thus no income tax liability in South Carolina. Since the MCIP job tax credits are non-refundable, may not be sold or transferred, and may only be used to offset South Carolina income tax, the European Union's own arguments that the Income Allocation and Apportionment Agreement is a subsidy to Boeing imply that the actual value of the MCIP job tax credits to Boeing is zero, and that there is no financial contribution or benefit to Boeing.[2364]

8.920. However, as pointed out by the European Union, the United States has previously indicated that Boeing **[***]**.[2365] In its request for information pursuant to Article 13 of the DSU, the Panel asked the United States to "indicate the annual value to Boeing of the additional USD1000-per-job portion of a new job tax credit for locating within a multi-county industrial park". The United States responded that "the annual value of such tax credits for jobs generated by Boeing (i.e. exclusive of

[2358] United States' first written submission, paras. 638-643; second written submission, paras. 605-612.
[2359] European Union's first written submission, para. 632 (referring to para. 594, in turn referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814).
[2360] European Union's first written submission, paras. 632 and 713.
[2361] European Union's first written submission, paras. 633 and 713.
[2362] European Union's first written submission, para. 634.
[2363] European Union's first written submission, para. 635.
[2364] United States' first written submission, paras. 574 and 607.
[2365] European Union's second written submission, paras. 676 and 677.

subsidiaries) is as follows **[***]**".[2366] The information provided by the United States in response to the Panel's Article 13 request, indicating that **[***]**, is at odds with the contention that the value to Boeing of the MCIP job tax credits is zero. The United States does not advance any other argument to refute the European Union's contention that the MCIP job tax credits granted to Boeing by virtue of the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the Charleston-Colleton MCIP involve financial contributions to Boeing. **We therefore find that the MCIP job tax credits involve a financial contribution in the form of the foregoing of revenue otherwise due within the meaning of Article 1.1(a)(1)(ii)**.

8.2.8.8.3.2 Whether there is a benefit

8.921. The United States does not advance arguments as to whether the MCIP job tax credits confer a benefit, other than its argument concerning the alleged inconsistency between the European Union's position that: (a) the Income Allocation and Apportionment Agreement is a subsidy because it reduces Boeing's income tax liability in South Carolina to zero; and (b) the MCIP job tax credits are a subsidy because they reduce Boeing's South Carolina income tax. We have already rejected this argument of the United States in the context of our determination of whether the MCIP job tax credits involve a financial contribution, owing to the information provided by the United States' response to our request for information pursuant to Article 13 of the DSU **[***]**. Having found that the MCIP job tax credits involve a financial contribution to Boeing in the form of the foregoing of revenue otherwise due, we conclude that the financial contribution confers a benefit, in as much as the MCIP job tax credits mean that Boeing pays less state income tax than would otherwise be due. **We therefore find that the MCIP job tax credits confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.[2367]**

8.2.8.8.3.3 Whether the subsidy is specific

8.922. With respect to whether the subsidy provided to Boeing as a result of the MCIP job tax credits is specific, the issues raised by the disagreement between the parties relate to Articles 2.1(a), 2.1(c), and 2.2 of the SCM Agreement. The parties first disagree on whether the MCIP job tax credits are specific within the meaning of Article 2.1(a). In particular, the parties disagree on the level at which the specificity analysis should be carried out.

8.923. The European Union argues that the analysis of specificity should be carried out at the level of Charleston County. While MCIP job tax credits are available to enterprises satisfying the minimum requirements set out in the relevant provisions under South Carolina tax law, the State of South Carolina effectively delegates the role of the granting authority to the counties, since the statutory minimum requirements are that the location of an enterprise's facility be designated as being within an MCIP by two or more counties.[2368] The European Union argues that the challenged MCIP job tax credits are *de jure* specific within the meaning of Article 2.1(a) since: (a) the area designated as part of the Charleston-Colleton MCIP by Charleston County Ordinance 1626 was expressly identified as a parcel "leased by The Boeing Company"[2369]; and (b) the area designated as part of the Charleston-Colleton MCIP by Charleston County Ordinance 1475 was expressly identified by reference to Project Emerald, as well as three unrelated companies located elsewhere, thereby explicitly limiting access to each subsidy to certain enterprises.[2370]

8.924. The United States considers that specificity should be assessed at the level of the State of South Carolina, and that the European Union's focus on county ordinances as a basis for its arguments under Article 2.1(a) is misplaced. According to the United States, the European has failed to demonstrate how either the proper granting authority (i.e. the State of South Carolina) or the legislation pursuant to which the State acts in providing the additional jobs tax credit (i.e. section 12-6-3360(E)(1) of the South Carolina Code) explicitly limits access to MCIP job tax credits to certain enterprises within the meaning of Article 2.1(a).[2371] The United States argues that the text of the relevant legislation makes it clear that the tax treatment available under that provision

[2366] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, (Exhibit USA-198) (BCI), para. 158.
[2367] Also see para. 8.885 above on tax reductions conferring a benefit.
[2368] European Union's second written submission, para. 680.
[2369] European Union's first written submission, para. 638; second written submission, para. 679.
[2370] European Union's first written submission, para. 717.
[2371] United States' first written submission, paras. 640 and 641.

is available to all enterprises that satisfy the minimum requirements set out in that provision and that otherwise qualify for the standard job tax credit.[2372] The role of the counties is a minor one given that MCIP designation is commonplace in South Carolina, and MCIP status is essentially available to any substantial business that requests that its property be included in an MCIP.[2373]

8.925. For the reasons detailed below, we consider that the European Union has failed to establish that the subsidy provided through the MCIP job tax credits is specific within the meaning of Article 2.1(a). Although Boeing receives the additional MCIP job tax credits as a result of the inclusion of the Project Gemini and Project Emerald portions of the Project Site in the Charleston-Colleton MCIP by virtue of Ordinances 1626 and 1475 respectively, these ordinances do not provide the challenged MCIP job tax credits. Rather the MCIP job tax credits are provided by the State of South Carolina in application of section 12-6-3360(E)(1) of the South Carolina Income Tax Act. An assessment of whether the subsidy provided through the MCIP job tax credits is specific within the meaning of Article 2.1(a) therefore requires a state-level analysis of whether the relevant provision of the Act explicitly limits the availability of the MCIP job tax credits to certain enterprises. Pursuant to section 12-6-3360 of the South Carolina Code, the additional MCIP job tax credits are available to taxpayers that: (a) qualify for the standard job tax credits; and (b) are located in a business or industrial park jointly established and developed by a group of Counties pursuant to section 13 of Article VIII of the South Carolina Constitution. There is nothing in this provision to suggest that any enterprise meeting these conditions could be denied access to the additional MCIP job tax credits. In addition, the two conditions (satisfaction of requirements for the standard job tax credit and location in a multi-county industrial park) do not inherently limit the availability of the additional MCIP job tax credits to certain enterprises. The eligibility for the standard job tax credit depends on criteria relating to employment levels.[2374] As to the requirement that the taxpayer be located in a multi-county industrial park, there is nothing in the evidence before the Panel to suggest that South Carolina or the legislation of South Carolina limits the possibility to establish multi-country industrial parks or to include business property in a multi-county industrial park to certain enterprises.[2375] For these reasons we find that the European Union has failed to establish that the subsidy provided through the MCIP job tax credits is specific within the meaning of Article 2.1(a).

8.926. Second, the parties disagree on whether the MCIP job tax credits are specific within the meaning of Article 2.1(c). Consistent with its position that the analysis of specificity should be undertaken at the county level, the European Union argues that the MCIP job tax credits are *de facto* specific within the meaning of Article 2.1(c) since, to the best of the European Union's knowledge, Charleston County has only designated the premises of a limited number of enterprises as being within a multi-county industrial park.[2376] In addition, "the manner in which Charleston County has exercised its discretion by amending the area for the purpose of providing Boeing with MCIP job tax credits indicates that the subsidy is specific to Boeing and a limited number of other beneficiaries".[2377]

8.927. The United States argues that the European Union provides no support for its assertion that Charleston County has only designated the premises of a limited number of enterprises as being within a multi-county industrial park. Moreover, even if this assertion were true, the United States argues that it would say nothing about the number of enterprises benefiting from MCIP job tax credits in other multi-county industrial parks elsewhere in South Carolina, which is the correct level at which to undertake the analysis of specificity. According to the United States, MCIP designations are in fact so commonplace in South Carolina that they are the rule, not the

[2372] United States' first written submission, para. 641; second written submission, para. 609.

[2373] United States' second written submission, para. 610.

[2374] See South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-3360(C)(1).

[2375] Whether the very fact that the MCIP job tax credits are available only to taxpayers located in multi-county industrial parks makes the measure *de jure* specific is discussed below. See paras. 8.929-8.931 below.

[2376] European Union's first written submission, para. 718.

[2377] European Union's first written submission, paras. 639 and 718 (fn omitted). The European Union considers that the United States' response to the Panel's request for a list of Charleston county ordinances amending MCIP designations for identified projects or companies amounts to a failure to cooperate. It requests the Panel to draw appropriate inferences and to find that Project Gemini and Project Emerald are "the only identified projects or companies for which Charleston County has amended an MCIP designation". (European Union's second written submission, fn 1142).

exception.[2378] The United States also argues that the European Union fails to provide any analysis or explanation to support its assertion that the manner in which Charleston County has exercised discretion indicates that the subsidy is specific to Boeing, and that in any event the European Union wrongly considers Charleston County as the granting authority.[2379]

8.928. We conclude that the European Union has failed to establish that the subsidy provided through the MCIP job tax credits is specific within the meaning of Article 2.1(c). First, as explained above, the European Union focuses on the actions of Charleston County when the proper granting authority is instead the State of South Carolina. Second, the European Union's argument regarding the exercise of discretion is inconsistent with the text of Article 2.1(c) insofar as it does not provide any evidence of instances in which applications for the receipt of the subsidy have been rejected.[2380]

8.929. The third specificity issue before the Panel is whether the MCIP job tax credits are "limited to certain enterprises located within a designated geographical region within the jurisdiction of the granting authority" and thereby specific within the meaning of Article 2.2. The European Union argues that the MCIP job tax credits provided to Boeing are specific within the meaning of Article 2.2 because they are "limited to certain enterprises located within a designated geographic region within the jurisdiction of the granting authority". The European Union considers that the Charleston-Colleton MCIP, like other multi-county industrial parks in South Carolina, is a particular geographic region designated by two counties, within the jurisdiction of the State of South Carolina, the granting authority.[2381] The European Union argues that, contrary to the United States' assertions, Article 2.2 does not require a *contiguous* geographic region.[2382] Furthermore, the number of enterprises located within a designated geographic region is irrelevant to an analysis of specificity under Article 2.2.[2383]

8.930. The United States argues that the MCIP job tax credits are not specific within the meaning of Article 2.2 because they are not "limited to certain enterprises located within a designated geographic region". Rather they are provided to a number of enterprises located within any number of different multi-county industrial parks throughout the State of South Carolina. The United States asserts that multi-county industrial parks are pervasive in South Carolina, and are available to any business that requests the inclusion of its property within a multi-county industrial park.[2384] Since counties can freely add to or subtract property from multi-county industrial parks at any time, a multi-county industrial park is not really a "designated" region.[2385]

8.931. We conclude that the European Union has not established that the challenged MCIP job tax credits are specific within the meaning of Article 2.2. The panel in *US – Anti-Dumping and Countervailing Duties (China)* considered the question of whether "a designated geographical region" in the sense of Article 2.2 must necessarily have some sort of formal administrative or economic identity, or whether any identified tract of land within the territory of a granting authority can be a "designated geographical region" for the purposes of Article 2.2. The panel concluded that a designated geographical region is any identified tract of land within the jurisdiction of the granting authority.[2386] The findings of the panels in *US – Anti-Dumping and Countervailing Duties (China)* and *US – Countervailing Measures (China)* seem to imply that those panels considered that an industrial park or economic development zone can amount to "a designated geographical region".[2387] While it is true that MCIP job tax credits are available only to

[2378] United States' first written submission, para. 643.
[2379] United States' first written submission, para. 642.
[2380] In light of this finding, we do not consider it necessary to address the European Union's request for the Panel to "draw appropriate inferences". (See European Union's second written submission, fn 1142). Also see United States' response to Panel question No. 149, paras. 17-19; and Charleston County Ordinances, (Exhibit USA-555).
[2381] European Union's first written submission, paras. 640 and 719.
[2382] European Union's second written submission, para. 681.
[2383] European Union's second written submission, para. 682.
[2384] United States' first written submission, para. 643.
[2385] United States' second written submission, para. 612.
[2386] Panel Report, *US – Anti-Dumping and Countervailing Duties (China)*, paras. 9.143 and 9.144.
[2387] See Panel Reports, *US – Anti-Dumping and Countervailing Duties (China)*, paras. 9.159 and 9.162; and *US – Countervailing Measures (China)*, para. 7.352. We note that the Appellate Body recently addressed several aspects of the interpretation of Article 2.2 in its Report in *US – Washing Machines*. Specifically, the Appellate Body agreed with the panel in that dispute that:

taxpayers within a multi-county industrial park, it does not follow that the measure is "limited" to certain enterprises located within a designated region. If a subsidy is provided only to enterprises located within a region that has a fixed geographic identity, such a subsidy is "limited" to certain enterprises within that region because it is not possible for enterprises not located within that "designated region" to have access to the measure. In such a situation, the location of an enterprise is the determining eligibility factor for the subsidy. In the case at hand, however, this reasoning does not apply. The location of an enterprise at any particular place in South Carolina does not prevent it from receiving MCIP job tax credits, because the MCIP designation itself is readily available upon request to any company. The availability of the MCIP designation upon request means that, while the MCIP job tax credits are available to enterprises located within a multi-county industrial park and not available to enterprises not located within such an industrial park, this cannot be meaningfully considered to amount to a limitation under Article 2.2. **We therefore find that the European Union has failed to establish that the subsidy provided through the MCIP job tax credits is specific within the meaning of Article 2.2 of the SCM Agreement**.

8.932. Finally, we note that the European Union also argues that the subsidy provided to Boeing through the MCIP job tax credits is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.8.8.4 Conclusion

8.933. In light of our findings above with respect to the corporate income tax credits arising from the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the same multi-county industrial park, we conclude that the European Union has failed to establish that the subsidy is specific within the meaning of Articles 1 and 2 of the SCM Agreement.

8.2.8.9 Whether reductions of state corporate income taxes through an income allocation and apportionment agreement are a specific subsidy to Boeing

8.2.8.9.1 Introduction

8.934. In paragraph 24 of its panel request, the European Union identifies as one of the Project Gemini-related subsidies presently benefiting Boeing:

> Reductions of state corporate income taxes through an income allocation and apportionment agreement, entered into pursuant to S.C. Code § 12-6-2320(B), as amended by Section 1 of H3130, thereby providing a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.

8.935. The European Union claims that the State of South Carolina reduces Boeing's state corporate income taxes by making Boeing eligible for, and providing Boeing with, an income allocation and apportionment agreement that excludes significant portions of Boeing's South Carolina income from the calculation of its tax liability.[2388] According to the European Union, the effect of the income allocation and apportionment agreement is to exclude from Boeing's South

> (i) the term "certain enterprises" in Article 2.2 of the SCM Agreement is not limited to entities with legal personality, but also encompasses sub-units or constituent parts of a company – including, but not limited to, its branch offices and the facilities in which it conducts manufacturing operations – that may or may not have distinct legal personality; (ii) the "designation" of a region for purposes of Article 2.2 need not be affirmative or explicit, but may also be carried out by exclusion or implication, provided that the region in question is clearly discernible from the text, design, structure, and operation of the subsidy at issue; and (iii) the concept of "geographical region" in Article 2.2 does not depend on the territorial size of the area covered by a subsidy.

(Appellate Body Report, *US – Washing Machines*, para. 5.240)

[2388] European Union's first written submission, para. 607.

Carolina-based income the proceeds from sales of aircraft that would otherwise be treated as sales *within* South Carolina and subject to South Carolina corporate income tax, thereby reducing the amount of South Carolina corporate income tax that Boeing must pay.

8.936. "Apportionment" refers to the process of determining the portion of corporate income earned in multiple jurisdictions that is properly attributable to, and thus subject to taxation in, a particular jurisdiction. In South Carolina, business income of manufacturers and retailers is apportioned by multiplying the taxpayer's net income (after certain allocations not relevant to the present case) by a "sales factor"; a fraction in which the numerator is the total sales of the taxpayer in the State of South Carolina during the taxable year, and the denominator is the total sales of the taxpayer everywhere during the taxable year.[2389] The amount of taxable income attributed to South Carolina is multiplied by South Carolina's corporate income tax rate of 5%.[2390]

8.937. Section 12-6-2320(B) of the South Carolina Code authorizes the allocation and apportionment of a taxpayer's income on alternative bases for periods of up to five years or ten years, by agreement with the taxpayer, for taxpayers planning new or expanded facilities in South Carolina. H3130 amended section 12-6-2320(B) of the South Carolina Code to set forth certain conditions that must be satisfied by a taxpayer to qualify for an income allocation and apportionment agreement of up to ten years. These conditions include:

a. the taxpayer is planning a new facility in the state and invests at least USD 750 million in real or personal property or both in a single county in the state and creates at least 3,800 full-time new jobs within seven years from the date on which the taxpayer requests an agreement with an alternative allocation and apportionment method[2391];

b. the South Carolina Coordinating Council for Economic Development certifies that the new facility will have a significant beneficial economic effect on the region for which it is planned and that its benefits to the public exceed its costs to the public.[2392]

8.938. Under the amendment to South Carolina's Income Tax Act effected by H3130, the taxpayer may begin operating under an income allocation and apportionment agreement beginning with the tax year in which the agreement is executed. If the taxpayer fails to meet the investment and employment requirements set forth above, the taxpayer will be assessed any tax due as a result of that failure. For any subsequent year that the taxpayer fails to maintain 3,800 full-time, new jobs, the South Carolina Department of Revenue may assess any tax due for that year.[2393]

8.939. On 10 August 2010, Boeing made an application for "Qualification of Income Apportionment Incentive" with the South Carolina Coordinating Council for Economic Development in respect of "construction of an aerospace manufacturing facility in Charleston County, City of North Charleston with 3,800 jobs and a capital investment of USD 750 million".[2394] On 8 September 2010, the South Carolina Coordinating Council for Economic Development certified Boeing's eligibility to enter into negotiations with the South Carolina Department of Revenue to receive the "Income Apportionment Incentive". It also certified that the facility described in

[2389] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), sections 12-6-2252 and 12-6-2280.

[2390] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-530. South Carolina taxable income includes not only business income subject to apportionment under *S.C. Code*, section 12-6-2252, but also any income that is allocated to South Carolina pursuant to sections 12-6-2220 and 12-6-2230.

[2391] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), section 1 (amending South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), 12-6-2320 to add (B)(3)(a)(ii) and (b)(3)(b)).

[2392] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-2320(B)(3)(c).

[2393] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-2320(B)(4).

[2394] Boeing, *Application for Qualification of Income Apportionment Incentive*, (10 August 2010), (Exhibit EU-12).

Boeing's application would have a significant beneficial economic effect on the region for which the project is planned, and that the benefits to the public exceed the costs to the public.[2395]

8.940. Boeing and the South Carolina Department of Revenue entered into a Special Allocation and Apportionment Agreement as of 1 January 2012 (Income Allocation and Apportionment Agreement).[2396] Under the Income Allocation and Apportionment Agreement, Boeing and the South Carolina Department of Revenue agree that **[*****[2397] *****[2398]]**.

8.941. **[*****]**.

8.2.8.9.2 Main arguments of the parties

8.942. The European Union argues that the Income Allocation and Apportionment Agreement involves a financial contribution to Boeing in the form of the foregoing of government revenue otherwise due, within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement, which confers a benefit, and is specific.

8.943. The European Union considers that, under the Income Allocation and Apportionment Agreement, Boeing's sales of aircraft that are received by a purchaser in South Carolina are *deemed not* to be "sales in this State" when the sales are to: (a) an airline or other customer with a principal place of business outside of the United States; (b) a leasing company for the ultimate use of an operator with a principal place of business outside of the United States; (c) a special entity established for the purpose of U.S. Export-Import Bank financing of sales to operators having their principal place of business outside of the United States; or (d) a separate Boeing sales company for the ultimate use of an operator with a principal place of business outside of the United States.[2399] According to the European Union, this tax treatment differs from the benchmark tax treatment of comparable income of comparable taxpayers, namely, the single factor apportionment method set forth in South Carolina Code sections 12-6-2252 and 12-6-2280, under which the foregoing transactions would be considered sales *within* the State of South Carolina.[2400]

8.944. The European Union argues therefore that the effect of the Income Allocation and Apportionment Agreement is to lower the numerator of Boeing's "sales factor" (i.e. Boeing's sales allocated to South Carolina), without changing the denominator (i.e. Boeing's total sales everywhere), thereby reducing the sales factor. Accordingly, when Boeing's total income is multiplied by the lower sales factor, the result is a reduction in Boeing's taxable income, and consequently, a reduction in the amount of South Carolina corporate income tax that Boeing must pay.[2401] The Income Allocation and Apportionment Agreement with Boeing therefore results in a financial contribution by a government; namely, the foregoing of government revenue otherwise due within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.[2402]

[2395] Letter from A. D. Young, Executive Director, South Carolina Coordinating Council for Economic Development to Boeing Company, dated 8 September 2010. (Boeing, *Application for Qualification of Income Apportionment Incentive*, (10 August 2010), (Exhibit EU-12), pdf p. 10).

[2396] Special Allocation and Apportionment Agreement between South Carolina Department of Revenue and The Boeing Company, Inc. (1 January 2012) (Income Allocation and Apportionment Agreement) (formerly Exhibit US-13-294), (Exhibit EU-510) (BCI).

[2397] Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), **[*****]**.

[2398] Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), section 3.1.

[2399] European Union's first written submission, para. 611.

[2400] European Union's first written submission, para. 618:

> Under this apportionment methodology, transactions that would otherwise be considered sales in South Carolina (and therefore taxable in South Carolina) are excluded from Boeing's taxable income on the basis of the principal place of business of the ultimate operator – a concept otherwise wholly absent from South Carolina's laws on apportionment of income – thus artificially reducing the amount Boeing pays in state income taxes.

[2401] European Union's first written submission, para. 612.

[2402] European Union's first written submission, para. 617.

8.945. The European Union argues that the Income Allocation and Apportionment Agreement also confers a benefit on Boeing's LCA division within the meaning of Article 1.1(b), with the entirety of the financial contribution representing the amount of the benefit.[2403]

8.946. The European Union additionally argues that the Income Allocation and Apportionment Agreement is specific within the meaning of Articles 2.1(a) and 2.1(c) of the SCM Agreement. With respect to *de jure* specificity under Article 2.1(a), the European Union asserts that the statutory provision establishing Boeing's eligibility for an alternative apportionment method was enacted as part of H3130, the Boeing incentive legislation. Additionally, the provision is subject to investment and employment conditions which make it applicable solely to Boeing.[2404] Finally, the Income Allocation and Apportionment Agreement was entered into with Boeing alone, and the Special Apportionment Method is applicable only to Boeing.[2405] As to *de facto* specificity within the meaning of Article 2.1(c), the subsidy is used by a limited number of taxpayers. To the best of the European Union's knowledge, Boeing is the only recipient of a ten-year allocation and apportionment agreement. Boeing is necessarily also the predominant user as well as a disproportionate beneficiary, receiving 100% of the subsidy.[2406] Furthermore, the European Union points to the "untrammelled discretion" exercised by the granting authority in respect of allocation and apportionment agreements, noting that a taxpayer applying for an alternative apportionment methodology is allowed to propose its own methodology. According to the European Union, Boeing was approved for a "highly customized methodology, specifically tailored to Boeing's specific business practices and commercial interests, and which bears no relation to the statutory allocation method or any legitimate public interests".[2407] The European Union also argues that the Income Allocation and Apportionment Agreement is a prohibited subsidy under Articles 3.1(a) and 3.2, footnote 4 and annex I, Item (e) of the SCM Agreement because, pursuant to the Special Apportionment Method, sales of Boeing aircraft delivered in South Carolina are deemed not to be South Carolina sales on condition that they are destined for export markets outside the United States.[2408]

8.947. The United States argues that the European Union has failed to establish that the Income Allocation and Apportionment Agreement involves a financial contribution or confers a benefit. Indeed, the United States considers that the European Union's arguments that the Income Allocation and Apportionment Agreement involves a subsidy are based on a misunderstanding of South Carolina's income tax law.[2409]

8.948. The United States considers that the European Union incorrectly interprets "sales in this State" in South Carolina Code section 12-6-2280, which represent the numerator of the sales factor for purposes of the single factor apportionment method set forth in South Carolina Code section 12-6-2252, as including sales in South Carolina to airlines with a principal place of business outside the United States. It is on this basis that the European Union argues that the Special Apportionment Method set forth in the Income Allocation and Apportionment Agreement alters the treatment of "sales in this State" for purposes of calculating the sales factor, by excluding such sales from the numerator, thereby reducing Boeing's South Carolina income tax liability. According to the United States, however, "sales in this State" is defined in South Carolina Code section 12-6-2280(B) as including sales of goods, merchandise or property that are "received by a purchaser in this State". South Carolina Code section 12-6-2280(B) further provides that the place at which the goods are received by a purchaser is the place where the goods are received by the purchaser "after all transportation is completed". Where receipt occurs outside the United States, as is the case for sales to airlines with a principal place of business outside the United States, there will be no "sales in this State" according to the single factor apportionment method.[2410]

8.949. The United States also rejects the European Union's arguments that the Income Allocation and Apportionment Agreement is specific. The United States notes that income allocation and

[2403] European Union's first written submission, paras. 622 and 623.
[2404] European Union's first written submission, para. 624.
[2405] European Union's first written submission, para. 624; second written submission, para. 668 and fn 1127.
[2406] European Union's first written submission, para. 625.
[2407] European Union's first written submission, para. 625.
[2408] European Union's first written submission, paras. 749 and 750; response to Panel question No. 36, paras. 202-204.
[2409] United States' first written submission, para. 603.
[2410] United States' first written submission, para. 604.

apportionment agreements are part of a widely available effort by South Carolina to ensure that the apportionment of a taxpayer's income represents the extent of the taxpayer's business activity in the state, as well as to provide an incentive to companies that are planning new or expanded facilities in South Carolina.[2411] The European Union incorrectly limits its specificity analysis to the Income Allocation and Apportionment Agreement, without addressing the question of whether the legislation or granting authority imposes limitations on access to the subsidy.[2412] Even assuming *arguendo* that the specific provision authorizing the use of the ten-year allocation and apportionment agreement in H3130 were the proper focus of the analysis, the European Union has failed to articulate how the provision contains an express limitation on access to certain enterprises.[2413]

8.950. The United States also considers that the European Union has failed to establish that the measure is *de facto* specific under Article 2.1(c). According to the United States, approximately 40 projects have been approved for special allocation and apportionment methods since 1996. Moreover, South Carolina Code section 12-6-2320(B) sets forth objective criteria that must be satisfied before an income allocation and apportionment agreement can be entered into. The European Union has not questioned that those criteria were satisfied in Boeing's case. Nor has it explained how the manner in which discretion has been exercised by the granting authority in the decision to grant the subsidy indicates that the measure is specific.[2414] The United States argues that the European Union's claims under Article 3 of the SCM Agreement with respect to the Income Allocation and Apportionment Agreement also fail, owing to its misunderstanding of South Carolina income tax law and consequent failure to establish a *prima facie* case that the Income Allocation and Apportionment Agreement confers a specific subsidy to Boeing, let alone a subsidy that is contingent on export performance.[2415]

8.2.8.9.3 Evaluation by the Panel

8.2.8.9.3.1 Whether there is a financial contribution

8.951. We here examine the European Union's claim that the special sourcing rules provided for in the Income Allocation and Apportionment Agreement constitute a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement. We begin by determining whether the European Union has demonstrated that the Income Allocation and Apportionment Agreement, and more specifically, **[***]**, involves a foregoing of government revenue otherwise due, and thus is a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.

8.952. The tax treatment at issue involves the method by which South Carolina assesses Boeing's liability for state corporate income taxes. As previously explained, when a taxpayer has taxable business income in multiple jurisdictions, taxing jurisdictions may apply various apportionment methodologies to determine how much of the taxpayer's total income is properly taxable by that taxing jurisdiction. South Carolina mainly applies a single factor; namely sales, to apportion the business income of manufacturers and retailers for purposes of assessing liability to South Carolina income taxes. Thus, under section 12-6-2252 of the South Carolina Code, manufacturers and retailers in South Carolina are assessed income tax on their income "apportioned" to the State of South Carolina, based on their net income (after certain allocations) multiplied by a ratio representing the proportion of their sales in South Carolina, compared to their overall total sales (the sales factor).[2416] The "sales factor" is more precisely defined in South Carolina Code section 12-6-2280:

> (A) The sales factor is a fraction in which the numerator is the total sales of the taxpayer in this State during the taxable year and the denominator is the total sales of the taxpayer everywhere during the taxable year.

[2411] United States' first written submission, para. 644.
[2412] United States' first written submission, para. 645.
[2413] United States' first written submission, para. 645.
[2414] United States' first written submission, para. 646.
[2415] United States' first written submission, para. 677.
[2416] South Carolina Income Tax Act, *S.C. Code*, Title 12, chapter 6, (Exhibit EU-509), section 12-6-2252(A).

> (B) The term "sales in this State" includes sales of goods, merchandise, or property received by a purchaser in this State. The place where goods are received by the purchaser after all transportation is completed is considered the place at which the goods are received by the purchaser. Direct delivery into this State by the taxpayer to a person designated by a purchaser constitutes delivery to the purchaser in this State.

8.953. Under the Income Allocation and Apportionment Agreement, **[***]**, which is the focus of the European Union's challenge, provides that Boeing will use the general apportionment method set forth in South Carolina Code section 12-6-2252. **[***]**.

8.954. The difference between the parties centres around whether, under the definition of "sales factor" in South Carolina Code section 12-6-2280(A), and more particularly, the numerator of the sales factor which consists of the "sales in this State" as defined in South Carolina Code section 12-6-2280(B), Boeing's sales of LCA to foreign customers are sales in this State, such that the Income Allocation and Apportionment Agreement would change their status to out-of-state sales for purposes of assessing Boeing's liability to South Carolina income taxes, or whether under South Carolina Code section 12-6-2280, such sales would in any case be considered out-of-state sales, such that they are treated in the same way under both the general provisions of South Carolina income tax law and the Income Allocation and Apportionment Agreement.

8.955. The United States disagrees that South Carolina Code section 12-6-2280(B) defines "sales in this State" in a manner that includes sales by Boeing of airplanes to foreign purchasers. For the United States, export sales are treated in the same way under South Carolina income tax law and under the Income Allocation and Apportionment Agreement: In both cases, income from export sales is apportioned *outside* South Carolina. Therefore, the special sourcing rules in the Income Allocation and Apportionment Agreement do not entail a more favourable apportionment of Boeing's income from foreign sales of LCA than would apply under the terms of South Carolina Code section 12-6-2280 itself.

8.956. The United States supports its position by noting that, while the first sentence of South Carolina Code section 12-6-2280(B) provides that the term "sales in this State" includes sales of goods, merchandise or property received by a purchaser in this State, the second sentence of South Carolina Code section 12-6-2280(B) provides that the place where goods are received by the purchaser is considered the place at which the goods are "received" by the purchaser "after all transportation is completed". For the United States, an export sale of an LCA manufactured by Boeing in South Carolina involves the *transportation of the aircraft outside* of South Carolina and the territory of the United States. For purposes of South Carolina Code section 12-6-2280(B), the aircraft is therefore "received" outside South Carolina. Because export sales of aircraft must be transported to the airline outside the United States, they are not in any event "received" in South Carolina.[2417]

8.957. The European Union contests this understanding of when and where an aircraft is "received" by a foreign customer for purposes of South Carolina Code section 12-6-2280(B). According to the European Union, Boeing aircraft are formally delivered (covering actual handover and legal transfer of title) at Boeing's Washington and South Carolina delivery centres. The European Union argues that, under South Carolina Code section 12-6-2280(B), the sale of an aircraft to a foreign purchaser which is *delivered to the purchaser at Boeing's delivery centre in South Carolina* would be treated as a sale "in this State". According to the European Union, South Carolina Code section 12-6-2280(B) does not make any reference to whether the purchaser or eventual operator is located outside of the United States. Rather, the apportionment of sales inside or outside South Carolina is based on the place where the purchaser "receives" the good. The European Union argues therefore that, when a foreign customer takes *formal delivery* of an aircraft at Boeing's 787 delivery centre in South Carolina, the aircraft is "received by the purchaser" in

[2417] United States' response to Panel question No. 35, para. 147: "{b}y definition, export sales involve transporting goods outside the territory of the country where the goods were manufactured. Thus, an export sale involving LCA manufactured by Boeing in South Carolina would involve the transportation of the LCA outside of South Carolina and the territory of the United States. Therefore, South Carolina law does not require income from export sales to be apportioned to South Carolina because they are not 'sales in this state'".

South Carolina, and the income from such sale would therefore be apportioned to South Carolina.[2418]

8.958. The question that arises therefore is when particular goods (aircraft) can be considered to be "received" by a purchaser (in particular, a foreign customer) for purposes of South Carolina Code section 12-6-2280(B), and more particularly, whether aircraft are received by a foreign customer "after all transportation is completed" at the time of formal delivery to the customer at Boeing's delivery centre in South Carolina, or when the aircraft are transported to the airline's headquarters outside the United States. This necessarily requires the Panel to interpret South Carolina Code section 12-6-2280. Although it is not the role of WTO panels to interpret a Member's domestic legislation as such, it is permissible, and in this case, essential, that the Panel interpret the relevant provisions of South Carolina's income tax law in order to resolve the question of whether the measure in question (which is not South Carolina Code sections 12-6-2252 or 12-6-2280, but rather, the Special Apportionment Method set forth in the Income Allocation and Apportionment Agreement) involves a foregoing of revenue otherwise due, and thus a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.[2419]

8.959. In respect of the types and threshold of evidence that may be required to prove a particular construction of municipal law, the Appellate Body in *US – Carbon Steel (India)* has explained that the nature and extent of evidence required to satisfy the burden of proof will vary from case-to-case:

> Thus, whereas in some cases the text of the relevant legislation may suffice to clarify the content and meaning of the relevant legal instruments, in other cases the complainant will also need to support its understanding of the content and meaning of such legal instruments with evidence beyond the text of the instrument, such as evidence of consistent application of such laws, pronouncements of domestic courts on the meanings of such laws, the opinions of legal experts, and the writings of recognized scholars.[2420]

8.960. In that regard, the Appellate Body stated in *US – Countervailing and Anti-Dumping Measures (China*) that, in ascertaining the meaning of municipal law, a panel should undertake a holistic assessment of all relevant elements, starting with the text of the law and including, but not limited to, relevant practices of administering agencies, or legal interpretations of municipal law given by a domestic court.[2421] In respect of the burden of proof, the Appellate Body in *US – Carbon Steel* also clarified that the party asserting that another party's municipal law, as such, is inconsistent with relevant treaty obligations bears the burden of introducing evidence as to the scope and meaning of such law to substantiate that assertion.[2422] We consider that the burden

[2418] The European Union also disagrees that the term "after all transportation is completed" in the second sentence of S.C. Code section 12-6-2280(B) could be interpreted to mean that goods that are "physically received" in South Carolina but then removed from that state can be considered to be "received by the purchaser" in the place to which the goods are removed. Rather, the idea expressed in the second sentence of S.C. Code section 12-6-2280(B), that the place of "receipt" of goods is the place in which they are received by the purchaser "after all transportation is completed" should be understood to address cases where goods are received in-state by a common carrier but are then shipped by that carrier to the purchaser out-of-state. In that case, the purchaser "receives" the goods not when they are given by the seller to the shipper in-state, but when the shipper delivers those goods to the purchaser out-of-state.

[2419] The Appellate Body has acknowledged that in a number of previous disputes, panels and the Appellate Body have been required to ascertain the meaning of municipal law in order to determine whether the challenged measure was consistent with a provision of the covered agreements. The Appellate Body considered in *US – Hot-Rolled Steel* that, "{a}lthough it is not the role of panels or the Appellate Body to interpret a Member's domestic legislation as such, it is permissible, indeed essential, to conduct a detailed examination of that legislation in assessing its consistency with WTO law." (Appellate Body Report, *US – Hot-Rolled Steel*, para. 200). The Appellate Body has stated moreover that, as part of their duties under Article 11 of the DSU, "panels have the obligation to examine the meaning and scope of the municipal law at issue in order to make an objective assessment of the matter before it, including an objective assessment of the facts of the case and the applicability and conformity with the covered agreements." (Appellate Body Reports, *US – Countervailing and Anti-Dumping Measures (China*), para. 4.98; and *US – Carbon Steel (India*), para. 4.445).

[2420] Appellate Body Report, *US – Carbon Steel (India*) para. 4.446.

[2421] Appellate Body Report, *US – Countervailing and Anti-Dumping Measures (China*), para. 4.101. See also Appellate Body Reports, *US – Carbon Steel (India*), para. 4.446; and *EU – Biodiesel (Argentina*), paras. 6.201 and 6.202.

[2422] Appellate Body Report, *US – Carbon Steel*, para. 157.

should be allocated in the same manner in the situation before us; namely, where the European Union as complaining party asserts a particular interpretation of South Carolina's income tax law in order to demonstrate that the measure at issue (namely, the Special Apportionment Method under the Income Allocation and Apportionment Agreement) involves a foregoing of revenue otherwise due, for purposes of Article 1.1(a)(1)(ii) of the SCM Agreement.

8.961. With these principles in mind, and mindful of the need to conduct a holistic assessment of the evidence before us, we begin our interpretation of the sales factor apportionment method applicable under South Carolina's income tax law by examining the relevant text of South Carolina Code section 12-6-2280.

8.962. The term "sales in this State" is defined in South Carolina Code section 12-6-2280(B) to include "sales of goods, merchandise, or property received by a purchaser in this State". There is no disagreement that aircraft qualify as "goods, merchandise, or property". As we have noted, the disagreement involves the circumstances under which aircraft are considered to be "received by a purchaser in this State" for purposes of the first sentence of South Carolina Code section 12-6-2280(B). The second sentence of South Carolina Code section 12-6-2280(B) provides that the "place where goods are received by the purchaser after all transportation is completed is considered the place at which the goods are received by the purchaser". The third sentence of South Carolina Code section 12-6-2280(B) provides that "{d}irect delivery into this State by the taxpayer to a person designated by a purchaser constitutes delivery to the purchaser in this State".[2423]

8.963. The European Union considers that aircraft are "received by a purchaser in this State", for purposes of South Carolina Code section 12-6-2280(B), when a customer takes formal delivery of an aircraft. Formal delivery of all Boeing aircraft to all Boeing customers worldwide occurs only at Boeing's delivery centres in Washington State, and since 2012, in South Carolina. The evidence before us indicates that formal delivery of an aircraft is a *process* that takes place over approximately two weeks and involves numerous inspections, test flights by Boeing flight crew, various "acceptance flights" by customer flight crew, the handover of legal title to the aircraft in exchange for final payment or other financing arrangements, delivery by the FAA (or its foreign equivalent in the case of foreign purchasers) of the certificate of airworthiness, and the *flight by the airline's pilots back to the airline's headquarters or base* for further checks and customization.[2424]

8.964. The meaning of "sales in this State" in South Carolina Code section 12-6-2280(B), and more particularly, the circumstances in which an aircraft would be considered "received by the purchaser after all transportation is completed" for purposes of the second sentence of South Carolina Code section 12-6-2280(B), is not clear to the Panel on the face of the text of South Carolina Code section 12-6-2280(B). More specifically, it is not clear to the Panel that formal delivery of an aircraft at Boeing's delivery centre in South Carolina would be considered a "sale in this State" under South Carolina Code section 12-6-2280(B), on the basis that the aircraft was "received by the purchaser after all transportation is completed" in South Carolina. The Panel is not persuaded on the basis of the factual material before it that all transportation is completed, and that an aircraft can be considered to have been received by a customer, when the customer's representatives attend Boeing's South Carolina delivery centre to engage in aspects of the formal delivery process.

8.965. We note that the underlying objective of the sales factor apportionment methodology for assessing liability to South Carolina income taxes is expressed in South Carolina Code section 12-6-2210(B). South Carolina Code section 12-6-2210(B) provides that, where a taxpayer is transacting or conducting business partly within and partly without South Carolina, South Carolina income tax is imposed *on a base which reasonably represents the proportion of the trade or business carried on within the state*.[2425] We are not persuaded that Boeing's manufacture of

[2423] The third sentence of S.C. Code section 12-6-2280(B) thus appears to qualify the scope of "*after all transportation* is completed" in the second sentence, by providing that, in situations where an agent is designated to collect the goods on behalf of the purchaser inside South Carolina, this would be "delivery to" (and presumably a receipt by) the purchaser in the State, although "*all transportation*" would not in fact have been completed in that scenario.

[2424] See C. Sloan, "SpeciAAl Delivery Flight Event: American Airlines Boeing 777-300ER (Part Two) – Aircraft Acceptance, Handover Event and Delivery", *Airchive.com*, 27 April 2013, (Exhibit EU-1119).

[2425] S.C. Code section 12-6-2210(B):

aircraft in South Carolina would necessarily be considered a trade or business that is *carried on within South Carolina*, in circumstances where the aircraft in question are manufactured for out-of-state customers, which may not have any connection with South Carolina, for use wholly outside South Carolina. Owing to the nature of large civil aircraft, the process of purchasing the good requires the customer to collect the aircraft from a U.S.-based delivery centre and fly it back to its own headquarters or base, from where it will be further tested before it is then "placed into service" for that customer. In those circumstances, it would in our view be a strained interpretation of South Carolina Code section 12-6-2280(B) to consider the customer as having received the airplane "after all transportation is completed" in South Carolina.

8.966. The United States has submitted a statement of the Administrator of Audits for the South Carolina Department of Revenue in support of its interpretation of South Carolina's income tax law, treating sales of airplanes to foreign customers as out-of-state sales. In the statement, the official expresses the view that, under South Carolina income tax law, the sale of an airplane involving a purchaser who "picks up" the airplane at Boeing's facility in South Carolina and then flies that airplane directly to a foreign jurisdiction where it will be put into use carrying passengers on commercial flights, will be sourced to the foreign jurisdiction for purposes of the South Carolina single sales apportionment formula, and will not be considered a sale in South Carolina.[2426]

8.967. The European Union challenges the authoritativeness of this statement as the "conclusory statement by a South Carolina government employee with respect to a narrow factual hypothetical".[2427] The European Union points out that the statement in question is neither a revenue ruling (i.e. an advisory opinion providing general guidance as to the interpretation of state tax law) nor a private letter ruling (i.e. an advisory opinion which although not having the force of law, is binding on agency personnel with respect to the person to whom it was issued based on the specific facts and circumstances presented).[2428] The European Union alleges that Boeing could have sought a private letter ruling had it wanted certainty regarding the interpretation of South Carolina's income apportionment rules to aircraft sales, and notes that neither Boeing nor the United States appear to have done so.[2429] However, it is not clear to us that the South Carolina Department of Revenue would have considered it appropriate to issue a private letter ruling in the circumstances.[2430] In addition, although the Audit Services Division of the South Carolina Department of Revenue is not the division responsible for legal interpretation, advice and guidance, it is the division responsible for audits conducted by the Department relating to the apportionment of income by corporations and the sourcing of that income.[2431] Moreover, we note that the European Union does not produce a legal opinion contradicting the views expressed in the statement of the South Carolina tax official, or otherwise supporting its interpretation of South Carolina Code section 12-6-2280 as meaning that formal delivery of an aircraft in South Carolina to an out-of-state purchaser is a "sale in this State".[2432] There is similarly no evidence before the Panel of the application of this law, or pronouncements of domestic courts on its interpretation.

> If a taxpayer is transacting or conducting business partly within and partly without this State, the South Carolina income tax is imposed upon a base which reasonably represents the proportion of the trade or business carried on within this State.

[2426] Statement of R. Taylor, State of South Carolina Department of Revenue on Application of South Carolina Tax Law Regarding Sourcing of Income, (Exhibit USA-533).

[2427] European Union's comments on the United States' response to Panel question No. 145, para. 391.

[2428] European Union's comments on the United States' response to Panel question No. 145, para. 393. See also South Carolina Department of Revenue, Revenue Procedure No. 09-3, 20 March 2009, (Exhibit EU-1432), pp. 2-5.

[2429] European Union's comments on the United States' response to Panel question No. 145, para. 394.

[2430] We note in particular that the South Carolina Department of Revenue may exercise its discretion not to issue a private ruling letter on a number of grounds, including where the inquiries concern purely hypothetical situations, on matters in litigation, and when requests are best handled by another means. (South Carolina Department of Revenue, Revenue Procedure No. 09-3, 20 March 2009, (Exhibit EU-1432), p. 5).

[2431] Statement of R. Taylor, State of South Carolina Department of Revenue on Application of South Carolina Tax Law Regarding Sourcing of Income, (Exhibit USA-533). Moreover, the Audit Division is the division of the South Carolina Department of Revenue listed in the "Notices" section of the Income Allocation and Apportionment Agreement and thus presumably is the division responsible for negotiating and administering that agreement with Boeing. (Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), section 6.1).

[2432] See Panel Report, *Thailand – Cigarettes (Philippines)*, paras. 7.708 and 7.709 for an analogous situation in which the Philippines submitted an expert opinion in support of its position that an individual who resells domestic cigarettes is exempt from personal income tax, and thus, unlike resellers of imported

8.968. Finally, we note that **[***[2433]]**. This is additional evidence that tends to suggest that Boeing also did not consider, for those years at least, that its income tax liability in South Carolina would be any different under South Carolina income tax law or the Income Allocation and Apportionment Agreement.[2434]

8.969. On the basis of our holistic assessment of the text of South Carolina Code section 12-6-2280(B), in light of the underlying purpose of the apportionment rules as expressed in South Carolina Code section 12-6-2210 (namely, to impose income tax on a base which reasonably represents the proportion of the trade or business "carried on within this State"), along with evidence before us regarding the interpretation of the apportionment rules in South Carolina Code section 12-6-2280: (a) the statement of the Administrator of Audits for the South Carolina Department of Revenue to the effect that income from Boeing's sales of aircraft to foreign customers would not be treated as sales in South Carolina under South Carolina income tax law; and (b) **[***]**, we are not satisfied that, under South Carolina Code section 12-6-2280, formal delivery of the aircraft at Boeing's delivery facility in South Carolina to an out-of-state customer would be apportioned to South Carolina. It seems to us that the more reasonable interpretation of South Carolina Code section 12-6-2280(B), in the context of the sale and delivery of aircraft, is that the place where the goods are received by the purchaser "after all transportation is completed" is the place to which the aircraft are flown for entry into service, and that, where this is outside South Carolina, such sales will not be apportioned to South Carolina under South Carolina Code section 12-6-2280(B).[2435]

8.970. We are not persuaded that the European Union has demonstrated that the special sourcing rules provided for in the Income Allocation and Apportionment Agreement, insofar as they source income from sales and deliveries of airplanes to foreign customers, or to leasing companies or special purpose entities, to the principal place of business of the ultimate operator of the airplane, as sales "outside South Carolina", involve different tax treatment from that which would be afforded to such sales and deliveries under South Carolina Code sections 12-6-2252 and 12-6-2280.[2436]

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cigarettes, need not prepare and maintain revenue and expense reports. Based on that opinion, considered together with the text of the relevant provisions, and in the absence of any evidence submitted by Thailand to contradict that expert opinion, the panel concluded that it had been established that resellers of domestic cigarettes were exempt from income tax, and consequently from the obligation to file revenue and expense reports.

[2433] **[***]** (Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), pdf p. 17).

[2434] We caution that we do not assign significant weight to this factor, owing to the fact that Boeing did not begin making deliveries of the 787 from its South Carolina facility until 2012, and we do not have information before us as to the customers that received those aircraft.

[2435] We recognize that, under this interpretation, aircraft that are transported outside South Carolina but within the United States are also not "received" in South Carolina for purposes of South Carolina income tax law. Moreover, under the Special Apportionment Method in the Income Allocation and Apportionment Agreement, such sales *would be* apportioned to South Carolina. In other words, the Income Allocation and Apportionment Agreement would appear to involve an apportionment method that differs from the prescribed statutory method in respect of sales of aircraft to U.S. customers outside South Carolina, and to apportion those sales *to South Carolina*, when they would not otherwise be so apportioned. The United States acknowledges that "it is possible that the tax treatment of Boeing's income from sales to U.S. airline customers located outside South Carolina may change under the Apportionment Agreement." (United States' response to Panel question No. 36, para. 151). However, it explains that it is unclear how this potential change would affect Boeing's actual tax liability in the absence of information as to the U.S. state to which that income would otherwise have been apportioned, and whether that other U.S. state's effective tax rate applied to such income would represent an increase or decrease over the effective tax rate applied by South Carolina. (United States' response to Panel question No. 36, para. 152).

[2436] If it is the case, as appears to us, that the Special Apportionment Method under the Income Allocation and Apportionment Agreement does not involve a different apportionment of Boeing's LCA sales to foreign purchasers than would be the case under the general sales factor apportionment rules in South Carolina Income Tax Act sections 12-6-2252 and 12-6-2280, the question naturally arises as to why South Carolina and Boeing would enter into the Income Allocation and Apportionment Agreement. Indeed, the European Union cautions that the Panel should exercise a degree of scepticism regarding the United States' arguments that the Income Allocation and Apportionment Agreement has no effect on Boeing's tax liability. (European Union's response to Panel question No. 37, para. 212). In response to a question from the Panel, the United States explains that entering into the Income Allocation and Apportionment Agreement provides Boeing with certainty regarding the apportionment of income generated by its significantly expanded South Carolina operations over the ten-year term of the Agreement, once it is "activated". More specifically, it reduces Boeing's exposure to changes in applicable tax rules after Boeing makes significant investments in the

8.971. **In light of the foregoing, we therefore consider that the European Union has failed to establish that the Income Allocation and Apportionment Agreement involves South Carolina foregoing revenue that would otherwise be due in respect of Boeing's state corporate income tax liability.**

8.972. We reach this conclusion independently of the separate questions of whether Boeing has in fact "activated" the Income Allocation and Apportionment Agreement and whether the Panel should make findings in the absence of evidence to that effect. We recall that the **[*****[2437]**]**.[2438]

8.973. In response to the Panel's request for information pursuant to Article 13 of the DSU, the United States advised on 28 February 2013 that Boeing had not yet notified the South Carolina Department of Revenue that it wished to begin using the Special Apportionment Method set out in the Income Allocation and Apportionment Agreement.[2439] The United States further advised, in its response to Panel questions on 5 December 2013, that Boeing is not "currently using" the Special Apportionment Method because it had not yet provided the notice required by section 3.1 of the Income Allocation and Apportionment Agreement.[2440] The United States once again advised that it had confirmed with South Carolina tax authorities that Boeing had not, as of 1 December 2014, provided notification under the Income Allocation and Apportionment Agreement to activate the Special Apportionment Method.[2441]

8.974. The European Union considers that, just because Boeing may not yet have provided the required notification to the South Carolina authorities, it does not mean that Boeing is not currently using the Special Apportionment Method under the Income Allocation and Apportionment Agreement. According to the European Union, Boeing is able to benefit from the Income Allocation and Apportionment Agreement for up to 15 months before it provides the required notification to the South Carolina Department of Revenue.[2442]

8.975. The evidence on record indicates that, as of 1 December 2014, Boeing had not yet notified the South Carolina Department of Revenue that it wished to begin using the Special Apportionment Method in respect of any tax year. Moreover, we are satisfied on the evidence that Boeing's South Carolina corporate income tax for **[***]**.[2443] It is possible that Boeing provided the

company's operations, as well as to unanticipated disputes with tax authorities. The United States contends that it is commonplace for companies in a wide range of industries and jurisdictions to enter into similar types of agreements in order to achieve greater certainty with respect to future tax liability. (United States' response to Panel question No. 147, paras. 299 and 300). Having regard to the other ways potentially open to South Carolina and Boeing to clarify the interpretation of the sales factor apportionment rules under the South Carolina income tax laws in the case of sales of LCA (e.g. legislative amendment, revenue ruling or private letter ruling, or litigation) it appears to us that the option of reaching a contractual agreement for a defined period of time through a mechanism already contemplated under S.C. Code section 12-6-2320(B), which Boeing may elect to activate anytime within seven years from 1 January 2010, provides certain distinct advantages for both South Carolina and Boeing. On South Carolina's side, there is no need to amend legislation or issue a general revenue ruling that could potentially benefit other taxpayers in an unforeseen manner without those taxpayers being required to undertake the significant investments in South Carolina that are the condition for Boeing being able to use the Special Apportionment Method in the Income Allocation and Apportionment Agreement. On Boeing's side, it obtains a contractually enforceable right protecting it from changes in South Carolina income tax law which could supersede or modify any general revenue ruling or private letter ruling it may otherwise have sought to obtain. In addition, it is able to elect if and when it wishes to use the Special Apportionment Method. We therefore consider it plausible that Boeing could have considered it advantageous to enter into an agreement that provides it with a measure of certainty regarding the way in which income from sales both outside and within the United States would be apportioned for purposes of its South Carolina income tax liability.

[2437] Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), sections 3.1 and 1.1.

[2438] Income Allocation and Apportionment Agreement, (Exhibit EU-510) (BCI), section 3.1.

[2439] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 74, para. 157.

[2440] United States' response to Panel question No. 36, fn 175.

[2441] United States' response to Panel question No. 146, para. 298.

[2442] The European Union explains that corporate tax returns are due on the 15th day of the third month after the close of the corporation's tax year. Boeing's tax year ends on 31 December, meaning that under section 3.1 of the Income Allocation and Apportionment Agreement, Boeing could elect to have its corporate income tax liability for the previous year assessed on the basis of the Special Apportionment Method by notifying the South Carolina Department of Revenue by 15 March of the following year. (See Boeing, *Application for Qualification of Income Apportionment Incentive*, (10 August 2010), (Exhibit EU-12), item F.1).

[2443] United States' response to Panel question No. 146, para. 298.

South Carolina authorities with the required notice by the 15 March 2015 due date for its tax return for the tax year ended 31 December 2014. If this were the case, there would be a factual basis for surmising that Boeing's South Carolina income tax for the year ended 31 December 2014 was, or at least will be, assessed on the basis of the Special Apportionment Method. However, in the absence of such information, it is difficult to see how the Panel could make a finding in respect of an event which not only has not yet occurred, but in fact may not occur. However, our interpretation of "sales in this State" under South Carolina Code section 12-6-2280(B), as applied to sales and deliveries of Boeing LCA to foreign customers at Boeing's South Carolina delivery facility, renders it unnecessary to further address this issue.[2444]

8.2.8.9.4 Conclusion

8.976. As we explain above, we are not satisfied that the European Union has demonstrated that the Special Apportionment Method to be applied under the Income Allocation and Apportionment Agreement, insofar as it sources income from sales and deliveries of airplanes to foreign customers, or to leasing companies or special purpose entities to the principal place of business of the ultimate operator of the airplane, as sales "outside South Carolina", involves a different tax treatment from that which would be afforded to such sales and deliveries under South Carolina Code sections 12-6-2252 and 12-6-2280(B). Accordingly, the European Union has failed to establish that the Income Allocation and Apportionment Agreement involves South Carolina foregoing revenue that would otherwise be due in respect of Boeing's state corporate income tax liability.

8.977. In light of the foregoing, we conclude that the European Union has failed to establish that the measure involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement and therefore a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement.

8.2.8.10 Whether the property tax exemption in respect of Boeing's large cargo freighters is a specific subsidy to Boeing

8.2.8.10.1 Introduction

8.978. In paragraph 24 of its panel request, the European Union identifies as one of the Project Gemini-related subsidies presently benefiting Boeing:

> Property tax exemptions for Boeing's Large Cargo Freighters, pursuant to S.C. Code § 12-37-220(B)(33), as amended by Section 1 of H3482, Act No. 45, 2009 S.C. Acts 763.

8.979. As already explained in the context of our evaluation of the Project Emerald and Boeing FILOT Agreements, South Carolina imposes a property tax assessment rate equal to 10.5% of the fair market value of property owned and used by manufacturers in the conduct of their business.[2445] South Carolina also provides various general exemptions from property tax. Section 12-37-220(A) of the South Carolina Code, entitled "General exemption from taxes", sets forth 11 exemptions from *ad valorem* taxation, pursuant to the provisions of section 3 of Article X of the State Constitution and subject to the provisions of section 12-4-720. Section 12-37-220(B) of the South Carolina Code then provides:

> In addition to the exemptions provided in subsection (A), the following classes of property are exempt from ad valorem taxation subject to the provisions of Section 12-4-720:
>
> …

[2444] Accordingly, we do not consider it necessary to address the European Union's request for the Panel to "draw the appropriate inferences". (European Union's response to Panel question No. 172, fn 1106; and comment on United States' response to Panel question No. 36, para. 218).

[2445] County Equalization and Reassessment, *S.C. Code*, Title 12, chapter 43, (Exhibit EU-525), section 12-43-220(a)(1).

(33)(a) All personal property including aircraft of an air carrier which operates an air carrier hub terminal facility in this State for a period of ten consecutive years from the date of qualification, if its qualifications are maintained. An air carrier hub terminal facility is defined in Section 55-11-500.

(b) All aircraft, including associated personal property, owned by a company owning aircraft meeting the requirements of Section 55-11-500(a)(3)(i) without regard to the other requirements of Section 55-11-500. An aircraft qualifying for the exemption allowed by this subitem may not be used by the operator of the aircraft as the basis for an exemption pursuant to subitem (a) of this item.

8.980. The exemption set forth in section 12-37-220(B)(33)(b) above was effected through an amendment to section 12-37-220 by H3482.[2446] It was signed into law on 2 June 2009 and was expressed to apply to property tax years beginning after 2006. Its effect was to exempt from *ad valorem* taxation all aircraft and associated personal property owned by a company owning two or more specially equipped planes that are used for the transportation of specialized cargo (the LCF property tax exemption).[2447]

8.981. Boeing employs "Dreamlifter" LCFs, modified 747-400 aircraft, to transport components of the 787 Dreamliner from various manufacturing facilities to assembly lines in Everett, Washington, and North Charleston, South Carolina.[2448] Boeing operates four such Dreamlifter LCFs from its facility in North Charleston.[2449] The European Union argues that Boeing has benefited from the LCF property tax exemption set forth above since 2009, and that this constitutes a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement.

8.2.8.10.2 Main arguments of the parties

8.982. The European Union argues that the LCF property tax exemption is a financial contribution by a government within the meaning of Article 1.1(a)(1)(ii), namely the foregoing of government revenue otherwise due.[2450] The European Union identifies the tax treatment applicable to Boeing's LCFs in South Carolina as the exemption from property taxes for "specially equipped planes" used to transport "specialized cargo", as well as associated personal property, set out in section 12-37-220(B)(33)(b) of the South Carolina Code.[2451] According to the European Union, the legislative history of H3482 suggests that the reason for Boeing's tax treatment is to provide a major subsidy to Boeing. The European Union identifies the benchmark tax treatment of comparable taxable activity of comparable taxpayers as the tax treatment of aircraft ownership by a manufacturer or any other taxpayer in South Carolina; namely, an assessment ratio of 10.5% under section 12-43-220 of the South Carolina Code.[2452] The European Union argues that a comparison of the benchmark tax treatment and the treatment received by Boeing under the LCF property tax exemption, in light of the reasons for the LCF property tax exemption, demonstrates that the tax treatment accorded to Boeing represents the foregoing of revenue otherwise due.[2453]

[2446] South Carolina Act No. 45, *S.C. Code*, Acts 763 H3482 (2 June 2009), (Exhibit EU-522).

[2447] See section 1 of South Carolina Act No. 45, *S.C. Code*, Acts 763 H3482 (2 June 2009), (Exhibit EU-522), which amends S.C. Code section 12-37-220(B)(33)(b) to exempt from *ad valorem* taxes: "{a}ll aircraft, including associated personal property, owned by a company owning aircraft meeting the requirements of Section 55-11-500(a)(3)(i) without regard to the other requirements of Section 55-11-500". Section 55-11-500(a)(3)(i), which was enacted in 2005 to expand the definition of an "air carrier hub terminal facility" for purposes of South Carolina's air hub bonds legislation, to include an airport terminal facility from which an air carrier operates "two or more specially equipped planes that are … used for the transportation of specialized cargo". (See South Carolina Act No. 33, R34 H3234 (2005), (Exhibit EU-1387)).

[2448] Boeing 747 Dreamlifter Fact Sheet, available at <http://www.boeing.com/commercial/787family/dreamlifter_fact.html>, accessed 1 September 2016, (Exhibit EU-443).

[2449] South Carolina Department of Revenue, Boeing Applications for Property Tax Exemptions, 28 April 2010, (Exhibit EU-521).

[2450] European Union's first written submission, para. 646.

[2451] European Union's first written submission, para. 647.

[2452] The European Union further specifies that the benchmark property tax treatment of aircraft in South Carolina is the same regardless of whether the owner is a manufacturer or other type of taxpayer. (European Union's first written submission, para. 648; second written submission, para. 685 and fn 1150).

[2453] European Union's first written submission, para. 649.

8.983. The European Union argues that the LCF property tax exemption provides Boeing with benefits on non-market terms, and therefore confers a benefit within the meaning of Article 1.1(b).[2454]

8.984. The European Union argues that the LCF property tax exemption is specific within the meaning of Articles 2.1(a) and 2.1(c) on a number of grounds. First, the LCF property tax exemption is specific within the meaning of Article 2.1(a) since H3482 explicitly limits the exemption to an industry or group of enterprises, namely "compan{ies} owning aircraft meeting the requirements of Section 55-11-500(a)(3)(i)".[2455] Second, the LCF property tax exemption is specific within the meaning of Article 2.1(c) since, to the best of the European Union's knowledge, Boeing is the only beneficiary of this subsidy.[2456] In any event, the exemption is *de facto* specific since the United States itself confirms that the subsidy has been used by only a limited number of certain enterprises.[2457] Third, the European Union argues that the LCF property tax exemption falls under the provisions of Article 3, and is therefore deemed to be specific pursuant to Article 2.3.

8.985. The United States argues that the European Union has failed to demonstrate that the LCF property tax exemption amounts to government revenue foregone within the meaning of Article 1.1(a)(1)(ii), and in any case, overestimates the value of any such exemption. Moreover, the LCF property tax exemption is not specific within the meaning of Article 2.

8.986. The United States argues that the European Union has failed to identify any statements in the legislative history of H3482 that establish that it was intended to benefit Boeing.[2458] Furthermore, the European Union fails to carry out the comparison of taxpayers in the context of the tax system since it ignores the availability of equivalent treatment to other entities in the state.[2459] In addition, as a factual matter, the European Union overstates the value of the LCF property tax exemption.

8.987. As to whether the LCF property tax exemption is specific, the United States argues that the specificity analysis should be carried out at the level of South Carolina's property tax exemptions collectively. Indeed, the LCF property tax exemption is part of South Carolina's larger efforts to ensure that the State's tax structure does not impede investment and other economic activity within the State.[2460] On this basis, the United States argues that, as a group, South Carolina's property tax exemptions are not specific within the meaning of Article 2.1(a) since they are not explicitly limited to certain enterprises. With respect to the text of the LCF property tax exemption in particular, the mere requirement that a company own a certain number of certain aircraft in order to take advantage of a tax exemption for those aircraft is not an express limitation to any particular industry or group of enterprises.[2461] The United States contends that the LCF property tax exemption is non-specific under Article 2.1(b) on the basis that the exemption is statutory and there is no discretion involved on the part of any government entity as to whether to grant the exemption or not.[2462] Finally, the LCF property tax exemption is not *de facto* specific under Article 2.1(c). Property tax exemptions are widely available and widely used in South Carolina. The property tax exemption provided in section 12-37-220-(B)(33) of the South Carolina Code in particular has been used by the United Parcel Service, Air South, and Boeing.[2463]

[2454] European Union's first written submission, para. 651.
[2455] European Union's first written submission, para. 653; second written submission, para. 697.
[2456] European Union's first written submission, para. 654.
[2457] The European Union notes that, in response to a Panel question under Article 13 of the DSU, the United States stated that the property tax exemptions under subsections (a) and (b) of section 12-37-220(B)(33), concerning the LCF property tax exemption as well as a property tax exemption for air carriers which operate an air carrier hub terminal facility, have been used by three entities in total, including Boeing. (European Union's first written submission, para. 655; second written submission, para. 698).
[2458] United States' comments on European Union's response to Panel question No. 113, paras. 209-212.
[2459] United States' first written submission, paras. 609 and 610; second written submission, para. 570.
[2460] Furthermore, South Carolina property tax exemptions are all contained in the South Carolina tax code and expressed as exemptions to the general rate set out in that code. (United States' first written submission, para. 652).
[2461] United States' first written submission, para. 653; second written submission, para. 578.
[2462] United States' first written submission, para. 655; second written submission, para. 579.
[2463] United States' first written submission, para. 656; second written submission, para. 580.

8.2.8.10.3 Evaluation by the Panel

8.2.8.10.3.1 Whether there is a financial contribution

8.988. The question before the Panel is whether the LCF property tax exemption involves a financial contribution in the form of the foregoing of revenue otherwise due, within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.

8.989. As in the case of the FILOT agreements challenged in this proceeding, the parties structure their arguments according to the three-step analysis set out by the Appellate Body in the original proceeding for determining the existence of revenue foregone. As we have explained in that context, we consider it essential to look at the broader legal rationale underlying this analysis before studying its specific stages.[2464] In particular, the Appellate Body has observed that the foregoing of revenue otherwise due implies that less revenue has been raised by the government than would have been raised in a different situation, and crucially that "the word 'foregone' suggests that the government has given up an entitlement to raise revenue that it could 'otherwise' have raised".[2465] This entitlement does not exist in the abstract, and must therefore be assessed against some defined, normative benchmark.[2466]

8.990. Assessing the LCF property tax exemption in light of the guidance provided by the Appellate Body, we are of the view that this measure is a financial contribution within the meaning of Article 1.1(a)(1)(ii) because it is an instance of a government giving up an entitlement to raise revenue that it could otherwise have raised. The very nature of the challenged measure as a tax *exemption* suggests that it is an instance of the taxing authority giving up an entitlement to raise revenue that it could otherwise have raised under the South Carolina property tax rules.

8.991. Our tentative conclusion that the LCF property tax exemption amounts to revenue foregone finds further support in the application of the three-step analysis set out by the Appellate Body in the original proceeding.

8.992. The European Union argues that the benchmark tax treatment of comparable taxable activity of comparable taxpayers is the "tax treatment of aircraft in South Carolina" which is subject to a property tax assessment ratio of 10.5%, whether owned by manufacturers or other taxpayers.[2467] The United States responds that the European Union fails to consider the availability of equivalent treatment to other entities in the state, without however specifying what this equivalent treatment is.[2468] We consider the benchmark identified by the European Union to be reasonable and appropriate, particularly in the absence of any alternative proposed by the United States.

8.993. As to the tax treatment of aircraft in South Carolina, we note that subparagraph 33(a) of section 12-37-220(B) provides an exemption in respect of aircraft of an air carrier which operates an air carrier hub terminal facility for a period of 10 consecutive years. The analysis of the South Carolina Office of Research and Statistics indicated that this hub exemption "has not been used very often"[2469], suggesting that for the most part, aircraft in South Carolina are subject to property taxes, either at the rate of 10.5% set forth in the South Carolina Constitution, or potentially at a lower rate if the taxpayer in question has entered into a FILOT agreement covering its aircraft pursuant to the various FILOT statutes.[2470]

[2464] See paras. 8.868 and 8.869 above.

[2465] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2466] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2467] European Union's first written submission, para. 648; second written submission, para. 685.

[2468] United States' first written submission, paras. 609 and 610; second written submission, para. 570.

[2469] South Carolina Office of Research and Statistics, Statement of Estimated Local Revenue Impact, H.B. 3482, 12 May 2009, (Exhibit EU-529).

[2470] We recall that Boeing, along with Vought and Global Aeronautica, was party to the 2006 Project Emerald FILOT Agreement which, as explained in Section 8.2.8.7.1 above, exempted the project property from *ad valorem* taxes in exchange for the payment of a negotiated "fee". Boeing LCFs are specifically identified in the Project Emerald FILOT Agreement as items of project property that would be assessed at the rate provided for under the fee agreement. However, unlike the other project property, which is subject to the 4%

8.994. With respect to the objective reasons behind the challenged tax treatment, there is no direct evidence before us that sets forth the objective reasons why the South Carolina legislature amended section 12-37-220(B)(33) in June 2009 to provide the additional LCF property tax exemption. The tax treatment involves an exemption from *ad valorem* taxes in respect of Boeing's LCFs and associated personal property, provided by virtue of section 12-37-220(B)(33)(b). The exemption in question was ratified on 27 May 2009 and approved on 2 June 2009. It is expressed to apply for property tax years beginning after 2006.[2471] The European Union argues that it can be logically inferred that the amendment effected by H3482 was intended to subsidize Boeing through a major property tax break connected to Boeing's "Dreamlifter" LCFs "likely in order to signal South Carolina's willingness to provide financial incentives to win the second 787 final assembly line".[2472]

8.995. We note that the initial version of H3482 introduced into the South Carolina House of Representatives in February 2009 would have exempted from property taxation *all* personal property (including aircraft), owned by a company meeting the requirements of section 55-11-500(a)(3)(i).[2473] Section 55-11-500(a)(3)(i) refers to a certified or licensed air carrier that operates two or more specially equipped planes that are used for the transportation of "specialized air cargo". The South Carolina Office of Research and Statistics conducted an analysis of the estimated revenue impact of the initial version of H3482 for the South Carolina Senate Committee on Finance in May 2009. The analysis noted that there was at least one entity in South Carolina that was known to qualify for this property tax exemption. However, there was no definition of "specially equipped" or "specialized cargo".[2474] While the South Carolina Department of Revenue had informed the South Carolina Office of Research and Statistics that it would "construe the specialized cargo provision very strictly", the South Carolina Office of Research and Statistics concluded that local property tax revenues could be affected because "it may be difficult to narrow the scope of this exemption Statewide", and all personal property would be exempted.[2475]

8.996. The version of H3482 that was ratified and signed into law some two to three weeks later narrowed the scope of the LCF property tax exemption from "all personal property, including aircraft" owned by a company owning two or more specially equipped planes used for the transportation of specialized air cargo to "all aircraft, including associated personal property" owned by such companies. In our view, the subsequent narrowing of the scope of the exemption to aircraft (from all personal property), in light of the advice to the South Carolina Senate Finance Committee that there was some uncertainty as to whether there would be more than one entity in South Carolina that could potentially qualify for the property tax exemption given the absence of definitions of "specially equipped" or "specialized cargo", supports a reasonable inference that the reason underlying the amendment to section 12-37-220(B)(33) effected by H3482 was to provide a tax exemption to the one entity in the State that was known to qualify for the exemption. Moreover, we are satisfied on the balance of probabilities that Boeing was the one qualifying entity referred to in the analysis of the S.C Office of Research and Statistics. Indeed, Boeing itself listed the "100% abatement of the LCFs" as one of the components of South Carolina's "incentive offer" in a presentation to Boeing's Board of Directors regarding the Project Gemini proposal in October 2009, suggesting that Boeing at least considered itself to be that one entity.[2476] We therefore conclude that the amendment effected by H3482 was intended to provide a property tax exemption in respect of Boeing's LCFs.

8.997. When we compare the LCF property tax exemption with the benchmark tax treatment of aircraft in South Carolina, whether owned by manufacturers or other taxpayers, taking into account the reasons behind the challenged tax treatment, we are satisfied that the State of South

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assessment ratio under the FILOT agreement, the LCFs are subject to a 9.5% assessment ratio. (Project Emerald FILOT Agreement, (Exhibit EU-556), section 4.1).

[2471] South Carolina Act No. 45, *S.C. Code*, Acts 763 H3482 (2 June 2009), (Exhibit EU-522), section 3.

[2472] European Union's first written submission, para. 647; response to Panel question No. 113, para. 204.

[2473] See South Carolina H3482, as introduced (10 February 2009), (Exhibit EU-520), section 1.

[2474] South Carolina Office of Research and Statistics, Statement of Estimated Local Revenue Impact, H.B. 3482, 12 May 2009, (Exhibit EU-529).

[2475] South Carolina Office of Research and Statistics, Statement of Estimated Local Revenue Impact, H.B. 3482, 12 May 2009, (Exhibit EU-529).

[2476] Boeing Board of Directors, "Gemini Update", Presentation, 19 October 2009, (Exhibit USA-323), slide NLRB-004283.

Carolina is foregoing property taxes that would otherwise be due in relation to the LCFs owned by Boeing in South Carolina. **We conclude that the European Union has established that the LCF property tax exemption in section 12-37-220(B)(33)(b) of the South Carolina Code involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.**

8.2.8.10.3.2 Whether there is a benefit

8.998. While the United States argues that the European Union overvalues the amount of the LCF property tax exemption[2477], it does not appear to contest the European Union's argument that the exemption confers a benefit within the meaning of Article 1.1(b). In light of our finding on financial contribution above, **we find that the LCF property tax exemption in section 12-37-220(B)(33)(b) of the South Carolina Code confers a benefit within the meaning of Article 1.1(b) of the SCM Agreement.[2478]**

8.2.8.10.3.3 Whether the subsidy is specific

8.999. The parties *inter alia* disagree on whether the subsidy provided through the LCF property tax exemption is specific within the meaning of Article 2.1(c). The European Union's position is that the subsidy is *de facto* specific because Boeing is the only known beneficiary of the subsidy, and even the "hub exemption" set forth in section 12-37-220(B)(33)(a) of the South Carolina Code is used only by two enterprises besides Boeing, both of which are air transport companies and thus would constitute "certain enterprises" within the meaning of Article 2.1. The United States' position is that the LCF property tax exemption is part of a broader programme of property tax exemptions set out in section 12-37-220 of the South Carolina Code as a whole, and that specificity must therefore be assessed at the level of that programme. When viewed in that proper context, the subsidy provided through the LCF property tax exemption is not specific within the meaning of Article 2.1(c).

8.1000. For the reasons detailed below, we consider that the European Union has established that the subsidy provided through the LCF property tax exemption is *de facto* specific within the meaning of Article 2.1(c). The United States has provided little argumentation or evidence in support of its assertion that specificity in relation to the LCF property tax exemption should be assessed at the level of a broader subsidy scheme. In particular, we do not consider that the United States has adequately substantiated its argument that the LCF property tax exemption is part of South Carolina's larger efforts to ensure that the South Carolina's tax structure does not impede investment and other economic activity within the state.[2479]

8.1001. We note that there are many exemptions provided in section 12-37-220 of the South Carolina Code, which vary widely in nature, and appear to pursue a number of purposes, some of which are not obviously related to the promotion of investment and other economic activity.[2480] The South Carolina Department of Revenue groups the various exemptions under such diverse categories such as: "Manufacturing Exemptions", "Research and Development Exemptions", "Corporate Headquarters, Corporate Office Facility, and Distribution Facility Exemptions", "Exemptions for Inventory and Intangibles", "Exemption for Personal Property in Transit", "Pollution Control Exemption", "Environmental Cleanup Exemption", "Fire Sprinkler System Exemption", and "Other Particular Business Exemptions".[2481] The LCF property tax exemption is included under "Other Particular Business Exemptions".[2482] The other "particular business exemptions" listed in this category of property tax exemptions seem to have few "links or

[2477] In particular, the parties disagree on how many LCFs Boeing sought the LCF exemption for in 2009. See Section 8.2.8.10.4 below.

[2478] Also see para. 8.885 above on tax reductions conferring a benefit.

[2479] United States' first written submission, para. 652.

[2480] For example, section 12-37-220 provides exemptions from property taxes for, among other things, properties used for public purposes and owned by the State, counties, municipalities, school districts, charitable institutions such as hospitals and aged care institutions, public libraries, for certain types of private property held by eligible individuals, and for property owned and used for particular purposes by certain non-profit organizations such as The Boy Scouts of America, The Girl Scouts of America, the Young Women's Christian Association, Young Men's Christian Association, and The Salvation Army.

[2481] South Carolina Tax Incentives, (Exhibit EU-494), pp. 141-163.

[2482] South Carolina Tax Incentives, (Exhibit EU-494), pp. 162 and 163.

commonalities"[2483] between them. We are not persuaded that the LCF property tax exemption can be considered to be part of a broader programme of property tax exemptions set out in section 12-37-220 of the South Carolina Code such that we should treat the whole of section 12-37-220 of the South Carolina Code as the "proper subsidy scheme" for purposes of our analysis under Article 2.1(c).[2484] We will therefore carry out the specificity analysis at the level of the challenged LCF property tax exemption.

8.1002. The only other argument made by the United States in support of its position that the subsidy provided through the LCF property tax exemption is not specific within the meaning of Article 2.1(c) is the assertion in its first written submission that "the property tax exemption provided in Section 12-37-220(B)(33)" has been used by United Parcel Service and Air South in addition to Boeing.[2485] As previously explained, the LCF property tax exemption that is the focus of the European Union's subsidy claim is the exemption set forth in subparagraph (33)(b) of section 12-37-220(B), which is the subparagraph added through an amendment effected by H3482. The United States' response does not clarify whether United Parcel Service and Air South used the LCF property tax exemption in subparagraph (33)(b) or the "hub exemption" provided in subparagraph (33)(a). Moreover, the European Union argues that the United States' assertion is contradicted by the response received by the European Union from the South Carolina Department of Revenue to a request it made in July 2012 under the South Carolina Freedom of Information Act for any applications by a taxpayer for tax exemptions provided in South Carolina Code section 12-37-220(B)(33)(a) or (b), because this response identifies only applications made by Boeing.[2486] It is conceivable that United Parcel Service and Air South requested the tax exemptions after the date of the European Union's request under the South Carolina Freedom of Information Act to the South Carolina Department of Revenue but prior to February 2013, when the United States provided its response to the Panel's request for information. However, the United States does not pursue this line of argument in its second written submission. The United States does not offer any response in that submission to the assertion of the European Union that the information provided by the South Carolina Department of Revenue indicates that applications for tax exemptions provided for in South Carolina Code section 12-37-220(B)(33)(a) or (b) had been received only from Boeing. The only argument of the United States in its second written submission with respect to whether the subsidy provided through the LCF property tax exemption is specific under Article 2.1(c) is that "property tax exemptions in general are widely available and widely used in South Carolina"[2487], an argument that depends on treating the LCF property tax exemption as part of a broader property tax exemption scheme. We have rejected that argument as insufficiently substantiated.

8.1003. We therefore find that the evidence before us supports the argument of the European Union that Boeing has been the only user of the LCF property tax exemption provided for in South Carolina Code section 12-37-220(B)(33)(b). In our view the subsidy provided through the LCF tax exemption is specific within the meaning of Article 2.1(c) because of the "use of {the} subsidy programme by a limited number of certain enterprises". We note that there is evidence to support the view that the LCF property tax exemption was tailored specifically for Boeing.[2488] To find a subsidy specific within the meaning of Article 2.1(c) where the subsidy has been used by only one company and the evidence suggests that the subsidy was tailored specifically for that company is consistent with the approach taken by the original panel in finding that certain subsidies provided to Boeing under the Illinois Corporate Headquarters Relocation Act were specific under Article 2.1(c).[2489] We also recall, in this regard, our observations above on the meaning of the phrase "use of a subsidy programme by a limited number of certain enterprises" in Article 2.1(c). We are satisfied that the fact that only Boeing has used the subsidy provided through the LCF property tax exemption clearly indicates the existence of a limitation of access to the subsidy. In making this finding that the subsidy at issue here is specific within the meaning of

[2483] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 851.
[2484] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 752 and 753.
[2485] United States' first written submission, para. 656 (referring to United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, (Exhibit USA-198) (BCI), para. 162).
[2486] European Union's second written submission, para. 698; and South Carolina Department of Revenue FOIA Correspondence, 5 July 2012, (Exhibit EU-1124).
[2487] United States' second written submission, para. 580.
[2488] See para. 8.996 above.
[2489] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras,. 7.918 and 7.920. See also para. 8.1046 below.

the second sentence of Article 2.1(c) on the grounds that it has been used by "a limited number of certain enterprises" we have also considered the last sentence of Article 2.1(c), which requires that account be taken of "the extent of diversification of economic activities within the jurisdiction of the granting authority, as well as of the length of time during which the subsidy programme has been in operation". We see no basis in the facts before us to support an argument that, notwithstanding that the subsidy provided through the LCF tax exemption has been used by only one company, the subsidy should not be considered to be specific because of the limited extent of diversification of economic activities in South Carolina or the limited length of time during which the programme has been in operation. We note that the United States does not make any such argument.

8.1004. **We therefore conclude that the European Union has established that the subsidy provided through the LCF property tax exemption is *de facto* specific within the meaning of Article 2.1(c) of the SCM Agreement. Having found that the subsidy is specific within the meaning of Article 2.1(c), we do not consider it necessary to address the parties' arguments under Articles 2.1(a) and 2.1(b)**.[2490]

8.1005. Finally, we note that the European Union also argues that the subsidy provided to Boeing through the LCF property tax exemption is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.8.10.4 The amount of the subsidy

8.1006. The parties disagree on the amount of the subsidy to Boeing's LCA division from the LCF property tax exemption. Their disagreement focuses on the number of Boeing LCFs in operation and subject to the exemption in 2009, as well as the rate of depreciation used by the European Union in its amount calculation. The European Union estimates the amount of the financial contribution conferred by the LCF property tax exemption, which in the case of foregoing of revenue otherwise due corresponds to the amount of the subsidy, at USD 25.82 million between 2013 and 2015.[2491] This amount was calculated on the basis of depreciated estimates of the value of each of Boeing's four tax-exempt LCFs at the time they entered into service.[2492] The United States argues that the European Union has significantly overstated the amount of the financial contribution because it has erroneously assumed that three LCFs were subject to South Carolina property tax in 2009, when there is no basis to conclude that Boeing operated more than a single LCF in 2009.[2493] The United States argues that the European Union's calculation in fact understates the initial values to Boeing of each LCF[2494], and disregards the actual LCF values provided by the United States.[2495] In addition, the United States argues that the European Union has arbitrarily selected a 5% rate of depreciation to estimate the value of the LCFs in future years.[2496] The United States provides an estimate of the value to Boeing of the LCF property tax exemption as USD **[***]** between 2012 and 2014.[2497]

8.1007. The parties first disagree on the number of Boeing LCFs in operation in 2009 and subject to the challenged tax exemption in that year. The European Union explains that its position that three LCFs were in operation in 2009 is based on the Expert Report of Mr Hugh McTeague[2498], which in turn relies on Individual Aircraft Reports from ACAS, an industry database.[2499] The

[2490] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.928.
[2491] South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 4. Also see European Union's first written submission, para. 650.
[2492] European Union's first written submission, para. 650 and fn 1473; also see para. 652 and fn 1476; and H. McTeague, *Aircraft Valuation for a Boeing B747-400 LCF ("Dreamlifter")*, (21 November 2012), (Exhibit EU-27); and South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 4.
[2493] United States' first written submission, para. 613.
[2494] United States' first written submission, para. 612.
[2495] United States' second written submission, para. 573.
[2496] United States' first written submission, para. 612.
[2497] Boeing "But-For" LCF Exemption Value and Depreciation Information, (Exhibit USA-336) (BCI).
[2498] H. McTeague, *Aircraft Valuation for a Boeing B747-400 LCF ("Dreamlifter")*, (21 November 2012), (Exhibit EU-27).
[2499] ACAS Individual Aircraft Reports on Boeing's Large Cargo Freighters, (Exhibit EU-1125).

information in the ACAS reports is consistent with information contained in Boeing's tax exemption applications for 2010 and 2011[2500], as well as with statements of Boeing officials.[2501] The European Union explains that it has not used the figures provided by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU because **[***]**. Furthermore, the valuations provided by the United States do not indicate a source for the listed figures, lack markings indicating an official government document, and do not associate listed values with particular LCFs.[2502]

8.1008. We do not find that the European Union's reliance on the information contained in Boeing's tax exemption application for 2010 lends support to its position that three LCFs were in operation in 2009. The European Union explains in its second written submission that it was limited to relying on Boeing's 2010 and 2011 applications because these were the only ones provided to it through its request under South Carolina's Freedom of Information Act.[2503] The tax exemption application for 2010 indicates that **[***]**.[2504] We agree with the United States that this reveals nothing about the number of LCFs for which Boeing requested an exemption in 2009.[2505] The only information shown by **[***]**.[2506] This cannot serve as support for the proposition that three LCFs were in operation that year.

8.1009. However, through other evidence it relies on, the European Union has established that three LCFs were indeed in operation in 2009. The European Union's subsidy estimate at page 4 of Exhibit EU-39 identifies the three LCFs that were allegedly in operation and subject to the exemption in 2009 as the aircraft with registration numbers N747BC, N780BA, and N249BA. According to the ACAS reports on which the European Union's Expert Report relies, the LCF N747BC was converted to a freighter in 2006, and after having its operational role changed to "research/development" in 2006, had its operational role changed to "freighter" in 2007.[2507] The LCF N780BA was converted to a freighter and had its operational role changed to "freighter" in 2007[2508], while the LCF N249BA was converted to a freighter and had its operational role changed to "freighter" in 2008.[2509] This information from the ACAS reports is corroborated by certain statements by a Boeing official. A Vice President of Marketing for Boeing Commercial Airplanes stated in a blog post dated June 2008 that a third LCF Dreamlifter "will enter into service by early July" 2008[2510], to accompany the "first two" that "have been in use since 2007".[2511] The dates referred to in these statements are in line with the information from the ACAS reports, which show that the operational roles of the LCFs with registration numbers N747BC and N780BA were changed to "freighter" in 2007, while the change for N249BA was made in 2008. This information suggests to us that by 2009, there were indeed three Boeing LCFs in operation.

8.1010. The United States has failed to rebut the case made by the European Union in support of its position that three LCFs were in operation in 2009. The evidence submitted by the United States in response to Panel question No. 144 and intended to settle the question of how many LCFs were in operation in 2009 fails in its task. We agree with the European Union that it is not clear that Exhibit USA-528[2512] is, in fact, Boeing's 2009 application for the LCF property tax exemption. It is unclear whether the property listed in that exhibit is an airplane. In Boeing's applications for 2010 and 2011, the subject property is identified by vehicle identification numbers

[2500] South Carolina Department of Revenue, Boeing Applications for Property Tax Exemptions, 28 April 2010, (Exhibit EU-521).
[2501] R. Tinseth, Boeing Commercial Airplanes, "Three of four", *Randy's Journal blog post*, 12 June 2008, (Exhibit EU-1126).
[2502] European Union's second written submission, para. 689.
[2503] European Union's second written submission, para. 687.
[2504] European Union's first written submission, para. 644 and fn 1466.
[2505] United States' first written submission, para. 613.
[2506] See South Carolina Department of Revenue, Boeing Applications for Property Tax Exemptions, 28 April 2010, (Exhibit EU-521), pdf p. 2.
[2507] ACAS Individual Aircraft Reports on Boeing's Large Cargo Freighters, (Exhibit EU-1125), p. 12.
[2508] ACAS Individual Aircraft Reports on Boeing's Large Cargo Freighters, (Exhibit EU-1125), p. 7.
[2509] ACAS Individual Aircraft Reports on Boeing's Large Cargo Freighters, (Exhibit EU-1125), p. 2.
[2510] R. Tinseth, Boeing Commercial Airplanes, "Three of four", *Randy's Journal blog post*, 12 June 2008, (Exhibit EU-1126).
[2511] R. Tinseth, Boeing Commercial Airplanes, "Three of four", *Randy's Journal blog post*, 12 June 2008, (Exhibit EU-1126).
[2512] While the United States refers to Exhibit USA-530 (BCI) in its response to Panel question No. 144, para. 295, we understand the correct reference to be to Exhibit USA-528 (BCI). (See European Union's comment on United States' response to Panel question No. 144, fn 572).

matching FAA registration numbers for Boeing LCF, the type of LCF and the make "747". Exhibit USA-528 instead reads **[***[2513]**]**. The European Union further notes that the application pre-dates the enactment of the LCF tax exemption legislation, and therefore seems to concern some other exemption.[2514]

8.1011. Other evidence provided by the United States also fails to rebut the case made by the European Union. We agree with the European Union that Exhibit USA-222, entitled "LCF Values", lacks any indication of the source of the listed figures.[2515] Exhibit USA-336 provided by the United States in its second written submission, entitled "Boeing 'But For' LCF Exemption Value and Depreciation Information"[2516] and described as "a spreadsheet provided by Boeing's Corporate Tax Department"[2517], fails to lend support to the United States' position. The United States contends that the exhibit reconfirms the original information provided in response to the Panel's request for information pursuant to Article 13 of the DSU[2518], namely Exhibit USA-222. However, we have difficulty seeing how Exhibit USA-336 confirms the information in Exhibit USA-222, when the information seems rather contradictory: in Exhibit USA-222, values are shown **[***]**, whereas in Exhibit USA-336 values are shown **[***]**. The latter exhibit states that only one LCF had its first year of exemption in 2009, and that **[***]** The Exhibit does not explain this statement further, nor has the United States explained or argued this anywhere in its submissions. To us, Exhibit USA-336 seems to concede that **[***]**. However, this is not an argument the United States has made anywhere in its submissions.

8.1012. In sum, we take the view that the United States has failed to rebut the case made by the European Union that three Boeing LCFs were in operation and subject to the LCF property tax exemption in 2009.

8.1013. The second point of disagreement between the parties concerns the depreciation rate used by the European Union in its amount calculation. Section 12-37-930 of the South Carolina Code provides that "{t}he fair market value for vehicles, watercraft, and aircraft must be based on values derived from a nationally recognized publication of vehicle valuations, except that the value may not exceed ninety-five percent of the prior year's value."[2519] The European Union argues that, lacking published values for Boeing's unique customised LCFs, it used the valuation method provided in South Carolina tax law, namely 95% of the previous year's value, which it considers to be the least arbitrary basis for assessing depreciation based on publicly available information.[2520] The United States argues that the European Union assumes the lowest possible depreciation rate to be applicable to the LCFs, without providing any explanation of why that figure was chosen and why it should be considered an accurate depreciation rate for LCFs. Thus, even aside from the fact that the Panel has actual depreciated figures in Exhibit USA-222 (BCI), the European Union has failed to provide an estimate upon which the Panel can reasonably rely.[2521]

8.1014. While the United States objects to the depreciation rate selected by the European Union, it does not propose any more reasonable rate of depreciation for the Panel to use instead. While Exhibit USA-336 (BCI), submitted by the United States in its second written submission, **[***]**, the United States fails to explain this statement any further.

8.1015. In light of the fact that the depreciation rate used by the European Union is authorised under South Carolina tax law, and the United States has failed to provide a more reasonable rate of depreciation, or a more reasonable life-time for the asset over which to apply depreciation, we are of the view that the 5% rate proposed by the European Union is a reasonable rate of depreciation.

[2513] South Carolina Department of Revenue, Boeing Application for Property Tax Exemption, PT-401, 2009, (Exhibit USA-528) (BCI).

[2514] European Union's comment on United States' response to Panel question No. 144, paras. 387-390.

[2515] European Union's second written submission, para. 689.

[2516] There is no indication what "But-For" refers to.

[2517] United States' second written submission, para. 572.

[2518] United States' second written submission, para. 574.

[2519] Assessment of Property Taxes, *S.C. Code*, Title 12, chapter 37, (Exhibit EU-523), section 12-37-930.

[2520] European Union's second written submission, para. 690.

[2521] United States' first written submission, para. 614; second written submission, paras. 573 and 574. Also see para. 8.1011 above.

8.1016. We therefore consider the European Union's estimate of the amount of the subsidy at USD 25.82 million between 2013 and 2015 to be reasonable.[2522]

8.2.8.10.5 Conclusion

8.1017. In light of our above findings, we conclude that the European Union has established that the property tax exemption for Boeing's large cargo freighters provided in South Carolina Code section 12-37-220(B)(33)(b) involves a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement, in the amount of USD 25.82 million between 2013 and 2015.

8.2.8.11 Whether the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials are specific subsidies to Boeing

8.2.8.11.1 Introduction

8.1018. In paragraph 24 of its panel request, the European Union identifies as among the Project Gemini-related subsidies presently benefiting Boeing:

> Exemptions from state sales and use taxes for aircraft fuel, computer equipment, and construction materials, established by Sections 2, 3, and 4 of H3130, respectively, and codified at S.C. Code § 12-36-2120(9)(e) and (f), (65)(b), and (67).

8.1019. The European Union argues that these above-referenced provisions exempt Boeing's purchases of aircraft fuel, computer equipment, and construction materials from South Carolina and local sales and use tax, and thereby constitute a specific subsidy to Boeing within the meaning of Articles 1 and 2 of the SCM Agreement.

8.1020. Retail sales and retail purchases of tangible personal property are subject to South Carolina sales and use tax, respectively. A 6% tax applies to gross proceeds of sales by persons engaged in the business of selling tangible personal property at retail in South Carolina[2523], as well as to the sales price of tangible personal property purchased at retail for use, storage, or other consumption in the state.[2524] Local governments also have the authority to impose certain additional local sales and use taxes.[2525] South Carolina tax legislation nonetheless provides numerous exclusions and exemptions from sales and use taxes.[2526]

8.1021. H3130, signed into law on 30 October 2009, created three sales and use tax exemptions with respect to: (a) fuel sold to manufacturers, electric power companies, and transportation companies for "the generation of motive power for test flights of aircraft by the manufacturer of the aircraft" and for "the transportation of an aircraft prior to its completion from one facility of the manufacturer of the aircraft to another facility of the manufacturer of the aircraft, not including the transportation of major component parts for construction or assembly, or the transportation of personnel"[2527]; (b) the sales of "computer equipment … used in connection with a manufacturing facility"[2528]; and (c) the sales of "construction materials used in the construction of a new or expanded single manufacturing facility".[2529] These permanent exemptions, effective from November 2009, are available to taxpayers that: (a) invest at least USD 750 million in real or personal property in a single manufacturing facility over a seven-year period; (b) create 3,800 full-

[2522] We therefore do not consider it necessary to address the European Union's request for the Panel to "draw reasonable inferences". (European Union's second written submission, para. 691).
[2523] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), sections 12-36-910(A) and 12-36-1110.
[2524] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), sections 12-36-1110 and 12-36-1310.
[2525] See South Carolina Tax Incentives, (Exhibit EU-494), p. 207.
[2526] See, generally, The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(1)-(80). Also see South Carolina Tax Incentives, (Exhibit EU-494), pp. 210, 212, and 213.
[2527] H3130, section 2, enacted as The South Carolina Sales and Use Tax Act, *S. C. Code*, Title 12, chapter 36, (Exhibit EU-493), sections 12-36-2120(9)(e) and (f).
[2528] H3130, section 3, enacted as The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(65)(B).
[2529] H3130, section 4, enacted as The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(67).

time new jobs at the manufacturing facility over the seven-year period[2530]; and (c) notify the South Carolina Department of Revenue of their intent to use the exemption prior to 15 October 2015.[2531]

8.2.8.11.2 Main arguments of the parties

8.1022. The European Union argues that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130, are a specific subsidy within the meaning of Articles 1 and 2.

8.1023. The European Union argues that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130, involve a financial contribution by a government within the meaning of Article 1.1(a)(1)(ii), namely the foregoing of government revenue otherwise due. In its argumentation, the European Union follows the three-step approach to analysing claims under Article 1.1(a)(1)(ii) set out by the Appellate Body in the original proceeding.[2532] First, the European Union identifies the tax treatment applicable to goods purchased by Boeing in South Carolina (or outside of South Carolina for use within South Carolina) as a permanent exemption from sales and use taxes for three types of goods, namely aircraft fuel, computer equipment, and construction materials.[2533] The reason for this tax treatment; namely, to reduce Boeing's South Carolina tax liability, is evident from the legislative context in which the exemptions were adopted, as well as their terms and conditions.[2534] Second, the European Union identifies the benchmark tax treatment of comparable taxable activity of comparable taxpayers as the tax treatment of purchases of aircraft fuel, computer equipment, or construction materials by any other manufacturer in South Carolina, that is a sales and use tax rate of 7% at state-level and 8% in Charleston County.[2535] Third, a comparison of this benchmark tax treatment with the treatment received by Boeing, in light of the reasons for enacting the exemptions, clearly shows the foregoing of government revenue otherwise due.[2536] The European Union estimates the amount of the financial contribution at USD 49.14 million between 2010 and 2035.[2537]

8.1024. The European Union argues that the challenged tax exemptions confer a benefit within the meaning of Article 1.1(b).[2538]

8.1025. The European Union also argues that the challenged tax exemptions are specific within the meaning of Articles 2.1(a) and 2.1(c). First, the exemptions are *de jure* specific within the meaning of Article 2.1(a) since the statutory language establishing these exemptions explicitly restricts the recipients to certain enterprises, namely those with Boeing's precise investment profile.[2539] Second, the tax exemptions are *de facto* specific within the meaning of Article 2.1(c)

[2530] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), sections 12-36-2120(9)(E)(i) and (ii), (9)(F)(i) and (ii), 65(B)(i) and (ii), and 67(i) and (ii).

[2531] South Carolina Act No. 124, *S.C. Code*, Acts 1092, H3130 (30 October 2009), (Exhibit EU-466), sections 2(B), 3(B), and 4(B). Also see South Carolina Tax Incentives, (Exhibit EU-494), pp. 215, 217, and 218. We note that the exemption on construction materials was effectively subsumed in July 2011 by a previously enacted exemption for construction materials used in the construction of a single manufacturing or distribution facility that invests at least USD 100 million over 18 months at a single site in South Carolina. (See *S.C. Code*, section 12-36-2120(67)). Also see European Union's first written submission, fn 1389; and United States' first written submission, para. 596.

[2532] European Union's first written submission, para. 594 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814).

[2533] European Union's first written submission, para. 595.

[2534] European Union's first written submission, para. 596; second written submission, para. 644.

[2535] European Union's first written submission, paras. 597 and 588; second written submission, paras. 645 and 646.

[2536] European Union's first written submission, para. 598.

[2537] European Union's first written submission, paras. 599-601; second written submission, paras. 647-651. The European Union argues that its estimate takes into account the fact that the challenged exemption for construction materials under section 12-36-2120(67) of the South Carolina Code was effectively subsumed by another exemption in July 2011 subject to different eligibility criteria. (See European Union's second written submission, fn 1089. See also European Union's second written submission, para. 652; and comments on United States' response to Panel question No. 150, paras. 26 and 27).

[2538] European Union's first written submission, paras. 602 and 603 (referring to Panel Report, *US – FSC*, para. 7.103). The European Union is of the view that the entirety of the financial contribution can be considered to confer a benefit to Boeing. (European Union's first written submission, para. 603).

[2539] European Union's first written submission, para. 604; second written submission, para. 660.

since, to the best of the European Union's knowledge, Boeing is the only taxpayer to benefit from these exemptions.[2540] Third, the European Union rejects the United States' claim that Article 2.1(b) shows that the exemptions are not specific, since the very specific and narrow criteria governing eligibility for the exemptions clearly favour certain enterprises over others.[2541] The European Union also argues that the Panel should assess the challenged exemptions individually, rather than as part of a broader single programme as argued by the United States.[2542]

8.1026. The United States argues that the European Union fails to establish the existence of a financial contribution with respect to the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130. Moreover, the European Union overstates any financial contribution and benefit provided by the exemptions, and does not demonstrate that they are specific.

8.1027. The United States argues that the European Union has not met its burden of proof for establishing the existence of a financial contribution, since it fails in its application of the Appellate Body's three-step analysis for determining the existence of revenue foregone.[2543] First, the European Union fails to identify the tax treatment applicable to Boeing's sales and use taxes, because it restricts its examination to the specific exemptions for fuel, computer equipment, and construction materials, and fails to address the reason for applying those exemptions in the full context of the South Carolina sales and use tax system and the availability of equivalent treatment to numerous other entities in the state.[2544] Second, the European Union fails in the identification of the tax treatment of sales and use taxes of comparably situated taxpayers, by making the unsupported assertion that there are no comparable taxpayers. Third, the European Union fails to carry out a comparison of Boeing's tax treatment and that of other comparably situated taxpayers in the context of an examination of the structure of the domestic tax regime and its organising principles.[2545] Notwithstanding the above, the European Union overstates the value of the challenged exemptions to Boeing, since it does not even refer to the actual figures provided by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU, and disregards the availability of other sales and use tax exemptions to Boeing.[2546]

8.1028. The United States also argues that the challenged tax exemptions are not specific within the meaning of Article 2. First, the sales and use tax exemptions are not specific within the meaning of Article 2.1(a) since they are not explicitly limited to certain enterprises. The European Union does not in fact claim that the exemptions are explicitly limited to Boeing or to aerospace manufacturing, but instead claims that they are limited to enterprises with Boeing's investment profile.[2547] Second, an analysis under Article 2.1(b) confirms that the exemptions are not specific, since they are available to any manufacturer meeting the "objective criteria" on notification, investment, and job creation. These criteria are automatic and strictly adhered to.[2548] Third, the challenged exemptions are not specific within the meaning of Article 2.1(c).[2549] In addition to the above, the European Union's specificity claims under both Articles 2.1(a) and 2.1(c) ignore the fact that the challenged exemptions form part of a scheme to provide widely available exemptions to a variety of industries in order to ensure that the state's tax structure does not impede investment and other economic activities.[2550] Finally, in response to the Panel's request for information pursuant to Article 13 of the DSU, the United States indicated that taxpayers other

[2540] European Union's first written submission, para. 605.
[2541] European Union's second written submission, fn 1107.
[2542] European Union's second written submission, paras. 656-659 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 849 and 851).
[2543] United States' first written submission, para. 587 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 812-814).
[2544] United States' first written submission, para. 588; second written submission, para. 583.
[2545] United States' first written submission, para. 588.
[2546] United States' first written submission, paras. 589-597; second written submission, paras. 584-590.
[2547] United States' first written submission, para. 658.
[2548] United States' first written submission, para. 660; second written submission, para. 592.
[2549] United States' first written submission, para. 661.
[2550] United States' first written submission, paras. 591 and 657-661 (referring in particular to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.198).

than Boeing have notified the South Carolina Department of Revenue of their intention to use the challenged tax exemptions.[2551]

8.2.8.11.3 Evaluation by the Panel

8.2.8.11.3.1 Whether there is a financial contribution

8.1029. The first question before the Panel is whether the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130, constitute a financial contribution through the foregoing of government revenue that is otherwise due, within the meaning of Article 1.1(a)(1)(ii). The European Union's position is that these exemptions were specifically designed to exempt Boeing's purchases of aircraft fuel, computer equipment, and building materials from normal rates of South Carolina and local sales and use tax. The United States' position is that the European Union fails to consider the availability of equivalent treatment to numerous other entities in the state.

8.1030. As in the case of the FILOT agreements and the LCF property tax exemption challenged in this proceeding, the parties structure their arguments according to the three-step analysis set out by the Appellate Body in the original proceeding for determining when revenue that is otherwise due has been foregone. As we have explained in more detail in the context of the FILOT agreements, we consider it essential to look at the broader legal rationale underlying this analysis before studying its specific stages.[2552] In particular, the Appellate Body has observed that the foregoing of revenue otherwise due implies that less revenue has been raised by the government than would have been raised in a different situation, and crucially that "the word 'foregone' suggests that the government has given up an entitlement to raise revenue that it could 'otherwise' have raised".[2553] This entitlement does not exist in the abstract, and must therefore be assessed against some defined, normative benchmark.[2554]

8.1031. Assessing the challenged sales and use tax exemptions in light of the guidance provided by the Appellate Body, we are of the view that these measures involve a financial contribution within the meaning of Article 1.1(a)(1)(ii), because they are instances of a government giving up an entitlement to raise revenue that it could otherwise have raised. As in the case of the LCF property tax exemption[2555], the very nature of the challenged measures as tax *exemptions* suggests that they are instances of the taxing authority giving up an entitlement to raise revenue that it could otherwise have raised under the South Carolina sales and use tax rules. Furthermore, similar to the Boeing FILOT Agreement and the Project Emerald FILOT Agreement challenged in this proceeding, the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials are conditional tax incentives available to companies able and willing to make investments of a certain magnitude in the State of South Carolina. They embody a *quid pro quo* arrangement whereby an entity is granted some form of tax advantage in exchange for fulfilling set requirements, and conversely a taxing authority relinquishes an existing entitlement to raise revenue that it could otherwise raise where an entity fulfils the set requirements.[2556]

8.1032. Our tentative conclusion that the challenged sales and use tax exemptions amount to revenue foregone finds further support in the application of the three-step analysis set out by the Appellate Body in the original proceeding. Both parties refer extensively to this analysis, but disagree on its application to the present situation.

8.1033. First, the parties disagree on the framing of the relevant tax treatment applicable to Boeing, as well as the reasons behind that treatment. The Appellate Body stated in the original proceeding, in the context of income tax, that the first step in determining the existence of the foregoing of government revenue otherwise due entails "identify{ing} the tax treatment that

[2551] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 72, para. 155; first written submission, paras. 662 and 663, and fn 1025.

[2552] See paras. 8.868 and 8.869 above.

[2553] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2554] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 806 (referring to Appellate Body Report, *US – FSC*, para. 90).

[2555] See para. 8.990 above.

[2556] See para. 8.873 above.

applies to the income of the alleged recipients. Identifying such tax treatment will entail consideration of the objective reasons behind that treatment and, where it involves a change in a Member's tax rules, an assessment of the reasons underlying that change".[2557] The European Union identifies the tax treatment applicable to goods purchased by Boeing in South Carolina (or outside of South Carolina for use within South Carolina) as a permanent exemption from sales and use taxes for three types of goods, namely aircraft fuel, computer equipment, and construction materials.[2558] The European Union argues that the reasons for this tax treatment are to materially reduce the expense to Boeing of constructing those portions of Project Gemini not already provided by South Carolina, outfitting the facilities with the computer equipment necessary for a state-of-the-art LCA production facility, and flying the finished 787 aircraft to be painted at Boeing's facility in Amarillo, Texas, and back. These reasons are evident from the following: the exemptions were enacted as part of H3130, the Boeing incentive legislation; the eligibility criteria for the exemptions match Boeing's investment and job creation commitments in South Carolina; the exemptions are only available for a limited period of time; and the exemptions are tailored to the specific needs of Boeing's manufacturing activities in South Carolina.[2559] By contrast, the United States takes the view that the European Union construes the object of the revenue foregone analysis overly narrowly by restricting its examination to the exemptions for fuel, computers, and construction materials[2560], and merely assumes that South Carolina sought to give incentives to Boeing without considering the availability of equivalent treatment to numerous other entities in the state.[2561]

8.1034. We consider the proper object of the revenue foregone analysis to be the tax treatment that applies to Boeing's purchases of aircraft fuel, computer equipment, and construction materials in South Carolina (or outside of South Carolina for use within South Carolina), namely a permanent exemption from sales and use taxes by virtue of the three exemptions enacted as part of H3130. Indeed, the evidence before the Panel shows that Boeing has notified the South Carolina Department of Revenue of its intention to use all three exemptions[2562], and has been granted exemptions for such purchases.[2563] As a result, all of Boeing's purchases of computer equipment are exempt from sales and use tax by virtue of section 12-36-2120(65)(b) of the South Carolina Code; its purchases of construction materials used in the construction of a new or expanded single manufacturing facility are exempt by virtue of section 12-36-2120(67); and its purchases of aircraft fuel are exempt by virtue of sections 12-36-2120(9)(e) and (f). We understand such exemptions to be permanent on account of Boeing having fulfilled the investment, job creation and notification requirements. There is no evidence before us that Boeing has used any sales and use tax exemptions for aircraft fuel, computer equipment or construction materials other than those challenged in this proceeding.

8.1035. Furthermore, with respect to the objective reasons behind this treatment, there is evidence on the record before us to support the European Union's position that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials were intended to reduce Boeing's tax liability. In particular, we note that the eligibility criteria for the exemptions, namely a minimum investment of USD 750 million and the creation of a minimum of 3.800 full-time jobs at a single manufacturing facility over a seven-year period, precisely match the commitments made by Boeing to South Carolina. Furthermore, the exemption on aircraft fuel, which applies to "the generation of motive power for test flights of aircraft by the manufacturer" and to "the transportation of an aircraft prior to its completion from one facility of the manufacturer of the aircraft to another facility of the manufacturer of the aircraft, not including the transportation of major component parts for construction or assembly, or the transportation of personnel" seem tailor-made to the circumstances of Boeing's operations in South Carolina. Added to the above circumstances is the fact that the exemptions on aircraft fuel, computer equipment, and construction materials, while being permanent, are only available between November 2009 and October 2015. Moreover, certain statements by South Carolina authorities support this view. Indeed, a statement of the South Carolina Board of Economic Advisors observes, in the context of

[2557] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 812.
[2558] European Union's first written submission, para. 595; second written submission, para. 644.
[2559] European Union's first written submission, para. 596; second written submission, para. 644.
[2560] See United States' first written submission, para. 588; second written submission, para. 583.
[2561] United States' first written submission, para. 588.
[2562] In November 2009 for construction materials, in June 2010 for computer equipment, and in March 2011 for aircraft fuel. (See South Carolina Department of Revenue Notifications, (Exhibit US-13-292) (BCI)).
[2563] South Carolina Department of Revenue Exemptions, (Exhibit US-13-293) (BCI).

sections on all three exemptions, that "{s}ince we are not currently collecting any tax revenue from a manufacturer that meets these criteria, this section is not expected to reduce state General Fund revenue in FY2009-10." This statement was made at the time that H3130 was passed, just prior to the establishment of Project Gemini.[2564] The European Union also highlights a statement by the then-Governor of South Carolina in the press to the effect that Boeing would receive "some sales-tax exemptions specific to the company", adding that "{t}here are some special incentives in terms of exemptions that were important to make the case for South Carolina versus other places".[2565] Finally, we note that a letter from Boeing notifying the South Carolina Department of Revenue of its intention to use the exemption relating to construction materials in November 2009 suggests a link between Boeing's decision to locate operations in South Carolina and a sales tax incentive.[2566]

8.1036. Second, the parties disagree on the identification of the benchmark tax treatment for comparison. The Appellate Body stated in the original proceeding, in the context of income tax, that determining the existence of the foregoing of government revenue otherwise due entails "identify{ing} a benchmark for comparison – that is, the tax treatment of comparable income of comparably situated taxpayers".[2567] The European Union argues that the benchmark tax treatment is the tax treatment of purchases of aircraft fuel, computer equipment, and construction materials by any other manufacturer in South Carolina, which is the application of South Carolina's normal rates of state and local sales and use tax. The United States rejects the European Union's position, and seems to suggest that other comparable taxpayers have been granted similar treatment, by referring to prior incentive packages granted to large companies investing in South Carolina.[2568]

8.1037. We do not agree with the United States' position, but rather consider the appropriate comparator to be the tax treatment applicable to purchases of aircraft fuel, computer equipment, and construction materials by other manufacturers in South Carolina (or for use in South Carolina). We see a parallel between the United States' arguments here and with respect to the FILOT agreements discussed in Section 8.2.8.7 above. As in the case of the FILOT agreements, the United States considers that "comparably situated taxpayers" are other large industrial taxpayers in South Carolina.[2569] As we explain in that context, we find problematic the circularity of the United States' argument that "comparably situated taxpayers" are other taxpayers eligible for the same favourable treatment because they meet the same eligibility requirements. This would mean that the group of comparably situated taxpayers is defined by the criteria attached to the very measure that is alleged to give rise to the foregoing of government revenue otherwise due. We are of the view that the United States' approach goes against the guidance provided by the Appellate Body of comparable situations in the context of revenue foregone. The comparison suggested by the United States between the tax treatment of one individual taxpayer under a challenged measure and the treatment of other taxpayers who qualify for the same tax treatment is at odds with cases in which the Appellate Body has articulated the comparability test, which examined measures applicable to a more abstractly identified group of taxpayers, in contrast with the very same narrow benchmark suggested by the United States.[2570]

8.1038. Turning to the tax treatment applicable to purchases of aircraft fuel, computer equipment, and construction materials by other manufacturers in South Carolina (or for use in South Carolina), we observe on the one hand that South Carolina state law imposes a sales and use tax rate of 6% on sales and purchases in South Carolina, or for consumption in South Carolina (while also granting local governments the authority to impose certain additional local sales and

[2564] South Carolina Board of Economic Advisors, Statement of Estimated State Revenue Impact, H.B.3130, 27 October 2009, (Exhibit EU-507), pdf pp. 3 and 4. Also see European Union's first written submission, para. 605.

[2565] G. Ratnam, "Boeing Incentives for South Carolina Plant May Be $400 Million", *Bloomberg*, 20 November 2009 (Exhibit EU-508), pdf p. 2.

[2566] South Carolina Department of Revenue Notifications, (Exhibit US-13-292) (BCI), pdf p. 3: "I am writing to confirm my understanding that The Boeing Company's … official announcement to the Governor and state of South Carolina on Wednesday October 28th 2009 regarding the selection of Charleston, SC, as the home for the second manufacturing line of the 787 serves as Boeing's notification under the requirements of amended Section 12-36-2120(67) of the 1976 Code of our intention to utilize the sales tax incentive under this section."

[2567] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 813.

[2568] United States' first written submission, para. 588 (referring to section III.K.2.a of the first written submission). Also see European Union's second written submission, fn 1073.

[2569] United States' first written submission, para. 588.

[2570] See paras. 8.877-8.880 above.

use taxes). On the other hand, the United States has presented some evidence of other exemptions contained in section 12-36-2120 of the South Carolina Code that could potentially apply to purchases of aircraft fuel, computer equipment, and construction materials by other manufacturers in South Carolina (or for use in South Carolina).[2571] However, the United States has not explained why such other exemptions would constitute the appropriate benchmark tax treatment. In particular, the United States has provided no reasoning to support a finding that the appropriate benchmark tax treatment for assessing a tax exemption should be other tax exemptions. Furthermore, the European Union correctly observes that some of the exemptions referred to by the United States have a narrower application than the exemptions challenged in this proceeding.[2572] In light of our review of the relevant tax structure and principles, we consider the appropriate benchmark tax treatment to be the sales and use tax rates imposed by the State of South Carolina and local governments.

8.1039. The third and final step of the Appellate Body's three-step analysis concerns a comparison of the challenged tax treatment with the benchmark tax treatment, in light of the reasons for the challenged treatment.[2573] In this instance, a comparison of Boeing's tax treatment under the challenged sales and use tax exemptions, taking into account the reasons for that treatment; i.e. a permanent exemption from sales and use taxes on purchases of aircraft fuel, computer equipment, and construction materials, with the benchmark tax treatment indicates the foregoing of government revenue otherwise due.

8.1040. **We therefore find that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130, each involve a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement.**

8.2.8.11.3.2 Whether there is a benefit

8.1041. While the parties disagree on the amount of the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials[2574], the United States does not appear to contest the European Union's argument that the sales and use tax exemptions confer a benefit within the meaning of Article 1.1(b). In light of our finding on financial contribution above, **we therefore find that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, enacted as part of H3130, confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement.[2575]**

8.2.8.11.3.3 Whether the subsidy is specific

8.1042. With respect to whether the subsidy provided by the sales and use tax exemptions for aircraft fuel, computer equipment and construction materials is specific within the meaning of Article 2.1, the parties mainly disagree on the level at which the analysis should be conducted. The United States argues that the specificity determination should be carried out at the level of South Carolina sales and use tax exemptions collectively, because the exemptions challenged by the European Union form part of a scheme to provide widely available exemptions to a variety of industries in order to ensure that the state's tax structure does not impede investment and other economic activities. When viewed in this context, it is clear that these exemptions are not specific within the meaning of Article 2 of the SCM Agreement.[2576] The European Union rejects the United States' position on the existence of a broader single programme, pointing to the lack of links or commonalities between exemptions. Instead, it argues that the various exemptions

[2571] United States' response to Panel question No. 150, paras. 20-22.
[2572] See European Union's comments on United States' response to Panel question No. 150, paras. 26-27; as well as State of South Carolina, Department of Revenue, S.C. Revenue Ruling #04-7, (Exhibit EU-1438), pp. 3 and 13; and State of South Carolina, Department of Revenue, S.C. Revenue Ruling #13-3, (Exhibit EU-1439), p. 3.
[2573] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 814.
[2574] See United States' first written submission, paras. 589-598; second written submission, paras. 584-590.
[2575] Also see para. 8.885 above on tax reductions conferring a benefit.
[2576] United States' first written submission, paras. 657, 660, and 661.

contained in South Carolina tax law are separate exemptions that favour certain enterprises through selective eligibility.[2577]

8.1043. As already explained above[2578], the Appellate Body emphasized in the original proceeding the need for a specificity inquiry to take into account the broader legislative framework within which a measure has been adopted.[2579] With respect to how to determine whether a subsidy forms part of a broader programme, the Appellate Body observed the following in the original proceeding:

> Determining whether multiple subsidies are part of the same subsidy is not always a clear-cut exercise. As we have explained, it requires careful scrutiny of the relevant legislation – whether set out in one or several instruments – or the pronouncements of the granting authority(ies) to determine whether the subsidies are provided pursuant to the same subsidy scheme. Another factor that may be considered is whether there is an overarching purpose behind the subsidies. Of course, this overarching purpose must be something more concrete than a vague policy of providing assistance or promoting economic growth.[2580]

The Appellate Body further observed that "where multiple subsidies are part of the same subsidy scheme, one would expect to find links or commonalities between those subsidies".[2581]

8.1044. In light of our review of the evidence before us, we disagree with the United States' position that specificity should be assessed at the level of all sales and use tax exemptions contained in South Carolina legislation. We see no single "overarching purpose"[2582], and few "links or commonalities"[2583] in the sales and use tax exemptions in section 12-36-2120 of the South Carolina Code. These exemptions are numerous and varied, and seem to serve a number of purposes. South Carolina sales and use tax law contains over 80 full exemptions. For the purposes of a South Carolina Department of Revenue tax manual, these exemptions are divided into six broad categories, namely: (a) government-related exemptions (e.g. material necessary to assemble missiles)[2584]; (b) business-related exemptions (including the three challenged exemptions); (c) agricultural exemptions (e.g. fuel used to cure agricultural products)[2585]; (d) educational exemptions (e.g. meals or food used in furnishing meals to K-12 students in schools)[2586]; (e) general public good exemptions (e.g. concession sales by non-profit organisations at festivals)[2587]; and (f) alternative energy exemptions (e.g. building material used to construct a new or renovated building in a research district and machinery or equipment located in a research district).[2588] With just under 40 exemptions, business-related exemptions are the largest category. These exemptions range from the fairly broad (e.g. exemption for depreciable assets as part of a sale of an entire business)[2589] to the very specific (e.g. exemption for sweetgrass baskets made by

[2577] European Union's second written submission, paras. 656-659 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 849 and 851).
[2578] See Section 8.2.8.6.3.3 above.
[2579] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 750 and 753. See also Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.565.
[2580] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 752.
[2581] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 851.
[2582] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 752.
[2583] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 851.
[2584] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(22).
[2585] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(18).
[2586] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(10)(a).
[2587] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(39).
[2588] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(72).
[2589] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(42).

artists of South Carolina using locally grown sweetgrass).[2590] In total, ten of these exemptions contain investment and job requirements.[2591]

8.1045. Nonetheless, we also see that a subset of the exemptions contained in section 12-36-2120 of the South Carolina Code appears to have certain "links and commonalities" with the three sales and use tax exemptions challenged in this proceeding.[2592] Certain of these exemptions operate in a similar manner to the three challenged exemptions, as they are subject to precise investment requirements (different from those under the challenged exemptions): the exemption for "material handling systems … used in the operation of a … manufacturing facility" is subject to an investment of USD 35 million over a five-year period and notification to the South Carolina Department of Revenue[2593], while the exemption effective as of July 2011 for "construction materials used in the construction of a new or expanded single manufacturing or

[2590] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(64).

[2591] In addition to the three challenged exemptions, see *S.C. Code* section 12-36-2120(51), providing an exemption for material handling systems and material handling equipment used in the operation of a distribution facility or a manufacturing facility of a taxpayer that invests at least USD 35 million in South Carolina; *S.C. Code* section 12-36-2120(65) (apparently enacted by H3130), providing an exemption for computer equipment used in connection with, and electricity and certain fuel used by, a technology intensive facility that invests USD 300 million over five years, creates at least 100 new jobs during the five years with a certain average compensation, and spends at least 60% of the USD 300 million investment on computer equipment; *S.C. Code* section 12-36-2120(67) (apparently enacted by H3130), providing an exemption for construction materials used in the construction of a single manufacturing or distribution facility, or one that serves as both, that invests at least USD 100 million at a single site in South Carolina over an 18-month period; *S.C. Code* section 12-36-2120(73), providing an exemption for amusement park rides and associated parts, machinery and equipment, requiring an investment of USD 250 million and the creation of 250 full-time jobs and 500 part-time jobs or seasonal jobs over a five-year period; *S.C. Code* section 12-36-2120(78), providing an exemption for materials and electricity used in the operation of a facility researching and testing the impact of natural hazards, requiring an investment of USD 20 million over a three-year period; and *S.C. Code* section 12-36-2120(79), providing an exemption for computer equipment, software and electricity used within a datacenter, requiring a taxpayer to invest at least USD 50 million in real or personal property or both over a five-year period, or several taxpayers to invest at least USD 75 million in such property over the same period, creating and maintaining at least 25 full-time jobs with a certain average compensation, and subject to certain notification requirements and deadlines. (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493)). Also see *S.C. Code* section 12-62-30, providing an exemption for tangible personal property purchased by a certified motion picture production company for use in connection with the filming or production of motion pictures in South Carolina for a company planning to spend at least USD 250,000 in South Carolina within a consecutive twelve-month period (referred to in South Carolina Tax Incentives, (Exhibit EU-494), p. 219).

[2592] With respect to fuel, South Carolina tax legislation provides exemptions from sales and use taxes for fuel sold to manufacturers for "the generation of heat or power used in manufacturing tangible personal property for sale", "the generation of electric power or energy for use in manufacturing tangible personal property for sale", and "the generation of motive power for transportation". (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(9)(b)-(d); see United States' first written submission, para. 659). With respect to computer equipment, South Carolina tax law provides at least four other exemptions, namely: (a) an exemption for "machines used in manufacturing … tangible personal property for sale" (S.C. Code § 12-36-2120(17) (Exhibit EU-493), section 12-36-2120(17); see United States' response to Panel question No. 150, para. 21); (b) an exemption for "material handling systems … used in the operation of a … manufacturing facility", subject to an investment of USD 35 million over a five-year period and notification to the South Carolina Department of Revenue (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(51); see United States' response to Panel question No. 150, para. 21); (c) an exemption from sales and use taxes for "machines used in research and development", being defined as "machines used directly and primarily in research and development, in the experimental or laboratory sense, of new products, new uses for existing products, or improvement of existing products" (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(56); United States' first written submission, para. 598, and response to Panel question No. 150, paras. 21 and 22); and (d) an exemption for "original or replacement computers, computer equipment, and computer hardware and software purchases used within a datacenter" (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(79); United States' response to Panel question No. 150, para. 21). With respect to construction materials, we recall that the challenged exemption was effectively subsumed in July 2011 by another exemption applying to "construction materials used in the construction of a new or expanded single manufacturing or distribution facility" subject to different eligibility criteria, namely a capital investment of USD 100 million in real and personal property at a single site in South Carolina over an eighteen-month period. (The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(67)).

[2593] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(51).

distribution facility" is subject to an investment of USD 100 million at a single site over an eighteen-month period.[2594] Despite this, we see no single "overarching purpose" in these exemptions. Rather than creating a coherent programme, these exemptions appear to form a patchwork of more or less narrowly defined exemptions. We have therefore decided to carry out the specificity analysis at the level of the challenged sales and use tax exemptions.

8.1046. Assessing specificity at the level of the sales and use tax exemptions on aircraft fuel, computer equipment, and construction materials, enacted through H3130, we are of the view that the challenged exemptions are specific within the meaning of Article 2.1(c) because of "the use of {the} subsidy programme by a limited number of certain enterprises". While the United States argues that an unidentified number of other taxpayers have notified the South Carolina Department of Revenue of their intention to use the challenged tax exemptions, there is no evidence before the Panel that these exemptions have been used by any entity other than Boeing.[2595] We therefore find that the European Union has established that Boeing has been the only recipient of the subsidies provided through the sales and use tax exemptions at issue. This is unsurprising since there is evidence to support the view that the challenged exemptions were tailored specifically for Boeing: the eligibility criteria for the three challenged exemptions precisely match Boeing's South Carolina commitments; the exemptions themselves seem tailor-made to the circumstances of Boeing's operations in South Carolina; the notification deadlines for the use of the exemptions are set to coincide with the beginning of Boeing's Gemini operations in South Carolina; and certain statements by South Carolina authorities suggest that the exemptions were designed for Boeing.[2596] We consider our finding to be in line with that of the panel in the original proceeding concerning the Illinois Corporate Headquarters Relocation Act. Indeed, the requirement of a high revenue threshold meant that Boeing was the only company to meet the eligibility criteria for certain incentives provided by the Act.[2597] The panel also noted that the narrow time window for applying for incentives under the Act only reinforced its finding that the incentives were designed specifically for Boeing.[2598]

8.1047. We also recall, in this regard, our observations above in paragraph 8.898 on the meaning of the phrase "use of a subsidy programme by a limited number of certain enterprises". We are satisfied that the fact that only Boeing has used the subsidies provided through the sales and use tax exemptions clearly indicates the existence of a limitation of access to the subsidies.

8.1048. In making this finding that the subsidies are specific within the meaning of Article 2.1(c) on the grounds that they have been used by "a limited number of certain enterprises" we have also considered the last sentence of Article 2.1(c), which requires that account be taken of "the extent of diversification of economic activities within the jurisdiction of the granting authority, as well as the length of time during which the subsidy programme has been in operation". We see no basis in the facts before us to support an argument that notwithstanding that the subsidies have been used by only one company, they should not be considered to be specific because of the limited extent of diversification of economic activities in South Carolina or the limited length of time during which the subsidies programmes have been in operation. [2599] We note that the United States does not make any such argument. Having found the challenged exemptions to be specific within the meaning of Article 2.1(c), we do not consider it necessary to address the parties' arguments under Articles 2.1(a) and 2.1(b).[2600]

8.1049. **We therefore conclude that the European Union has established that the subsidy provided through the sales and use tax exemptions on aircraft fuel, computer equipment, and construction materials enacted through H3130 is specific within the**

[2594] The South Carolina Sales and Use Tax Act, *S.C. Code*, Title 12, chapter 36, (Exhibit EU-493), section 12-36-2120(67).

[2595] See United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 72, para. 155; first written submission, paras. 662 and 663, and fn 1025; and European Union's second written submission, para. 661.

[2596] See para. 8.1035 above.

[2597] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.918.

[2598] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.923 and 7.919.

[2599] If anything, with regard to the duration during which the subsidy programmes have been in operation we consider that the fact that the notification deadlines for the use of the exemptions are set to coincide with the beginning of Boeing's Gemini operations in South Carolina is further support for our finding that the subsidies are specific in fact.

[2600] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.928.

meaning of Article 2.1 (c) of the SCM Agreement. Having found that the subsidy is specific within the meaning of Article 2.1(c), we do not consider it necessary to address the parties' arguments under Articles 2.1(a) and 2.1(b).[2601]

8.1050. Finally, we note that the European Union also argues that the subsidy provided through the sales and use tax exemptions is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.8.11.4 The amount of the subsidy

8.1051. The parties disagree on the amount of the subsidy to Boeing's LCA division from the sales and use tax exemptions for aircraft fuel, construction materials, and computer equipment. The European Union estimates the amount of the financial contribution conferred by the tax exemptions, which in the case of the foregoing of revenue otherwise due corresponds to the amount of the subsidy, at USD 49.14 million between 2010 and 2035[2602], or USD 2.25 million between 2013 and 2015.[2603] In arriving at its estimate, the European Union estimates the portion of costs attributable to purchases of construction materials and computer equipment in Boeing's reported investment in new buildings, machinery, and equipment in South Carolina.

8.1052. The United States argues that the European Union's estimate is speculative and unsupported, overvalues the alleged subsidy[2604], and fails to even refer to the actual figures provided by the United States.[2605] The United States estimates the amount of the subsidy at **[***]** in the period 2010-2012.[2606]. It does not provide an estimate of the future projected value of the subsidy in the post-2012 period.

8.1053. As to the divergences in the parties' amount estimates for the 2010-2012 period, the disagreement stems primarily from the method used by the European Union in estimating the amount of the subsidy and its rejection of the estimate provided by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU.[2607] The European Union's estimate of the subsidy (a total of USD 49.14 million between 2010 and 2035)[2608] represents the sum of an estimated amount of USD 31.14 million in the period 2010-2011, and USD 18 million in the period 2012-2035. In a first phase of its estimate, the European Union estimates the amount of the subsidy for the period 2010-2011 to be at least USD 31.14 million.[2609] Based on a declaration by an employee of the European Aeonautics Defence and Space Company N.V. (EADS), the European Union considers the costs of construction materials and computer equipment to represent **[***]** of the overall cost of buildings, and **[***]** of the overall cost of machinery and equipment, respectively.[2610] According to the cost-benefit analysis of the South Carolina Department of Commerce, Boeing's total investment of USD 1 billion in Project Gemini includes

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[2601] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.928.

[2602] European Union's first written submission, paras. 599-601; second written submission, paras. 647-651.

[2603] South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 1.

[2604] United States' first written submission, para. 598.

[2605] United States' first written submission, paras. 590-597.

[2606] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 73, para. 156; first written submission, para. 590.

[2607] The Panel had asked the United States, in question 73 of its request for information pursuant to Article 13 of the DSU, to "indicate, with supporting documents, the annual value to Boeing of each tax exemption listed in question 71" which had listed the three sales and use tax exemptions, and to "provide current projections of the annual value of each of these tax exemptions for future years". The United States responded with estimated values to Boeing of the listed tax exemptions for the tax years 2010, 2011 and 2012, and advised that it "is not aware of existing future projections". (United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 73, para. 156).

[2608] European Union's first written submission, paras. 599-601; second written submission, paras. 647-651.

[2609] European Union's first written submission, para. 600; also see South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 3.

[2610] Declaration of Patrick Libralesso, EADS General Procurement, 26 February 2013, (Exhibit EU-26) (BCI).

USD 625.3 million in new buildings and USD 400 million in machinery and equipment[2611], accordingly yielding a construction materials cost of **[***]** and a computer equipment cost of **[***]**. The European Union estimates that half of these purchases were made in Charleston County, subject to an average 8% sales and use tax rate, and half made elsewhere in South Carolina, subject to a 7% tax rate.[2612] Applying these tax rates equally to the construction materials and computer equipment costs, the total amount of the tax exemption for construction materials is at least **[***]** and the total amount of the tax exemption for computer equipment is at least **[***]**, or at least USD 31.14 million in total over the period 2010-2011, which corresponds to Boeing's timeline for construction and operation of the 787 final assembly and delivery facility.[2613]

8.1054. Nonetheless, the European Union considers the figure of USD 31.14 million in the period 2010-2011 underestimates the total amount of the subsidy, since this amount does not include sales and use tax exemptions for purchases of aircraft fuel, which the European Union is unable to estimate. Furthermore, the amount does not account for Boeing's subsequent capital investments in South Carolina, including new facilities and the expansion of existing facilities. Thus, in a second phase, the European Union calculates the subsidy to represent an additional amount of at least USD 18 million in the period 2012-2035. The European Union argues that, in the absence of better information, Boeing can be assumed to continue to spend USD 10 million each year on goods subject to the two[2614] sales and use tax exemptions, thereby benefiting from a subsidy of USD 750,000 each year. Over the 25-year useful life of the Gemini facilities, this amounts to an additional subsidy of USD 18 million. Combining both phases of its estimate, the European Union estimates the amount of the subsidy at USD 49.14 million between 2010 and 2035.[2615]

8.1055. The United States objects in particular to the second phase of the European Union's subsidy estimate: whereas the European Union's estimate for the period 2010-2011 has some grounding in evidence, albeit incorrect and based on unwarranted assumptions, its estimate for the period 2012-2035 is a complete fiction.[2616] With respect to the period 2010-2011, the European Union's estimate is based on the unsupported assumption that Boeing's investment of USD 1 billion was entirely made in the years 2010-2011, as well as a summary statement by a Boeing competitor on the proportion of costs allocated to construction materials and computer equipment.[2617] With respect to the period 2012-2035, the United States argues that the European Union, rather than trying to estimate the value of any alleged further investments by Boeing, arbitrarily selects the figure of USD 10 million as representing Boeing's annual expenditures for 2012 to 2035, making no effort to explain how this figure was derived, or how it

[2611] South Carolina Department of Commerce, Cost-Benefit Analysis, The Boeing Company, Charleston County, (Exhibit EU-499), p. 1. The South Carolina Department of Commerce and the South Carolina Board of Economic Advisors agree in their respective cost-benefit analyses of Project Gemini that Boeing's capital investment amounts to approximately USD 1 billion. However, where the analyses diverge, the European Union considers the figures provided by the South Carolina Department of Commerce to be more accurate. Neither analysis includes the challenged sales and use tax exemptions. (See European Union's first written submission, para. 599).

[2612] European Union's first written submission, para. 599.

[2613] European Union's first written submission, para. 600; also see South Carolina Subsidies to Boeing's LCA Division, (Exhibit EU-39), p. 3.

[2614] While the European Union refers to the three sales and use tax exemptions in its first written submission when discussing the post-2011 period, it states in its second written submission that this was a simple drafting error since the European Union does not contest that the challenged exemption for construction materials was effectively subsumed by the exemption in section 12-36-2120(67) of the S.C. Code as of July 2011. (See European Union's second written submission, fn 1089).

[2615] European Union's first written submission, para. 601; second written submission, para. 651. The European Union states that it does not rely on the estimate provided by the United States because of the United States' alleged failure to adequately respond to the Panel's request for information pursuant Article 13 of the DSU. The United States provided, without any supporting documentation, estimated values for the three sales and use tax exemptions from 2010 to 2012 which are based on what the European Union considers is the unsupported assumption that materials and labour each account for half of Boeing's total construction costs. (European Union's second written submission, para. 648 and fn 1081). The European Union requests the Panel, to the extent necessary, to draw appropriate inferences from the United States' alleged non-cooperation in the information-gathering process. (European Union's second written submission, para. 649).

[2616] United States' first written submission, para. 595; second written submission, para. 588.

[2617] United States' first written submission, paras. 592 and 593. The United States notes that the European Union decided to rely on the guesswork of an EADS employee even before it had received the United States' answer to the Panel's request for information under Article 13 DSU. (United States' second written submission, para. 586).

reflects Boeing's current or future investment plans.[2618] While the European Union claims that it is relying on this figure in the absence of better information, the absence of information does not justify resorting to wholly arbitrary figures.[2619] Moreover, while the European Union acknowledges that the challenged sales and use tax exemption for construction materials, which constitutes the major component of the subsidy amount for 2010 and 2011, was effectively subsumed by another exemption as of July 2011, it still estimates an amount for this exemption throughout the period 2012-2035.[2620]

8.1056. We first consider the European Union's estimate of the amount of the subsidy for the period 2010-2011, as well as the estimate provided by the United States for the period 2010-2012. For the reasons detailed below, we are of the view that the United States' estimate is a reasonable approximation of the amount of the subsidy for 2010-2012, since it is corroborated by other evidence before the Panel. The record before us includes two separate cost-benefit analyses of Project Gemini, the first prepared by the South Carolina Department of Commerce and undated[2621], the second prepared by the South Carolina Board of Economic Advisors, addressed to Senator Hugh K. Leatherman Sr. and dated 8 October 2009.[2622] The European Union relies on the former, stating that it is more accurate regarding the actual terms of Boeing's investment since the South Carolina Department of Commerce is the lead state agency for attracting economic development projects and was primarily responsible for negotiating the Project Gemini incentive package with Boeing. In contrast, the Board of Economic Advisors analysed a hypothetical capital investment project by a manufacturing project based on specific characteristics described in a state senator's analysis request.[2623] The two cost-benefit analyses mainly diverge in their respective allocations of Boeing's USD 1 billion investment to new buildings on the one hand, and machinery and equipment on the other. Under the heading "Announced Capital Investment", the analysis of the South Carolina Department of Commerce allocates USD 625.3 million to new buildings and USD 400 million to machinery and equipment. Under the same heading, the analysis of the Economic Board of Advisors allocates USD 250 million to new buildings and USD 731 million to machinery and equipment.[2624] Notwithstanding the European Union's reasons for relying on the figures provided by the South Carolina Department of Commerce, which the United States does not contest, we observe that applying the European Union's assumptions[2625] to the figures provided by the South Carolina Board of Economic Advisers leads to a subsidy amount of USD 16.7 million for the period 2010-2011, or USD 8.35 million in each of those years. While we acknowledge that the United States' amount estimate varies year-on-year, the average annual amount of subsidy estimated by the United States is **[***]**.[2626] This annual amount estimate is within a very close range to that resulting from the application of the European Union's calculation method to the estimates provided by the South Carolina Board of Economic Advisors. We therefore

[2618] United States' second written submission, para. 588.

[2619] United States' first written submission, para. 595.

[2620] United States' first written submission, paras. 596 and 597; second written submission, paras. 589 and 590.

[2621] South Carolina Department of Commerce, Cost-Benefit Analysis, The Boeing Company, Charleston County, (Exhibit EU-499).

[2622] Letter from W. C. Gillespie, South Carolina Board of Economic Advisors, to Senator H. K. Leatherman, Cost-Benefit Analysis, 8 October 2009, (Exhibit EU-498).

[2623] European Union's first written submission, para. 599. See Letter from W. C. Gillespie, South Carolina Board of Economic Advisors, to Senator H. K. Leatherman, Cost-Benefit Analysis, 8 October 2009, (Exhibit EU-498), p. 1.

[2624] Letter from W. C. Gillespie, South Carolina Board of Economic Advisors, to Senator H. K. Leatherman, Cost-Benefit Analysis, 8 October 2009, (Exhibit EU-498), p. 2. The evidence on the record does not allow the Panel to determine what the actual allocation was. We note that the exhibit Boeing Investment in South Carolina (2010-3Q2012), (Exhibit USA-324) (BCI) aggregates expenditure on the Final Assembly and Delivery Facility and site work. Also see United States' response to Panel question No. 128, para. 265.

[2625] The European Union's assumptions are that **[***]** % of building costs is made up by construction materials, while **[***]** % of machinery and equipment costs is made up by computer equipment, and that purchases are made half in Charleston County, subject to a tax rate of 8%, and half in South Carolina, subject to a tax rate of 7%. See European Union's first written submission, para. 599. The United States objects to the European Union's estimate of the proportions of costs allocated to construction materials and computer equipment merely on the basis that the Declaration of Patrick Libralesso is cursory. (See United States' first written submission, para. 593). However, we note that the United States itself estimates the cost of construction materials to account for **[***]** of total construction costs. (United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 73, para. 156).

[2626] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 73, para. 156; first written submission, para. 590.

consider that the United States' estimate of the amount of the subsidy as **[***]** over the period 2010-2012 is reasonable.

8.1057. As to the estimated amount of the subsidy for the post-2012 period, we note that the United States does not provide an estimate, and the European Union's projections are based on a methodology that the United States alleges involves the arbitrary selection of USD 10 million as the annual amount of Boeing investment expenditures in South Carolina in the 2012-2035 period. We agree that the European Union has provided no support for its selection of the figure of USD 10 million in Boeing spending in each year from 2012 to 2035, although we note that the United States does not suggest any alternative amount of Boeing's projected spending on which to base an estimate of the amount of the subsidy to Boeing in the post-2012 period. Having reviewed the record however, we are satisfied that the European Union's estimate of the annual amount of the subsidy in the post-2012 period; i.e. USD 750,000, is corroborated by other evidence and is therefore a reasonable approximation of the annual amount of the subsidy for the 2013-2015 period. The European Union submitted as an exhibit a 2010 report prepared by an economic consulting firm on behalf of The Alliance for South Carolina's Future, entitled "The Economic Impact of Boeing in South Carolina".[2627] In this report, the authors provide an estimate of the state component of the Project Gemini incentive package, including an estimate of the total amount of the "Statutory Sales Tax Incentives", which it estimates at USD 41 million.[2628] We acknowledge that a significant portion of Boeing's expenditures would have been made early on in the construction of the Gemini facilities and infrastructure. We therefore deduct from this figure the United States' estimate of USD **[***]** for the period 2010-2012. If we allocate the remainder (USD **[***]**) over the average 25-year useful life of the Gemini facilities and infrastructure[2629], we arrive at an average annual subsidy amount of USD **[***]**. This figure is sufficiently close to the European Union's annual estimate of USD 750,000, which is in turn the basis for its estimate of USD 2.25 million in the period 2013-2015.

8.1058. **We therefore consider the European Union's estimate of the amount of the subsidy as USD 2.25 million over the period 2013-2015 is reasonable.[2630]**

8.2.8.11.5 Conclusion

8.1059. In light of the findings above, we conclude that the European Union has established that the sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, provided in South Carolina Code sections 12-36-2120(9)(e) and (f), (65)(b), and (67) involve a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement, in the amount of USD 2.25 million between 2013 and 2015.

8.2.8.12 Whether the workforce recruitment, training and development programme provided to Boeing is a specific subsidy to Boeing

8.2.8.12.1 Introduction

8.1060. In paragraph 24 of its panel request, the European Union identifies as one of the Project Gemini-related subsidies presently benefiting Boeing:

> Establishment of workforce recruitment, training and development programs for Boeing.

8.1061. The European Union argues that the workforce recruitment, training, and development programmes provided to Boeing through the South Carolina Technical College System (Boeing

[2627] Alliance for South Carolina's Future, *The Economic Impact of Boeing in South Carolina*, (May 2010), (Exhibit EU-489).

[2628] See Alliance for South Carolina's Future, *The Economic Impact of Boeing in South Carolina*, (May 2010), (Exhibit EU-489), p. 12.

[2629] Beyond noting in the context of other South Carolina measures that the 25-year average useful life of the facilities used by the European Union is shorter than the actual useful life of the facilities and infrastructure, which ranges from ten to 40 years, the United States does not appear to object to the use of this period of time. (See United States' first written submission, fns 904 and 923).

[2630] In light of our conclusion, we do not consider it necessary to address the European Union's request for the Panel to "draw appropriate inferences". (European Union's second written submission, para. 649).

workforce programme) constitute a specific subsidy to Boeing within the meaning of Articles 1 and 2 of the SCM Agreement.

8.1062. The Boeing workforce programme challenged by the European Union is delivered as part of the South Carolina Technical College System's job training programme (readySC). The readySC programme has provided customised training for new and expanding business and industry in South Carolina since 1961.[2631] The Boeing workforce programme consists of South Carolina recruiting and training assemblers/fabricators for Boeing's 787 final assembly and delivery facility at no cost to Boeing. The multi-phase training provided under the challenged programme spans the identification and selection of eligible candidates to training an FAA-certified workforce capable of assembling the 787's composite-material fuselage. Between the fiscal year 2009-2010 and February 2013, over 2,660 Boeing employees have been trained through the challenged programme, while a total of 3,600 Boeing employees will be trained under the programme.[2632]

8.2.8.12.2 Main arguments of the parties

8.1063. The European Union argues that the Boeing workforce programme, provided through readySC, constitutes a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement. The programme involves a government provision of goods or services other than general infrastructure within the meaning of Article 1.1(a)(1)(iii). Since Boeing would otherwise have to pay for the selection, training and development of its workforce on market terms, the programme provided at no cost to Boeing confers a benefit within the meaning of Article 1.1(b).[2633] The programme is also specific within the meaning of Articles 2.1(a) and 2.1(c), since the South Carolina Budget and Control Board provided special funding earmarked for Boeing's workforce programme, and Boeing is the predominant user of the subsidy and receives a disproportionately large amount of the subsidy.[2634]

8.1064. The United States argues that the European Union has failed to demonstrate that the Boeing workforce programme constitutes a financial contribution or confers a benefit[2635], and that in any event the programme is not specific within the meaning of Article 2.1. The readySC programme is broadly available and has been widely used throughout the economy of South Carolina, Boeing is neither the main or most frequent user of the programme, nor is there any indication that discretion has been exercised in a manner indicating specificity.[2636]

8.2.8.12.3 Evaluation by the Panel

8.2.8.12.3.1 Whether there is a financial contribution and a benefit

8.1065. The first question before the Panel is whether the Boeing workforce programme constitutes a financial contribution through the provision of government services, within the meaning of Article 1.1(a)(1)(iii). The European Union's position is that the Boeing workforce programme, provided through readySC, provides free services including screening and training of applicants that Boeing would otherwise have to pay for itself.[2637] The United States' position is that the European Union provides only a cursory analysis in support of its financial contribution claim, and has therefore failed to demonstrate the existence of a financial contribution.[2638]

8.1066. In light of the uncontested evidence before us that South Carolina provides free workforce screening, training and development services to Boeing under the readySC

[2631] readySC, "About Us", available at <www.readysc.org/about.htm>, accessed 1 September 2016, (Exhibit USA-240).
[2632] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 77, paras. 163-169; and European Union's first written submission, paras. 657-660. Also see S. Wilhelm, "Charleston, High-flying efforts to build a Boeing jet work force", *Puget Sound Business Journal*, 3 June 2011, (Exhibit EU-530).
[2633] European Union's first written submission, paras. 662-666; second written submission, paras. 699-701.
[2634] European Union's first written submission, paras. 667 and 668; second written submission, paras. 702 and 703.
[2635] United States' first written submission, para. 617; second written submission, para. 599.
[2636] United States' first written submission, paras. 647-651; second written submission, paras. 600-604.
[2637] European Union's first written submission, para. 663.
[2638] United States' second written submission, para. 599.

programme[2639], which Boeing would otherwise have to acquire at market rates, **we find that the Boeing workforce programme involves a financial contribution within the meaning of Article 1.1(a)(1)(iii) and confers a benefit within the meaning of Article 1.1(b).**

8.2.8.12.3.2 Whether the subsidy is specific

8.1067. With respect to specificity, the first issue raised by the parties' arguments is whether the subsidy provided through the Boeing workforce programme is specific within the meaning of Article 2.1(a). In support of its argument that the Boeing workforce programme, provided through readySC, involves a subsidy that is specific within the meaning of Article 2.1(a), the European Union asserts that the South Carolina State Budget and Control Board enacted a special resolution to provide special funding to the State Board for Technical and Comprehensive Education for readySC, expressly earmarked for carrying out the Boeing workforce training, recruitment, and development programme.[2640] The United States counters that the European Union has failed to articulate how this information is relevant to an analysis under Article 2.1(a).[2641]

8.1068. For the reasons detailed below, we conclude that the European Union has failed to establish that the subsidy provided through the Boeing workforce programme is specific within the meaning of Article 2.1(a). The European Unions' sole argument in support of its position that the subsidy provided through the Boeing workforce programme is specific under Article 2.1(a) is based on a resolution adjusting the amount of funding appropriated to the Center for Accelerated Technology Training (CATT) Program as a consequence of expenditures anticipated in relation to Boeing's South Carolina operations. The resolution adopted on 23 February 2010 by the South Carolina Budget and Control Board approved "an adjustment in state general fund appropriations within the Center for Accelerated Technology Training Program at the State Board for Technical and Comprehensive Education not to exceed $3,100,000".[2642] The Board adopted this resolution in response to a notification from the State Board for Technical and Comprehensive Education "of an additional need in the CATT budget for FY 2009-10 estimated at between $2,203,505 and $3,100,000".[2643] The need for this adjustment reflected "anticipated CATT expenditures for the Boeing Project which are estimated at $3,100,000 for the remainder of FY 2009-10. This USD 3.1 million includes expenses for training classes such as staffing, material and supplies, testing and operations".[2644]

8.1069. However, since the evidence before the Panel shows that the measure at issue is provided pursuant to a pre-existing broader subsidy programme[2645], the relevant question under Article 2.1(a) is whether access to *that subsidy programme* is explicitly limited. The fact that the resolution cited by the European Union adjusts appropriations to accommodate one specific application of this broader programme is not evidence that access to the scheme as a whole is explicitly limited to certain enterprises. In fact, the evidence indicates that no such limitation exists. The resolution itself notes that the CATT Program "designs, develops and conducts training for individuals seeking to fill jobs being created by *new and expanding industries*".[2646] Similarly, the provision in the FY 2009-2010 Appropriation Act pursuant to which the resolution was adopted states that "it is the intent of the General Assembly that the State Board for Technical and Comprehensive Education expend whatever funds as are necessary to provide direct training for *new and expanding business or industry*".[2647] There is nothing to suggest that the applicability of this provision in the FY 2009-2010 Appropriation Act is limited to certain enterprises. Aside from

[2639] See, in particular, United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013, response to question No. 77, paras. 163-169.
[2640] European Union's first written submission, para. 667; second written submission, para. 702.
[2641] United States' first written submission, para. 648.
[2642] State Budget and Control Board, Meeting Agenda, Regular Session Item No. 2, 23 February 2010, (Exhibit EU-537), pdf p. 2.
[2643] State Budget and Control Board, Meeting Agenda, Regular Session Item No. 2, 23 February 2010, (Exhibit EU-537), pdf p. 2.
[2644] State Budget and Control Board, Meeting Agenda, Regular Session Item No. 2, 23 February 2010, (Exhibit EU-537), pdf p. 2.
[2645] See, in particular, readySC, "About Us", available at <www.readysc.org/about.htm>, accessed 1 September 2016, (Exhibit USA-240); and readySC, *Annual Report*, FY 2010-2011, (Exhibit USA-225).
[2646] State Budget and Control Board, Meeting Agenda, Regular Session Item No. 2, 23 February 2010, (Exhibit EU-537), pdf p. 2. (emphasis added)
[2647] State Budget and Control Board, Meeting Agenda, Regular Session Item No. 2, 23 February 2010, (Exhibit EU-537), pdf p. 9. (emphasis added)

its argument based on the resolution of 23 February 2010, the European Union has advanced no other argument to show that the eligibility for the workforce development programme is expressly limited to certain enterprises. We therefore find the European Union has failed to establish that the subsidy provided through the workforce development programme is specific within the meaning of Article 2.1(a).[2648]

8.1070. The second issue raised by the parties' arguments is whether the subsidy provided through the Boeing workforce programme is specific within the meaning of Article 2.1(c). The European Union argues that the challenged programme is specific within the meaning of Article 2.1(c) on the grounds that Boeing is the predominant user of the subsidy and receives a disproportionately large amount of the subsidy. In this respect the European Union contends that the Boeing workforce programme accounted for more than one-third of all readySC expenditures in 2010, that the training programme includes a focus on Boeing-specific job skills in the first phase and is provided directly to post-hire Boeing employees in a third phase. Moreover, the European Union argues that the granting authority has exercised its discretion in a manner favouring Boeing, including by providing a more extensive set of services to Boeing and conducting training on processes and equipment unique to Boeing.[2649]

8.1071. The United States counters that readySC, through which the Boeing workforce programme is provided, is not used by a limited number of certain enterprises but rather works with a number of businesses and industries in any given year. In fiscal year 2010-2011, readySC trained 5,872 workers for 73 companies, and 4,400 workers for 82 companies in the following fiscal year. While readySC will train 3,600 workers for Boeing in total, it has trained 270,000 workers during the course of its existence.[2650] Similarly, Boeing is not the predominant user of the programme, since Boeing's usage of the programme over the course of any particular year does not make it the main or most frequent user of a long-established programme.[2651] Finally, the fact that readySC conducts training on processes and equipment unique to Boeing is no indication that discretion has been exercised in a manner indicating specificity, since the programme provides training and skills that are designed for the particular needs of all participating companies.[2652]

8.1072. For the reasons detailed below, we consider that the European Union has failed to establish that the subsidy provided through the Boeing workforce programme is specific within the meaning of Article 2.1(c). In light of the fact that the readySC programme has existed for over half a century, we do not see any evidence before us to suggest that the programme is used by a limited number of certain enterprises, that it is predominantly used by certain enterprises, that disproportionately large amounts of subsidy have been granted to certain enterprises, or that discretion has been exercised by the granting authority in a manner indicating specificity. In particular, the fact that in one year of the programme's over fifty-year existence, Boeing accounted for more than one-third of all readySC expenditures, does not demonstrate that Boeing is the predominant user of readySC, or that it receives a disproportionately large amount of the subsidy. The European Union furthermore fails to conduct the kind of disproportionality analysis that accords with the framework set out by the Appellate Body in the original proceeding.[2653] Moreover, the European Union has not established that discretion was exercised so as to limit access to the subsidy programme to certain enterprises: the fact that the training focuses on Boeing job skills and is provided directly to post-hire Boeing employees is irrelevant as an indication of *de facto* specificity. The European Union further fails to provide any empirical evidence in support of its contention that the services provided to Boeing were more extensive than those provided to other firms. **We therefore find that the European Union has failed to establish that the subsidy provided through the Boeing workforce programme is specific within the meaning of Article 2.1(c).**

[2648] We note that in the original proceeding the panel found certain Washington State job training incentives to be a specific subsidy, within the meaning of Article 2.1(a) of the SCM Agreement. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.568-7.572 and 7.590-7.594). However, the measure at issue in that proceeding was not part of a pre-existing broader scheme, as is the case in this proceeding.

[2649] European Union's first written submission, para. 668.

[2650] United States' first written submission, para. 649; second written submission, para. 602.

[2651] United States' first written submission, para. 650 (referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.752); second written submission, para. 602.

[2652] United States' first written submission, para. 651; second written submission, paras. 603 and 604.

[2653] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 879.

8.1073. Finally, we note that the European Union also argues that the subsidy provided to Boeing through the Boeing workforce programme is specific pursuant to Article 2.3 of the SCM Agreement. Article 2.3 provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". We reject this argument because in Section 10 of this Report we find that the European Union has failed to establish that any subsidy at issue in this proceeding is prohibited by Articles 3.1 and 3.2 of the SCM Agreement.

8.2.8.12.4 Conclusion

8.1074. In light of our above findings, we conclude that the European Union has failed to establish that the workforce recruitment, training, and development programme involves a specific subsidy within the meaning of Articles 1 and 2 of the SCM Agreement.

8.3 Summary of the Panel's conclusions as to whether the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement

8.1075. In Section 8.1 of the Report, we evaluate whether the United States has failed to withdraw the subsidy through the modifications it made to the particular pre-2007 NASA and DOD aeronautics R&D measures that were the subject of the DSB recommendations and rulings. As a result of our evaluation, we find that the European Union has established that the amendments made by the United States through the Boeing Patent Licence Agreements to the terms of the pre-2007 NASA procurement contracts and DOD assistance instruments do not constitute a withdrawal of the subsidy within the meaning of Article 7.8 of the SCM Agreement. With respect to the pre-2007 Space Act Agreements, we find that the European Union has established that the United States, having taken no action in respect of those instruments, has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.

8.1076. In Section 8.2 of the Report, we evaluate whether the United States has failed to withdraw the subsidy by granting or maintaining post-2006 measures alleged to constitute specific subsidies within the meaning of Article 1 and 2 of the SCM Agreement. As a result of our evaluation, we find that the European Union has established that the following measures involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and that by granting or maintaining these specific subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement:

a. certain transactions between NASA and Boeing pursuant to post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements; while we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent it is relevant to the Panel's assessment of whether the United States has withdrawn the subsidy, or taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement, we find the United States' estimate of the amount of the financial contribution at **[***]** between 2007 and 2012 to be the most credible estimate (Section 8.2.2);

b. certain transactions between DOD and Boeing pursuant to post-2006 DOD assistance instruments; while we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent that it is relevant, we find the United States' estimate of the amount of the financial contribution at **[***]** between 2007 and 2012 to be the most credible estimate (Section 8.2.3);

c. transactions pursuant to the Boeing CLEEN Agreement; while we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, to the extent that it is relevant, we find the European Union's estimate of the amount of the financial contribution at USD 27.99 million between 2010 and 2014 to be a credible estimate (Section 8.2.4);

d. Washington State B&O tax rate reduction for the aerospace industry, in the amount of USD 325 million between 2013 and 2015 (Section 8.2.7);

e. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828, in the amount of **[***]** between 2013 and 2015 (Section 8.2.7);

f. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes, in the amount of **[***]** between 2013 and 2015 (Section 8.2.7);

g. Washington State sales and use tax exemptions for computer software, hardware, and peripherals, in the amount of **[***]** between 2013 and 2015 (Section 8.2.7);

h. City of Everett B&O tax rate reduction, in the amount of USD 54.1 million between 2013 and 2015 (Section 8.2.7);

i. payments by South Carolina pursuant to commitments made in the Project Gemini Agreement to compensate Boeing for a portion of the costs incurred by Boeing in respect of the construction of the Project Gemini facilities and infrastructure through air hub bond proceeds, in the amount of USD 50 million (Section 8.2.8.6);

j. South Carolina property tax exemption for Boeing's large cargo freighters, in the amount of USD 25.82 million between 2013 and 2015 (Section 8.2.8.10); and

k. South Carolina sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, in the amount of USD 2.25 million between 2013 and 2015 (Section 8.2.8.11).

8.1077. We also find that the European Union has failed to establish that the following measures involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and that the European Union has consequently failed to establish that by granting or maintaining these specific subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement:

a. certain transactions between DOD and Boeing pursuant to pre-2007 and post-2006 DOD procurement contracts, on the grounds that, assuming *arguendo* that these measures involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement, the European Union has failed to establish that they confer a benefit within the meaning of Article 1.1(b) of the SCM Agreement (Section 8.2.3);

b. tax exemptions and exclusions under FSC/ETI legislation and successor legislation, on the grounds that the European Union has failed to establish that Boeing actually received the FSC/ETI tax benefits after 2006, and that the measure therefore involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement (Section 8.2.5);

c. tax abatements provided through IRBs issued by the City of Wichita, on the grounds that these tax abatements are no longer specific within the meaning of Article 2.1(c) of the SCM Agreement and, as a result, the measure is no longer subject to the provisions of the SCM Agreement on actionable subsidies (Section 8.2.6);

d. South Carolina sublease of the Project Site, on the grounds that the European Union has failed to establish that the sublease involves a subsidy to Boeing (Section 8.2.8.5);

e. alleged provision by South Carolina of Gemini and Emerald facilities and infrastructure, on the grounds that the European Union has failed to establish that this measure involves a financial contribution within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement (Section 8.2.8.6);

f. South Carolina fee-in-lieu-of taxes arrangements set forth in the Boeing FILOT Agreement and Project Emerald FILOT Agreement, on the grounds that the European Union has failed to establish that the subsidy provided through these arrangements is specific within the meaning of Article 2 of the SCM Agreement (Section 8.2.8.7);

g. South Carolina corporate income tax credits in connection with the designation of the Project Gemini and Project Emerald facilities and infrastructure as part of the same multi-county industrial park, on the grounds that the European Union has failed to establish that the subsidy provided through the tax credits is specific within the meaning of Article 2 of the SCM Agreement (Section 8.2.8.8);

h. South Carolina Income Allocation and Apportionment Agreement, on the grounds that the European Union has failed to establish that the agreement involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement (Section 8.2.8.9); and

i. South Carolina workforce recruitment, training and development programme, on the grounds that the European Union has failed to establish that the subsidy provided through this programme is specific within the meaning of Article 2 of the SCM Agreement (Section 8.2.8.12).

9 WHETHER THE UNITED STATES HAS FAILED TO TAKE APPROPRIATE STEPS TO REMOVE THE ADVERSE EFFECTS, WITHIN THE MEANING OF ARTICLE 7.8 OF THE SCM AGREEMENT

9.1 Introduction

9.1. In this Section of the Report, we assess whether the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement, in relation to the measures that we have ruled are within the scope of this proceeding, and which are specific subsidies that have not been withdrawn for purposes of Article 7.8.

9.2. The European Union argues that the subsidies that the United States has failed to withdraw, *and which it grants and maintains at the end of the implementation period*, cause present adverse effects, in the form of certain kinds of serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement, after the end of the implementation period. Accordingly, the United States has failed to comply with the DSB recommendations and rulings and has acted inconsistently with Articles 5, 6, and 7.8 of the SCM Agreement. The United States argues that it has withdrawn the subsidy in relation to the three measures the subject of the DSB recommendations and rulings of any significance (the NASA procurement contracts, DOD assistance instruments, and the FSC/ETI subsidies) and that the minor subsidies (Washington State B&O tax rate reduction and tax abatements provided through the City of Wichita IRBs) are not of a magnitude that they could plausibly cause adverse effects.[2654] The European Union therefore does not establish its case that "the United States grants and maintains subsidies to Boeing after the end of the implementation period that cause present adverse effects."[2655]

9.3. In Section 6, we explain that, in light of how the European Union has framed its case, our task in this proceeding is to determine, for the subsidies that the United States has failed to withdraw after the end of the implementation period, whether the subsidies cause present adverse effects, in the form of certain kinds of serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement.

9.4. *With respect to subsidies to the 787 and 777X alleged to affect the A350XWB and A330*, the European Union argues[2656]:

a. That the combined effects of certain aeronautics R&D subsidies that improve the quality and accelerate the launch and delivery positions of the 787 family and 777X, and other

[2654] United States' Compliance Communication, paras. 9-11; first written submission, para. 679. Moreover, with respect to the tax abatements related to the City of Wichita IRBs, the United States argues that it has withdrawn the subsidy because it is no longer specific. (United States' opening statement at the meeting with the Panel, paras. 94 and 99).

[2655] United States' first written submission, para. 679 (quoting European Union's first written submission, para. 790).

[2656] European Union's first written submission, section VII.H.

subsidies that enable Boeing to lower the prices of these aircraft, *collectively*, are a *genuine and substantial* cause of:

i. Significant lost sales of the A350XWB, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.

ii. Impedance of imports of the A350XWB to the United States, within the meaning of Article 6.3(a) of the SCM Agreement, and threat thereof.

iii. Impedance of exports of the A350XWB, within the meaning of Article 6.3(b) of the SCM Agreement to various third-country markets, and threat thereof.[2657]

iv. Significant price suppression of the A350XWB, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.

b. That the *original adverse effects* of the pre-2007 aeronautics R&D subsidies in respect of the A330 and Original A350 continue in the post-implementation period as:

i. Significant price suppression of the A330 through orders of A330 LCA placed during the 2004-2006 reference period (owing to deliveries of those aircraft occurring later, along with the prices fixed at that time through options and purchase rights exercised later, as well as "follow-on" orders based on A330 pricing expectations from 2004-2006); and post-2006 A330 orders by all other customers.

ii. Significant price suppression of the A350XWB (based on Original A350 orders converted to A350XWB orders and on new A350XWB orders).

iii. Significant lost sales of the A350XWB, in that the adverse effects arising from sales of the 787 that were the basis for lost sales findings for the Original A350 (and also the other alleged Original A350 lost sales that were not resolved) in the original proceeding, continue at present to the extent those aircraft have not yet been delivered.

iv. Significant lost sales of the A350XWB after the original reference period (i.e. post-2006), to the extent that the relevant Boeing LCA remain undelivered.

v. Threat of impedance of exports of the A350XWB resulting from 787 deliveries, the result of Original A350 lost sales in the original reference period, occurring in the post-implementation period.

9.5. *With respect to subsidies to the 737 MAX alleged to affect the A320neo*, the European Union argues that the combined effects of: (a) certain aeronautics R&D subsidies that enhance the quality and enable the earlier availability of the 737 MAX; and (b) other subsidies that enable Boeing to lower the prices of the 737 MAX, *collectively*, are a *genuine and substantial* cause of[2658]:

a. Significant lost sales of A320neo, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.

b. Threat of impedance of future A320neo imports to the United States market, within the meaning of Article 6.3(a) of the SCM Agreement, and threat of impedance of future A320neo exports to various third-country markets, within the meaning of Article 6.3(b) of the SCM Agreement.

[2657] Based on the causal mechanisms that the European Union argues indicate higher counterfactual sales volumes and market shares for Airbus, absent the U.S. subsidies, and on evidence of alleged lost sales of Airbus LCA in relevant country markets, as well as evidence that in the European Union's view demonstrates that Boeing is projected to make significantly more than 50% of present and future deliveries of "new technology, twin-aisle" aircraft into these markets. (European Union's first written submission, paras. 1592, 1593, 1598, and 1599; second written submission, paras. 1551-1553 and 1560-1563; and response to Panel question No. 169, paras. 468, 469, 476, and 477).

[2658] European Union's first written submission, section VII .I.

c. Significant price suppression of the A320neo, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.

9.6. *With respect to subsidies to the 737NG alleged to affect the A320ceo*, the European Union argues that the subsidies that enable Boeing to lower the prices of the 737NG, *collectively*, are a *genuine and substantial* cause of[2659]:

a. Significant lost sales of the A320ceo, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.

b. Displacement, impedance, and/or threats thereof, of A320ceo imports to the United States market, within the meaning of Article 6.3(a) of the SCM Agreement, and of A320ceo exports to various third country markets, within the meaning of Article 6.3(b) of the SCM Agreement.

c. Significant price suppression of the A320ceo, and threat thereof.

9.7. As in the original proceeding, the European Union's serious prejudice arguments focus on the effects of the subsidies on Airbus' prices and sales *through their effects on Boeing's product development* and *prices*.[2660] Accordingly, with the exception of an additional argument regarding the continuation of the original adverse effects of the pre-2007 aeronautics R&D subsidies described in item (b) in paragraph 9.14 below, the European Union's serious prejudice claims under Article 6.3 involve two phases of analysis:

a. *how certain subsidies affected Boeing's product development behaviour* (for subsidies alleged to operate through a "technology causal mechanism"), and *how certain other subsidies affected Boeing's LCA pricing behaviour* (for subsidies alleged to operate through a "price causal mechanism"); and

b. how the effects of the subsidies on Boeing's product development and pricing collectively *thereby affect Airbus sales and prices* in the post-implementation period, as empirically demonstrated on the basis of the evidence of Boeing and Airbus prices and sales.

9.8. The parties' arguments on whether the United States has taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement, reveal significant disagreement on a number of issues. They disagree, for example, on the delineation of the relevant product markets for analysing the European Union's serious prejudice claims, and more particularly, whether the A330 and 777 compete with the "new technology" wide-body, twin-aisle LCA (i.e. the 787, 777X and A350XWB), and whether the A320ceo and 737NG compete with the "new technology" single-aisle, narrow-body LCA (i.e. the 737 MAX and A320neo).

9.9. The parties also disagree as to how the various subsidies should be collectively assessed for purposes of determining whether they are a *genuine and substantial* cause of serious prejudice, as well as the standard for determining whether subsidies are a *genuine* cause of serious prejudice.

9.10. The parties disagree on whether the aeronautics R&D subsidies that are alleged to operate through a technology causal mechanism do in fact affect Boeing's product development of LCA in the post-implementation period, as well as how that evaluation should be undertaken. They also disagree as to the operation of the post-2006 subsidies, and more particularly, whether such subsidies, in light of their magnitude, structure and operation, and the relevant conditions of competition, do in fact affect Boeing's LCA pricing behaviour in a manner that renders them capable of causing the various Article 6.3 market phenomena.

[2659] European Union's first written submission, section VII.J.

[2660] See Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1657. The European Union explains that, in following a "unitary" approach to demonstrating the adverse effects of the subsidies, it first sets out the nature of the subsidies and how they affect, in light of the conditions of competition, the commercial behaviour of Boeing. On that basis, the European Union then seeks to establish the particular market phenomena in Article 6.3 for the various Airbus products and the markets in which they compete. (European Union's first written submission, para. 796).

9.11. The European Union generally presents arguments concerning the effects of the subsidies on *Boeing's* product development and pricing behaviour on a horizontal basis. This means that the European Union seeks to demonstrate that the pre-2007 aeronautics R&D subsidies affect Boeing's product development , and that the post-2006 subsidies affect Boeing's LCA pricing behaviour[2661], based on the nature of the particular subsidy or group of subsidies at issue, rather than the particular Boeing LCA said to be subsidized by the various subsidies in combination.[2662] Based on conclusions that the European Union draws from the effects of the subsidies at issue on Boeing's technology development and pricing behaviour, respectively, the European Union then presents arguments that, *collectively*, the subsidies adversely impact competing Airbus LCA in the post-implementation period.

9.12. The Panel has decided to address the European Union's arguments concerning the effects of the various subsidies on Boeing's product development and pricing behaviour in the context of the particular LCA product markets and the particular Boeing LCA that are said to benefit from the subsidies. It is only in the context of the particular LCA and product markets that the Panel is able to meaningfully evaluate whether subsidies that may, in the abstract, be argued to affect Boeing's product development and pricing behaviour, do in fact have those alleged effects in relation to particular Boeing LCA. Once we determine that a subsidy or aggregated group of subsidies has affected the technological development or prices of a particular Boeing LCA family, we then consider how such effects have impacted the sales and prices of the competing Airbus aircraft in that product market.

9.13. In Section 9.2 we begin by addressing various factors that provide necessary background for our consideration of the case: (a) developments in the LCA industry since the original proceeding and the implications of these developments for the appropriate LCA product market delineation in this proceeding; (b) the concept of price in the context of the LCA markets and the way in which airframe manufacturers such as Boeing set their LCA prices; (c) the standard of causation and related issue of the subsidies that may appropriately be aggregated in order to assess their effects in an integrated manner; and (d) the relevant time-period over which to assess whether the non-withdrawn subsidies cause serious prejudice in the post-implementation period.

9.14. We then address, in Section 9.3, whether subsidies benefiting the 787 and 777X cause serious prejudice in respect of the A350XWB and A330. Accordingly, we evaluate both aspects of the European Union's serious prejudice case concerning the A350XWB and A330: (a) whether the combined effects of: (i) pre-2007 and certain post-2006 aeronautics R&D subsidies alleged to accelerate the launch and delivery positions of the 787 family and 777X, and (ii) the post-2006 subsidies alleged to enable Boeing to lower its prices, collectively, are a genuine and substantial cause of various forms of serious prejudice in respect of the A350XWB and A330 in the post-implementation period; and (b) whether the original adverse effects of the pre-2007 aeronautics R&D subsidies on the A330 and Original A350 continue into the post-implementation period as serious prejudice to the interests of the European Union in respect of the A350XWB and A330.

9.15. In Section 9.4 we address whether subsidies benefiting the 737 MAX and 737NG cause serious prejudice in respect of the A320neo and A320ceo, respectively. This involves a consideration of whether: (a) the combined effects of: (i) certain aeronautics R&D subsidies alleged to improve the quality and accelerate the launch and delivery positions of the 737 MAX, and (ii) the post-2006 subsidies alleged to enable Boeing to lower its 737 MAX prices, collectively, are a genuine and substantial cause of various forms of serious prejudice in relation to the A320neo in the post-implementation period; and (b) the post-2006 subsidies alleged to enable Boeing to lower its 737NG prices, collectively, are a genuine and substantial cause of various forms of serious prejudice in relation to the A320ceo in the post-implementation period.

[2661] With the exception of a relatively small number of individual post-2006 aeronautics R&D subsidies, which according to the European Union, operate through a technology causal mechanism in the same manner as the pre-2007 aeronautics R&D subsidies. See paras. 9.85, 9.198, 9.199, 9.356, and 9.357 below.

[2662] See e.g. European Union's first written submission, section VII.E (Technology Causal Mechanism) and section VII.F (The U.S. Subsidies Cause Adverse Effects Through a Price Causal Mechanism) (dealing in a horizontal fashion with the arguments concerning the technology causal mechanism and price causal mechanism), compared to section VII.H (Effects of U.S. Subsidies Benefiting the 787 and 777X on the A330 and A350XWB), section VII.I (Effects of U.S. Subsidies Benefiting the 737 MAX on the A320neo), and section VII.J (Effects of the U.S. Subsidies Benefiting the 737NG on the A320ceo) (dealing with the collective effects of all of the subsidies benefiting the various Boeing aircraft on the competing Airbus aircraft).

9.2 Preliminary considerations relevant to the Panel's evaluation of the European Union's serious prejudice case

9.2.1 Developments in the LCA industry since the original proceeding and their implications for the identification of the relevant LCA product markets

9.16. In this Section, we describe developments in the LCA industry since the original proceeding in order to determine whether the Panel should assess the competitive impact of U.S. subsidies benefiting certain Boeing LCA on the basis of the LCA product markets identified by the original panel, or on the basis of differently delineated product markets. The two main issues that arise are whether current conditions of competition mean that existing and new technology aircraft of similar capacity, range and maximum take-off weight (MTOW) no longer exercise meaningful competitive constraints upon one another, and are more appropriately considered to occupy distinct product markets, and whether the trend towards larger variants of wide-body, twin-aisle LCA means that it is no longer meaningful to apply the 200-300 seat and 300-400 seat product market delineation that the original panel adopted.

9.17. In the original proceeding, the panel described certain key features of the LCA markets in which Boeing and Airbus LCA compete. According to the European Union, for the most part, these features remain unchanged.[2663] Thus, the LCA industry is effectively a competitive, supply-side duopoly, in which Boeing and Airbus are the only manufacturers of LCA.[2664] Boeing and Airbus each holds significant market share and possesses a degree of market power, meaning that each manufacturer's decisions regarding the supply and pricing of its products have the ability to influence the pricing of the other, and more generally, the market price for LCA.[2665] Overall market demand for LCA is understood to be fairly inelastic with respect to price, due to the lack of viable alternatives to LCA and the cost of the aircraft itself representing only a small portion of total airline operating costs. However, individual firms, such as Boeing and Airbus, face *elastic* demand for their individual LCA products, given the ability of customers to negotiate significant discounts on LCA, exploiting the substitutability of aircraft from the two suppliers.[2666]

9.18. Technological innovation is a crucial element of competition between LCA manufacturers.[2667] The marketing life of an aircraft is determined largely by the life of the technology that defines the model. Once the technology is superseded, the LCA manufacturer will no longer be able to sell the model without making major capital investments to incorporate the latest available technologies.[2668]

9.19. Given the enormous costs associated with the development of a new LCA family, both Airbus and Boeing are necessarily limited in the number of different LCA families (including size variants within an LCA family) that they are able to offer customers. Each LCA family, therefore, is ideally optimised in terms of size and range (among other factors) to cover as wide a base of customer needs as possible. Both Airbus and Boeing design the physical characteristics of their LCA families in consultation with, and according to the needs of, airlines and leasing companies, and as a result have developed broadly similar LCA families with overlapping physical characteristics and customer end-uses.[2669] Airbus and Boeing each offers a full line of LCA, and both manufacturers source material and technology worldwide, often from the same suppliers.[2670] At the same time, Airbus and Boeing compete by differentiating their aircraft, optimising new size variants to fill existing gaps in the market.

[2663] European Union's first written submission, para. 839.

[2664] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1688; and Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 903. While certain manufacturers other than Boeing and Airbus have attempted to produce single-aisle LCA (notably Bombardier, Embraer, Comac, and United Aircraft Corporation), their market shares and product ranges are limited.

[2665] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1688; and Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 903.

[2666] Moreover, used aircraft can represent a viable alternative for some customers also, contributing to pressure on LCA manufacturers to price their new LCA near competitive levels. (M. Baye, NERA, *Response to the EU's Allegations Regarding the Nature and Effect of U.S. Aeronautics R&D Subsidies to Boeing* (6 October 2015) (Baye Report), (Exhibit USA-581), para. 9 and fn 6).

[2667] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1769.

[2668] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1651.

[2669] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 903.

[2670] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 903.

9.20. Aircraft acquisitions form the key element of an airline's business and strategic plan.[2671] Every LCA sales campaign involves a unique focus on the needs of the particular airline or leasing company. Airlines generally evaluate the competing Airbus and Boeing offers according to factors such as price and pricing expectations, direct operating costs, capacity differences, dates of delivery, options, asset value expectations, residual value assumptions, disposal of used aircraft, the "family concept", engine manufacturers, guarantees, support, financing, cost of change, and cost of diversifying and subjective factors.[2672] While differences in price, capacity and direct operating costs generally are the most significant factors that determine the outcome of an LCA sales campaign, the significance of those factors in any LCA sales campaign varies depending on the fleet and business plans of the customer, and its strategic goals.[2673]

9.21. During an LCA sales campaign, the customer will conduct its own technical and economic evaluations of each LCA manufacturer's proposal, and assess the total cost and anticipated revenue stream presented by the particular proposal. This evaluation involves arriving at an estimate of the present value of costs associated with the acquisition of a new fleet of aircraft (e.g. price, maintenance costs, direct and indirect operating costs, financing, training costs) against the present value of the revenue stream that would be expected to be generated by the proposed fleet. The resultant calculation is the net present value (NPV) to the customer. Price concessions made by the manufacturer can offset disadvantages associated with certain "non-price" factors that are part of the NPV calculation, but offsetting certain non-price factors through price concessions can, in certain cases, be costly.[2674]

9.22. In the original proceeding, the panel found that the market for LCA is a global market geographically, and neither party disputes that this remains the case.[2675] The European Communities had presented its original case on the basis that there were five LCA product markets, of which the following three LCA product markets and aircraft were relevant to its claims[2676]:

a. Single-aisle aircraft with a capacity of approximately 100 to 200 passengers in a two-class configuration, and a short to medium range. The relevant Boeing and Airbus aircraft in this LCA product market were the 737NG and A320ceo families of LCA, respectively.

b. Wide-body aircraft with a capacity of approximately 200 to 300 passengers in a three-class configuration, and a medium to long or ultra-long range. The relevant Boeing aircraft in this LCA product market were the 767 and the 787-8. The relevant Airbus aircraft in this LCA product market were the A330 and A350XWB-800.

[2671] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1693. Airlines either purchase new LCA outright from Boeing or Airbus, finance purchases through instruments such as finance leases, lease the aircraft that they operate, or purchase used aircraft from other airlines or leasing companies.

[2672] Statement of C. Mourey, "Current Competitive Conditions in the LCA Industry", 27 March 2013 (Mourey Statement), (Exhibit EU-34) (BCI), para. 44. The "family concept" refers to LCA manufacturers' practice of offering several derivatives of one base LCA, generally with limited differences in the airframe (aside from its length), on-board systems, cockpits and handling qualities. This concept reduces costs by allowing flight crews to operate a range of LCA, since the training and licensing requirements qualify crews to shift from one aircraft to another within the same family. (Mourey Statement, (Exhibit EU-34) (BCI), para. 55). The subjective factors that influence an airline customer or leasing company's evaluation of Airbus and Boeing offers include the impact on the image of an airline of flying a particular LCA, value of product features such as cabin width and aesthetics, the long-term viability of the product and manufacturer, long-term risks of new technologies and materials and risks associated with a single engine choice. (Mourey Statement, (Exhibit EU-34) (BCI), para. 61).

[2673] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1694. Direct operating costs include fuel burn, maintenance costs, user charges (e.g. take-off, landing, and navigation fees), and costs for crew. According the Airbus' Christophe Mourey, direct costs are almost always among the crucial factors analysed by airlines in purchasing LCA. Together with the capital costs of the aircraft, direct costs determine the cost basis of the airline, and thus have a significant impact on its profitability. (Mourey Statement, (Exhibit EU-34) (BCI), para. 47).

[2674] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1694.

[2675] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1671.

[2676] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1669 and 7.1670. The two other LCA product markets not relevant to the original proceeding are: (a) wide-body aircraft with a capacity of 400 to 500 passengers in a three-class configuration (or the respective cargo equivalent) and a long range; and (b) super wide-body aircraft with a capacity in excess of 500 passengers in a three-class configuration (or the respective cargo equivalent), and a long range.

c. Wide-body aircraft with a capacity of approximately 300 to 400 passengers in a three-class configuration, and a long or ultra-long range. The relevant Boeing aircraft in this LCA product market were the 777 family of LCA. The relevant Airbus aircraft in this LCA product market were the A340 and A350XWB-900 and A350XWB-1000 families.

9.23. The panel evaluated the European Communities' serious prejudice claims on the basis of the LCA product markets it had identified and the three groups of "subsidized" Boeing LCA which corresponded to three groups of Airbus "like" products in each product market.[2677] Neither party appealed this aspect of the original panel's serious prejudice evaluation and the Appellate Body considered the European Union's appeal on the basis of these LCA product markets. Since 2006 (the end of the reference period in the original proceeding) there have been important developments in the LCA product markets; notably, the launch of new single-aisle and wide-body LCA incorporating new generation technologies, which are intended eventually to supersede existing current generation aircraft marketed by both Boeing and Airbus.

9.24. With regard to wide-body LCA, Boeing continues to produce the 767, although it receives limited orders.[2678] Airbus continues to produce the A330, which has two size variants, the A330-200 and the A330-300.[2679] As described in the original proceeding, the 787 programme was launched by Boeing in 2004, and in response, Airbus launched the A350XWB programme in late 2006.[2680] The 787 family has three size variants; the 787-8, which is the Boeing aircraft closest in size (as represented by maximum seat number) to the A330-200, while the 787-9 is closest in size to the A330-300. The 787-10, launched in June 2013, is close in size to the 777-200ER which, along with the 777-300ER, is in the process of being replaced by two larger size variants, the 777-8X and the 777-9X.[2681] The A350XWB family also has three size variants, the A350XWB-800, the A350XWB-900, and the A350XWB-1000. The A350XWB-1000 is roughly equivalent in size to the new 777-8X, the A350XWB-900 to the 787-10 (and the 777-200ER), and the A350XWB-800 to the 787-9.[2682] The 777X was formally launched in November 2013, although Boeing has had authorization to offer the 777X in sales campaigns and take commitments to purchase since May 2013.[2683] The new 777-9X (which is replacing the 777-300ER) has no equivalently-sized Airbus competitor.[2684]

9.25. Table 4 below provides a comparison of the existing and new technology Airbus and Boeing wide-body, twin-aisle LCA at issue in this proceeding, based on seating capacity, MTOW, range and list price.

[2677] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1672.

[2678] According to Christophe Mourey, the 767 averages eight aircraft per year since the beginning of 2007, although the Tanker version of the 767 recently won a major contract from the U.S. Air Force. (Mourey Statement, (Exhibit EU-34) (BCI), para. 95). Boeing's 767 assembly line includes a 767 derivative to support the military aircraft refuelling tanker programme. In its 2014 Annual Report, Boeing reported that in October 2014 it increased its combined tanker and commercial production rate from 1 to 1.5 per month and planned to increase to two per month in 2016. (Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A: Boeing's Annual Report on Form 10-K for the fiscal year ended 31 December, 2014, p. 28).

[2679] While the original panel found, among other things, that A330 prices and sales in the 2004-2006 reference period were adversely affected by the launch of the 787 in 2004, in more recent years the A330 appears to have enjoyed significant sales. (See Mourey Statement, (Exhibit EU-34) (BCI), paras. 97 and 116). Further, Airbus launched the A330neo family (comprising the A330-800neo and A330-900neo), a re-engined version of the A330 which features certain other incremental innovations. (See Airbus Press Release, "Airbus launches the A330neo", 14 July 2014, (Exhibit EU-1667)). At the time of launch in July 2014, Airbus expected that deliveries of the A330neo would start in the final quarter of 2017.

[2680] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1777.

[2681] D. Tsang, "Boeing 777X & 787-10X unfazed by 787 battery woes", *Aspire Aviation*, 14 February 2013, (Exhibit EU-611); and "787-10 to come later than suggested", *Leeham, News and Comment*, 14 August 2012, (Exhibit EU-612).

[2682] Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299), p. 2.

[2683] D. Gates, "Boeing to offer 777X for sale as launch nears", *Seattle Times*, 1 May 2013, (Exhibit EU-1300).

[2684] Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299), p. 2.

Table 4: Airbus and Boeing wide-body, twin-aisle aircraft compared on the basis of seating capacity, MTOW, range and price[2685]

LCA model	Seats	MTOW (t)	Range (nautical miles)	List price (USD millions)
787-8	246	227.93	7,350	206.8
A330-200	246	238.00	6,850	208.6
A350XWB-800	276	259.00	8,200	245.5
787-9	280	247.21	7,600	243.6
A330-300	300	235.00	5,600	231.1
777-200ER	302	297.55	7,350	258.8
A350XWB-900	315	268.0	7,750	277.7
787-10	300-330	250.8	7,000	290
777-300ER	360	351.53	7,650	315
A350XWB-1000	369	308.0	8,000	320.6
777X (8)	350	315	9,300	349.8
777X (9)	400	344	8,200	377.2

9.26. There have also been developments in the single-aisle LCA offered by Boeing and Airbus, driven largely by advances in engine technologies. In December 2010, Airbus launched a re-engined A320 family aircraft (A319, A320, and A321 models) as a new engine option (neo) family. First deliveries were scheduled for October 2015. Some eight months later, in August 2011, Boeing launched an allegedly similarly fuel-efficient, improved version of its 737NG family with new engines, the 737 MAX family, with first deliveries scheduled for 2017.[2686]

9.27. The European Union argues that there have been a number of other developments in the LCA markets since 2006 that complement the launches of the new generations of LCA and impact the competitive relationships among the relevant Boeing and Airbus LCA, warranting a different delineation of the relevant LCA product markets from that adopted by the panel in the original proceeding.[2687] More specifically, the European Union points to rising fuel prices, which have incentivized airlines to update their older fleets with new, more technologically advanced, fuel efficient aircraft. New technology aircraft, however, are only available for deliveries in the long-term, whereas existing technology aircraft are still available for short-term delivery needs.[2688] Further, increasing congestion and slot constraints at hub airports, resulting from growing air

[2685] The data in Table 4 above is compiled from the following evidence; seating capacity: Boeing Press Release, "Boeing Launches 787-10 Dreamliner", 18 June 2013, (Exhibit EU-1159) for 787-10; Boeing website, "777X Gallery Experience", "777X Details & Specifications", (Exhibit EU-1302) for 777X8 and 9; and Mourey Statement, (Exhibit EU-34) (BCI) for all other LCA models; MTOW: D. Tsang, "Boeing 777X & 787-10X unfazed by 787 battery woes", *aspire aviation*, 14 February 2013, (Exhibit EU-611) for 787-10, 777X8 and 9; and Mourey Statement, (Exhibit EU-34) (BCI) for all other LCA models; range: Boeing Press Release, "Boeing Launches 787-10 Dreamliner", 18 June 2013, (Exhibit EU-1159) for 787-10; Boeing website, "777X Gallery Experience", "777X Details & Specifications", (Exhibit EU-1302) for 777X8 and 9; and Mourey Statement, (Exhibit EU-34) (BCI) for all other LCA models; and list price: Boeing Press Release, "Boeing Launches New Commercial Airplane; Highlights Innovation, Efficiency and Partnerships at 2013 Paris Air Show", 20 June 2013, (EU-1184) for 787-10 (2013 list price), obtained by dividing approximate list price values of orders by number of aircraft ordered; Boeing website, "777X Gallery Experience", "777X Details & Specifications", (Exhibit EU-1302) for 777X8 and 9 (2013 list prices); Boeing List Prices, (EU-1210) for 787-8, 787-9, 777-200ER, and 777-300ER (2012 list prices); and European Union's first written submission, paras. 907, 918, and 923 for all Airbus models (2012 list prices).

[2686] Mourey Statement, (Exhibit EU-34) (BCI), para. 81.

[2687] European Union's first written submission, paras. 888-893.

[2688] European Union's first written submission, paras. 889 and 890; and Mourey Statement, (Exhibit EU-34) (BCI), paras. 11-35.

traffic demand, have increased the attractiveness of larger aircraft within each of the aircraft families.[2689]

9.28. The European Union argues that as a result of the foregoing developments in the LCA industry since 2006, the Panel should examine its claims in this proceeding on the basis of seven (rather than five) current global product markets. This product market delineation is based on the proposition that existing technology aircraft, which are less fuel efficient but available for earlier delivery, and new technology aircraft, which are more fuel efficient but may not be available for delivery for many years, despite their similarities in seating capacity, range, and MTOW, in fact do not exercise meaningful competitive constraints on one another, and therefore are more appropriately considered to compete in distinct LCA product markets.[2690] The European Union's proposed delineation of the relevant LCA product markets is depicted below:

Table 5: The European Union's proposed product market delineation

European Union's proposed product market delineation in this compliance proceeding[2691]		
Relevant product market	**Airbus LCA**	**Boeing LCA**
Single-aisle Existing technology/near-term delivery	A320ceo family	737NG family
Single-aisle New technology/late-term delivery	A320neo family	737 MAX family
Medium-sized twin-aisle Existing technology/near-term delivery	A330 family	N/A
Medium- and *large-sized twin-aisle* New technology/late-term delivery	A350XWB-800 A350XWB-900 A350XWB-1000	787-8 787-9 787-10 777X
Large-sized twin-aisle Existing technology/near-term delivery	N/A	777

9.29. The differences between the product market delineation relied on by the panel in the original proceeding, and the European Union's proposed product market delineation in this proceeding can be illustrated as follows:

[2689] European Union's first written submission, para. 889; and Mourey Statement, (Exhibit EU-34) (BCI), paras. 11-35.

[2690] European Union's first written submission, paras. 901-905 and 910-914.

[2691] Accordingly, the European Union considers that the 767, A340, and Original A350 are no longer in any LCA product market.

Table 6: Comparison of the product market delineation in the original proceeding with the European Union's proposed product market delineation

Product market delineation in the original proceeding	European Union's proposed product market delineation in the compliance proceeding
100-200 seat single-aisle LCA	*Single-aisle* Existing technology/near-term delivery
	Single-aisle New technology/late-term delivery
200-300 seat wide-body LCA	*Medium-sized twin-aisle* Existing technology/near-term delivery
	Medium- and large-sized twin-aisle New technology/late-term delivery
300-400 seat wide-body LCA	*Large-sized twin-aisle* Existing technology/near-term delivery

9.30. As can be seen from the above table, the European Union's proposed LCA product market delineation essentially means that the single-aisle LCA product market would be divided into two product markets (one for older technology, current generation LCA, and one for new technology, new generation LCA). The 200-300 seat and 300-400 seat wide-body, twin-aisle product markets would be combined but then distinguished on the basis of the technological generation and delivery availability. In other words, the European Union's proposed market delineation for wide-body, twin-aisle LCA groups current generation, existing technology LCA in a medium-sized wide-body segment with current generation, existing technology LCA in a large-sized wide-body segment, neither of which competes with any new technology, wide-body aircraft, and a new technology wide-body segment that covers both medium wide-body LCA and large wide-body LCA.

9.31. The United States does not agree that the European Union's proposed LCA product markets are an accurate reflection of LCA competition and considers that the Panel would be justified in rejecting the European Union's adverse effects claims because they are not based on valid markets, within the meaning of Articles 6.3(a) through (c) of the SCM Agreement.[2692]

9.32. The European Union's proposed product market delineation raises two issues. The first is whether the European Union has demonstrated that existing and new technology aircraft, which have different levels of fuel efficiency, but which otherwise have similar range, seating capacity, and MTOW, compete in separate product markets. The second is whether it is appropriate to abandon the original panel's delineation of the wide-body, twin-aisle aircraft product markets as comprising separate product markets for smaller- and larger-sized twin-aisle aircraft, in favour of the European Union's new approach, which treats all of the new technology wide-body, twin-aisle aircraft, regardless of variations in size, range, and MTOW, as competing in the same product market.

9.33. As the Appellate Body has explained, the concept of serious prejudice relates to, and arises out of, competitive engagement in a market.[2693] In other words, a subsidized product can only cause serious prejudice to another product if the two products in question compete in the same market.[2694] In this proceeding, the European Union argues that subsidies to certain Boeing LCA families cause serious prejudice in respect of certain Airbus LCA families. In order to assess these claims it is necessary to determine that the particular Boeing LCA identified by the European Union as the relevant "subsidized product" in fact compete (or potentially compete) in the same product market as the Airbus LCA to which they are alleged to have caused serious prejudice. The

[2692] United States' first written submission, para. 695.
[2693] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1119.
[2694] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1119.

Appellate Body has provided guidance on how different product markets might be identified, explaining that "two products would be in the same market if they were engaged in actual or potential competition in that market".[2695] The Appellate Body said that this would be the case when two products are "sufficiently substitutable so as to create competitive constraints on each other".[2696] The European Union's proposed product market delineation therefore raises the question of whether, due to developments in the conditions of competition in the LCA markets, existing technology and new technology LCA of similar capacity, range, and MTOW have ceased to exercise competitive constraints on each other, and as such now compete in separate product markets, justifying a departure from the product market delineation on which the original panel and Appellate Body based their analyses and findings.

9.34. Our review of the evidence demonstrates that, among the various single-aisle LCA, and among various twin-aisle LCA, there is a high degree of similarity between Airbus and Boeing products *regardless of whether they are current or new generation models*.[2697] Specifically, old and new generation aircraft of similar capacity, range, and MTOW share close similarities in seat number, MTOW, length and wing-span.[2698] This is more pronounced for single-aisle LCA, but there is nonetheless also sufficient overlap across all twin-aisle LCA models. While such similarities between LCA *of themselves* are not necessarily determinative of whether the LCA in question place meaningful competitive constraints on each other, they may well be dispositive where those similarities also point to the products serving the same purpose in terms of the routes and passenger volumes for which they are suitable, because they suggest that those LCA would likely meet the specific requirements of the same customers. We also note that the Appellate Body has specifically pointed to physical similarities between LCA as a relevant factor when determining the demand-side substitutability of different aircraft.[2699]

9.35. The European Union's argument that existing technology and new technology aircraft occupy separate product markets relies primarily on the evidence of Christophe Mourey, Senior Vice President Contracts at Airbus (the Mourey Statement).[2700] The Mourey Statement explains that airlines purchase LCA for specific missions, based on the timing, range, and passenger demand in the airline's route network. The suitability of an LCA model for a specific mission depends primarily on its direct operating costs, size and range. These qualitative and quantitative differences and preferences are *quantified* into an NPV calculation, which represents a hypothetical assessment of the stream of future revenues and costs over time of the aircraft performing that specific mission. Airline customers and leasing companies compare the NPV rates of competing Airbus and Boeing offers as part of their assessment of which aircraft manufacturer's offer will be the more economical, and represent the best value over time.[2701]

9.36. The Mourey Statement undertakes an NPV analysis of different pairings of new technology and existing technology aircraft. Specifically, Mr Mourey calculates the NPV differences between, respectively, the A320ceo versus the A320neo, and the A330 and A350XWB versus the 787, based on an assumed common delivery date and a hypothetical typical mission. Mr Mourey concludes that, *when fuel costs are high*, the NPV advantage of a new technology aircraft over its equivalently-sized, existing technology counterpart is so significant that customers would "have a clear preference" for the former.[2702] Mr Mourey then notes, however, that new technology aircraft have later delivery availabilities than existing technology aircraft, and are therefore unable to fill an airline's more immediate needs, for example to secure capacity until delivery positions for new technology aircraft become available.[2703] Mr Mourey argues that new technology aircraft therefore

[2695] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1122.
[2696] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1120.
[2697] See Mourey Statement, (Exhibit EU-34) (BCI).
[2698] See Mourey Statement, (Exhibit EU-34) (BCI). See also Panel Report, *EC and certain member States – Large Civil Aircraft (Article 21.5 – US*) at paras. 6.1239-6.1240 and 6.1286 (for single-aisle LCA) and 6.1295-6.1300 (for twin-aisle LCA). The panel in that case considered that, despite differences in maximum flying range between existing technology and new technology single-aisle LCA, the evidence before it suggested that the new generation single-aisle LCA are marketed as updated, more fuel-efficient versions of their existing technology counterparts for the purpose of serving essentially the same missions already operated by existing technology LCA, at paras. 6.1246 and 6.1248.
[2699] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1134.
[2700] Mourey Statement, (Exhibit EU-34) (BCI).
[2701] Mourey Statement, (Exhibit EU-34) (BCI), para. 69.
[2702] Mourey Statement, (Exhibit EU-34) (BCI), paras. 74-92 (comparing the A320neo and the A320ceo), and 115-131 (comparing the A330 with the 787 and the A350XWB).
[2703] Mourey Statement, (Exhibit EU-34) (BCI), paras. 91 and 122-127.

compete in a market for long-term delivery positions while existing technology aircraft compete separately in a market for short-term delivery positions. As explained above, on the basis of this analysis, the European Union considers that the new technology A320neo and the 737 MAX compete against each other in one LCA product market, while the existing technology A320ceo and the 737NG compete against each other in another LCA product market. Similarly, contrary to the basis on which the panel found serious prejudice in respect of the A330 in the original proceeding, the European Union considers that the existing technology A330 can no longer be said to compete against the new technology 787 and now occupies an LCA product market of its own.

9.37. We do not consider that the evidence presented in the Mourey Statement demonstrates that existing technology aircraft and new technology aircraft of similar capacity, range, and MTOW compete in separate LCA product markets. First, the Mourey Statement's NPV analysis, which purports to determine the value advantage of new technology aircraft over similarly-sized existing technology aircraft, compares the aircraft *only* on the basis of the operating costs of flying typical routes over time. Mr Mourey's analysis excludes factors such as delivery availability and fleet commonality, which can also significantly affect the value of a particular offer. On the basis of comparing operating costs alone, the NPV advantage of new technology aircraft appears significant. It is this degree of advantage that Mr Mourey argues cannot be offset by pricing concessions on existing technology aircraft. By limiting the comparison to operating costs, however, Mr Mourey overstates the advantage that a new technology aircraft might have in an actual sales campaign against an equivalently-sized, existing technology aircraft.[2704] If, for example, the delivery availability of existing and new technology aircraft is taken into account, the value advantage of the new technology aircraft's lower operating costs would be *offset* by the existing technology aircraft's earlier availability. Similarly, if an existing technology aircraft shared commonality with a customer's fleet, this advantage would, at least partially, also offset a new technology aircraft's operating cost advantage. Mr Mourey's conclusion that the value difference between existing and new technology aircraft cannot reasonably be offset by price concessions assumes a value advantage in which no factors other than operating costs are taken into account in a customer's assessment of the value differential offered by the two types of aircraft. This is not the case.[2705] We therefore do not accept the fundamental premise underlying Mr Mourey's argument, which is that the value advantage represented by a new technology aircraft's lower operating costs cannot be offset by pricing concessions on equivalently-sized existing technology aircraft.

9.38. Even if we were to accept that a new technology aircraft's operating cost advantage could not be offset by pricing concessions on existing technology aircraft, we do not consider that this would necessarily demonstrate that the latter does not exercise competitive constraints on the former.[2706] The very fact of a new technology aircraft's better value assumes at least *some* cap on its price, which must be defined in relation to its existing technology alternative.[2707] If the prices of a new technology aircraft increased beyond a certain point, it would cease to be the more economical choice, despite its large operating cost advantage.[2708] The Mourey Statement compartmentalizes the needs of LCA customers into existing technology, near-term availability versus new technology, long-term availability in a way that in our view does not reflect the reality of the markets. The European Union supports its case that subsidies to the various Boeing aircraft cause serious prejudice to the European Union's interests in the post-implementation period by reference to evidence of the competitive interactions between Boeing and Airbus in particular LCA sales campaigns involving the 787, 777X, 737 MAX, and 737NG, on the one hand, and the A350XWB, A320neo, and A320ceo, on the other, between 2007 and 2015. We discuss this sales

[2704] See also Panel Report, *EC and certain member States – Large Civil Aircraft (Article 21.5 – US)*, paras. 6.1263-6.1269, 6.1288, and 6.1345.

[2705] See para. 9.20 above.

[2706] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1120.

[2707] See also Panel Report, *EC and certain member States – Large Civil Aircraft (Article 21.5 – US)*, para. 6.1262.

[2708] Indeed, there is evidence to suggest that Airbus set the prices of its new technology A320neo by reference to the prices of its existing technology A320ceo. (S. Hamilton, "A320 NEO to have $7-8 million Price Premium", *Flight International*, 23 August 2010, (Exhibit USA-361)). A 2013 article indicated that A320ceos and 737NGs were being "massively discounted" owing to customer preference for the more fuel-efficient versions of the A320neo and 737 MAX that were then in development. ("Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709)). We note that Airbus marketing materials suggest that the existing technology A330 is compared to the new technology 787. (See F. Bregier, "Airbus Results 2012, Outlook 2013", Presentation at the Annual Press Conference, 17 January 2013, (Exhibit USA-296)).

campaign evidence in Sections 9.3.2.2 and 9.4.3 in connection with our evaluation of the European Union's serious prejudice claims in the wide-body, twin-aisle, and narrow-body, single-aisle LCA product markets, as well as in an appendix to the Report which is designated as HSBI (the HSBI Appendix).[2709] The sales campaign evidence shows that Airbus and Boeing will often offer a mix of both old and new technology LCA in individual sales campaigns, wherein existing technology aircraft are operated as an interim solution, pending the delivery of new technology aircraft.[2710] A particularly attractive offer for the existing technology A320ceo, for example, will exercise competitive constraints on Boeing's competing "package deal" comprising 737NGs and new technology 737 MAXs. This is an example of existing technology aircraft exercising competitive constraints on new technology aircraft.[2711]

9.39. In light of the foregoing, we consider that the European Union has not demonstrated that existing technology aircraft and new technology aircraft of similar capacity, range, and MTOW no longer exercise meaningful competitive constraints on each other such that they presently compete in separate LCA product markets.[2712]

9.40. Therefore, in evaluating the European Union's claims that the United States has failed to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement, because the unwithdrawn subsidies cause present adverse effects, in the form of serious prejudice, after the end of the implementation period, we treat the existing technology A320ceo and 737NG, as well as the new technology A320neo and 737 MAX, as all competing in the same product market for narrow-body, single-aisle aircraft. We similarly treat the existing technology A330 and 777 families as competing with new technology twin-aisle, wide-body LCA of both Airbus (the A350XWB family) and Boeing (the 787 and 777X families) and not in their own distinct monopoly product markets.

9.41. The second issue raised by the European Union's proposed product delineation is whether the Panel should treat all of the wide-body, twin-aisle aircraft at issue in this proceeding, regardless of variations in seating capacity, range, and MTOW, as competing in one wide-body, twin-aisle product market, as the European Union does in respect of its proposed "medium- and large-sized twin aisle, new technology" product market, or whether the variations in seating

[2709] See Appendix 2.

[2710] For single-aisle aircraft, seven of the sales campaigns submitted by the European Union involved split offers across existing and new technology aircraft. These sales campaigns are discussed at the following paragraphs of the HSBI Appendix (Appendix 2): 173-180; 181-187; 190-195; 196-201; 212-217; 218-223; and 224-230. For twin-aisle aircraft, at least three of the sales campaigns submitted by the European Union involved split offers across existing and new technology aircraft, including the sales campaigns discussed at the following paragraphs of the HSBI Appendix (Appendix 2): 12-23; 24-30; and 51-60.

[2711] For a number of the sales campaigns which the European Union submits in support of its claims of serious prejudice to Airbus new technology aircraft, the evidence specifically refers to aspects of the existing-technology portion of Boeing's competing offer as posing a threat to Airbus' new-technology offer. With respect to competition between current and new technology LCA in the single-aisle market, see e.g. the sales campaign discussed at paras. 181-187 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-898) (HSBI); the sales campaign discussed at paras. 190-195 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-906) (HSBI); the sales campaign discussed at paras. 196-201 of the HSBI Appendix (Appendix 2) (HSBI) and **[[HSBI]]** (Exhibit EU-924) (HSBI); the sales campaign discussed at paras. 212-217 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-952) (HSBI); and the sales campaign discussed at paras. 218-223 of the HSBI Appendix (Appendix 2) and European Union's second written submission, paras.1709-1711. With respect to competition between existing and new technology LCA in the twin-aisle market, see e.g. the sales campaign discussed at paras. 63-65, 70-73, and 76 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-845) (HSBI); the sales campaign discussed at paras. 128-134 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-1484) (HSBI); and the sales campaign discussed in **[[HSBI]]** (Exhibit EU-787) (HSBI).

[2712] We note that the panel in *EC and certain member States – Large Civil Aircraft (Article 21.5 – US*) similarly concluded, on the basis of, *inter alia*, evidence which was not before this Panel, that for the purpose of the serious prejudice disciplines of the SCM Agreement, all Airbus and Boeing single-aisle aircraft compete in one and the same LCA product market, and all five families of Airbus and Boeing twin-aisle LCA exercise differing but overall sufficient degrees of competitive constraints against each other such that they should all be considered to fall within the same LCA product market for the purpose of the serious prejudice claims considered by that panel. (See Panel Report, *EC and certain member States – Large Civil Aircraft (Article 21.5 – US*), paras. 6.1286 and 6.1370). We reach our conclusions as to the appropriate delineation of LCA product markets for purposes of this proceeding on the basis of the evidence before us as to the present conditions of competition in the LCA product markets. We acknowledge that these conditions will continue to evolve. We therefore do not rule out the possibility that, in time, existing technology LCA could move into distinct product markets from their new technology counterparts.

capacity, range, and MTOW in fact warrant treating wide-body, twin-aisle aircraft, regardless of the vintage of their technologies, as competing in two or more distinct wide-body product markets.

9.42. We recall that the original panel, for purposes of evaluating the European Communities' serious prejudice claims in the 2004-2006 period, had identified two relevant wide-body, twin-aisle LCA product markets in that proceeding: A 200-300 seat market and a 300-400 seat market.[2713] Since the original proceeding, however, there has been a general shift towards larger size variants within aircraft families for both Airbus and Boeing LCA. The consequence is that competition among wide-body, twin-aisle aircraft no longer obviously occurs within the confines of a 200-300 seat and 300-400 seat product market delineation. Further, as explained above, Boeing and Airbus in fact *compete* by differentiating their aircraft and optimising *new size-variants to fill existing gaps* in the market. As such, it is not the case that one Airbus wide-body, twin-aisle LCA family is designed to compete primarily with an opposing Boeing wide-body, twin-aisle LCA family. Rather, wide-body, twin-aisle families contain a number of variants that compete against variants from one or more competing wide-body, twin-aisle LCA families, depending on the particular size of the variants involved. For example, both the 787 and the A350XWB families include variant models that cover a variety of seating capacity and range requirements from 246 seats to 369 seats.[2714] In light of these developments in the LCA markets since the 2004-2006 period considered by the original panel, we consider that it is no longer appropriate to base our evaluation of the European Union's serious prejudice arguments involving wide-body, twin-aisle LCA on the 200-300 seat and 300-400 seat product market delineation used by the original panel and Appellate Body.

9.43. We note our earlier observation that, while there is overlap between twin-aisle models in terms of capacity, range, MTOW, length and wing-span, there is generally greater variation in these factors for wide-body, twin-aisle LCA compared to narrow-body, single-aisle LCA. Further, our analysis of the sales campaign evidence suggests that, when purchasing wide-body, twin-aisle LCA, customers separately categorize their needs according to medium-sized, twin-aisle aircraft and larger-sized, twin-aisle aircraft, to the extent that they often effectively run two separate competitions within the same sales campaign.[2715] Further, having reviewed the sales campaign evidence for the wide-body, twin-aisle sales campaigns and the aircraft offered by each airframe manufacturer to meet the customer's particular requirements, it seems that within the general categories of medium-sized, twin-aisle aircraft and larger-sized, twin-aisle aircraft, the following aircraft tend to be offered in competition with each other[2716]:

Table 7: Competitive relationships between different wide-body, twin-aisle LCA

Relevant product market	Airbus LCA	Boeing LCA
Medium-sized twin-aisle aircraft	A330 family A350XWB-800	787-8 787-9
Larger-sized twin-aisle aircraft	A350XWB-900 A350XWB-1000	787-10 777-8X 777-9X 777 family

9.44. We caution that it is not possible to draw a bright-line distinction. Wide-body, twin-aisle aircraft are differentiated products, and customers' requirements in terms of size, routes to be served and availability vary considerably. It is certainly possible that a larger medium-sized aircraft (e.g. the 787-9) could in some circumstances, depending on the particular needs of the

[2713] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1669-7.1675; and Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 898.

[2714] Table 4 Airbus and Boeing wide-body, twin-aisle aircraft compared on the basis of seating capacity, MTOW, range and price.

[2715] See e.g. the sales campaign discussed at paras. 136-141 of the HSBI Appendix (Appendix 2), **[[HSBI]]** (Exhibit EU-1496) (HSBI), and **[[HSBI]]** (Exhibit EU-1498) (HSBI); the sales campaign discussed at paras. 144-149 of the HSBI Appendix (Appendix 2) and European Union's response to Panel question No. 169, para. 299; and the sales campaign discussed at paras. 152-158 of the HSBI Appendix (Appendix 2) and **[[HSBI]]** (Exhibit EU-1533) (HSBI).

[2716] See e.g. the split of aircraft considered "medium" and "larger" twin-aisle aircraft in the sales campaigns discussed at paras. 135-142, 143-150, and 151-159, respectively, of the HSBI Appendix (Appendix 2).

customer in terms of capacity and routes to be served, exercise meaningful competitive constraints on a smaller larger-sized aircraft (e.g. the A350XWB-900).

9.45. Nonetheless, we consider that the particular product market delineation identified in Table 7 above is supported by the evidence before us, and provides a reasonable and adequate basis on which to evaluate the European Union's serious prejudice claims. While we have departed from the European Union's proposed product market delineation by rejecting the proposition that new technology LCA do not compete in the same product markets as their similarly-sized existing technology counterparts, and by distinguishing competition between medium-sized twin-aisle LCA, on the one hand, from competition between larger-sized twin-aisle on the other, we do not agree with the United States that this justifies rejecting the European Union's adverse effects claims owing to a failure to frame the serious prejudice allegations on the basis of the correct markets, within the meaning of Articles 6.3(a) through (c) of the SCM Agreement.

9.46. As stated by the original panel and Appellate Body, "provided that the European Communities demonstrated one of the alleged forms of serious prejudice in subparagraphs (a) through (c) of Article 6.3 *in relation to a particular Boeing subsidized LCA and a corresponding Airbus like product*, it would establish serious prejudice for purposes of Article 5(c)".[2717] The European Union's serious prejudice case in this proceeding is that, among other things, subsidies benefiting particular Boeing wide-body, twin-aisle family LCA cause serious prejudice to its interests in respect of particular Airbus wide-body, twin-aisle family LCA. Specifically, the European Union argues that the effect of the U.S. subsidies benefiting the 787 is serious prejudice to its interests in respect of the A350XWB and the A330, while the effect of the U.S. subsidies benefiting the 777X is serious prejudice to its interests in respect of the A350XWB. It is clear from the product market delineation in Table 7 above that certain size variations of the 787 compete with certain size variations of the A350XWB and with the A330, while certain size variations of the 777X compete with certain size variations of the A350XWB. We consider that the European Union's evidence satisfactorily demonstrates, for each of the pairings of Boeing and Airbus in the European Union's serious prejudice case, that the relevant subsidized Boeing LCA compete against the relevant, corresponding Airbus like product.

9.47. On the basis of the foregoing:

a. We consider that it has not been demonstrated that new technology LCA and existing technology LCA of similar seating capacity, range, and MTOW compete in distinct LCA product markets.

b. Therefore, we will evaluate the European Union's claims regarding the effects of subsidies to the 737 MAX on prices and sales of the A320neo, and the effects of subsidies to the 737NG on prices and sales of the A320ceo, on the basis that these four aircraft families all compete in a narrow-body, single-aisle aircraft LCA product market.

c. We will similarly treat the A330 and 777 as competing with new technology A350XWB, 787 and 777X family variants in the wide-body, twin-aisle LCA product markets. We consider that it is possible to evaluate the European Union's serious prejudice claims involving wide-body, twin-aisle aircraft even though we do not accept the European Union's proposed delineation of the wide-body, twin-aisle markets, because those claims are based on the notion that the 787 and 777X families compete with variants of the A350XWB.[2718]

[2717] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)* para. 898, referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1667. (emphasis added)

[2718] We consider that the A330 (an existing technology aircraft) competes with the smaller-sized variants of the 787 and is in the same LCA product market as smaller-sized variants of the A350XWB. For reasons that we explain in fn 3173 below, however, our rejection of the European Union's argument that the A330 occupies its own "medium-sized twin-aisle existing technology" LCA product market does not affect the outcome of our analysis of the effects of the subsidies on the A330.

9.2.2 The different aspects of LCA prices and how LCA manufacturers such as Boeing set LCA prices

9.48. As we explain in greater detail in Sections 9.3.2.2 and 9.4.3, the European Union argues that the post-2006 subsidies that operate through a price causal mechanism enable Boeing to lower the prices of its LCA in highly competitive LCA sales campaigns.[2719] Our evaluation of these arguments requires that we first explain the various aspects of an LCA "price" as well as the factors that influence the prices set by LCA manufacturers.

9.49. As explained in the original proceeding, the "net fly-away price" of an aircraft comprises the "total aircraft price" less credits and price concessions offered by the LCA manufacturer (i.e. either Boeing or Airbus), estimated engine manufacturer discounts and other discounts offered by suppliers of buyer furnished equipment. Concessions provided by the engine manufacturers and suppliers of buyer furnished equipment are negotiated between the customer and the supplier, without the direct involvement of the LCA manufacturer.[2720] According to the European Communities' expert in the original proceeding, pricing offered by engine manufacturers and suppliers of buyer furnished equipment can have a significant impact on the net fly-away price in a manner that is largely unknown to the LCA manufacturers.[2721]

9.50. The "total aircraft price" in turn, is composed of the *airframe basic price* plus charges for changes to standard specifications, buyer furnished equipment, supplier furnished equipment and the engine basic list price.[2722] LCA manufacturers publish annual "list" or "catalogue" basic airframe prices for each model of LCA. List prices are not indicative of the prices that airline customers and leasing companies actually pay for the airframe, however.[2723] Indeed, there appear to be no transparent, market prices for Boeing or Airbus LCA. Airframe prices are negotiated individually with each customer in individual sales campaigns. Depending on the model of aircraft and the closeness of competition of potential substitutes for the customer's requirements, the size of the order and status of the customer, discounts from the published list prices can range from 35-40% to as much as 60%.[2724]

9.51. As previously mentioned, the European Union supports its case that subsidies to the various Boeing aircraft cause serious prejudice to the European Union's interests in the post-implementation period by reference to evidence of the competitive interactions between Boeing and Airbus in particular LCA sales campaigns involving the 787, 777X, 737 MAX, and 737NG, on the one hand, and the A350XWB, A320neo, and A320ceo, on the other, between 2007 and 2015.[2725] Much of this evidence has been designated as HSBI by the European Union and the United States, and we therefore discuss it in detail only in an HSBI Appendix (Appendix 2 of this Report). The real "market price" of Boeing and Airbus LCA has been described as the best-kept secret of the industry.[2726]

[2719] The European Union explains that its challenge is confined to LCA sales campaigns that Boeing won "which were characterised by particularly intense and close competition, and in which price, technology and delivery dates played a substantial role in the purchase decision". (European Union's response to Panel question No. 169, para. 174).

[2720] Engines are the single most expensive component of an LCA, representing between 20 and 30% of its total cost. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1690).

[2721] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1693 and fn 3566.

[2722] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1693.

[2723] In a 2013 article, an aircraft industry analyst stated that a customer has never purchased an aircraft at the list prices communicated by aircraft manufacturers. ("Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709)). Moreover, the actual prices paid by customers on delivery will be affected by an "escalation" of the negotiated price to adjust for changes in aerospace industry costs of materials and labor between the date of order and date of delivery (which may be several years subsequent to the date of order). ("Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709)).

[2724] Top tier Boeing customers, such as American Airlines, Delta Airlines, and Southwest Airlines, reportedly obtain the benefits of Boeing's "most-favoured customer" clause, in which Boeing guarantees that no other customer will obtain a lower price. "Launch" customers also are considered to generally obtain the lowest prices because the first aircraft produced in an LCA programme are frequently overweight. ("Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709)).

[2725] See Appendix 2.

[2726] "Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709).

9.52. The European Union argues that LCA sales are strongly determined by the dynamic nature of competition, in which each manufacturer faces inter-temporal strategic constraints and trade-offs, implying that current business decisions (e.g. on price and production) affect future demand and supply conditions.[2727] Boeing and Airbus do not compete for specific orders with the sole objective of maximizing their *short-run* profits, in the sense of the profits pertaining to those specific orders. Rather, they compete and set their prices with a view to maximizing their *overall profits across their long-term sales activity*.[2728] The European Union asserts that pricing incentives of LCA manufacturers like Boeing are therefore "co-determined by the necessity of having to recoup massive fixed cost investments and by the prevailing conditions of competition" as well as by the need to keep production lines running, cover recurring costs and maintain a steady stream of cash flows[2729]:

> As a result of these strictures, Boeing will decide to price extremely aggressively in some sales campaigns (potentially below pure marginal costs, especially early-on in the learning curve), while Boeing's pricing decisions in other campaigns allow it to recoup some of its fixed investment costs (i.e., pricing substantially above marginal costs). In any of these cases, Boeing must look at its costs holistically, and cannot afford to be uniquely guided by marginal cost considerations.[2730]

9.53. In the original proceeding, the Appellate Body provided the following description of the economics of LCA pricing, based on findings made by the panel and matters of common ground between the parties:

> The LCA market is a duopoly. Airbus and Boeing each holds a significant share of the market and possesses a degree of market power. Each manufacturer's decision regarding the supply and pricing of its products has the ability to influence the pricing of the other and, more generally, the market price.[2731]
>
> …
>
> LCA production involves substantial upfront development costs over a period of several years, with a return over a considerably longer period – 18 years, on average. LCA production is generally characterized by steep learning curves. The production costs of initial units of a new LCA model are much higher than the production costs of subsequent units once the manufacturer has begun to realize learning curve efficiencies. Because such efficiencies are factored into an LCA manufacturer's projected costs at the time of the launch of the new aircraft programme, manufacturers price initial units of LCA as though they were already at the bottom of the learning curve. At the time of launch, the manufacturer sets pricing targets for the new aircraft that, over its projected life, must exceed the manufacturer's fully loaded average production costs by an amount sufficient to justify the investment.[2732]

9.54. An empirical study of the commercial aircraft industry submitted by the European Union in this proceeding indicates that production costs change drastically over time due to learning curve efficiencies, while prices are quite "flat" for all products, suggesting that mark-ups move to offset the movements in costs.[2733]

[2727] European Union's comments on the United States' response to Panel question No. 158, paras. 100-105. The European Union refers to economic literature indicating that prices in dynamic games are typically set in a way that departs from short-run profit maximization because firms must account for the impact of their current actions or omissions upon their future activity and profits. (European Union's comments on the United States' response to Panel question No. 158, para. 106 fn 187; and C.L. Benkard, "A Dynamic Analysis of the Market for Wide-Bodied Commercial Aircraft", *Review of Economic Studies*, Vol. 71 (2004), (Exhibit EU-1697), pp. 581-611).

[2728] European Union's comments on the United States' response to Panel question No. 158, para. 109.

[2729] European Union's comments on the United States' response to Panel question No. 158, para. 121.

[2730] European Union's comments on the United States' response to Panel question No. 158, para. 122. (fn omitted)

[2731] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 903. (fns omitted)

[2732] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 905. (fns omitted)

[2733] C.L. Benkard, "A Dynamic Analysis of the Market for Wide-Bodied Commercial Aircraft", *Review of Economic Studies*, Vol. 71 (2004), (Exhibit EU-1697), p. 585.

9.55. There is also evidence in this proceeding regarding the Boeing 787 programme which illustrates how the profitability of an LCA programme depends on the LCA manufacturer being able to move down the learning curve and deliver subsequent units of LCA at a profit level that enables it to recoup deferred production costs and ensure that, over the long-term, the programme is sufficiently profitable to have justified the investment. In October 2015, Boeing was reported to have accumulated some USD 32 billion in deferred production costs related to the 787 programme, which it expected to recoup over the following six years by delivering another 900 aircraft at an average profit of more than USD 35 million per plane.[2734] Its deliveries in the second quarter of 2015 were estimated to represent a *loss* of approximately USD 25 million per aircraft.[2735] The accumulated deferred costs for the 787 programme are projected to peak at USD 33 billion in late 2016, after which they are expected to decline, driving the per-unit costs of the aircraft down.[2736] The accumulated deferred losses do *not* include Boeing's original investment to develop the 787, which has been estimated by analysts at an *additional* USD 20 billion or more.[2737] According to industry analysts, Boeing has been able to continue producing the 787 because of its "cash cow" programmes, i.e. the 737 and 777 programmes which, as mature programmes, have "produced cash like mad".[2738] Indeed, it seems that certain aircraft programmes are "significant sources of cash" for both Airbus and Boeing.[2739]

9.56. Finally, there is HSBI evidence before the Panel which suggests that LCA manufacturers forecast costs and revenues for LCA programmes based on periodically revised cost, sales and delivery expectations, in order to ensure that prices in individual sales and the programmes as a whole remain profitable.[2740]

9.2.3 Standard of causation and aggregation of subsidies

9.57. We recall that, owing to the way that the European Union has chosen to demonstrate that the United States has failed to comply with the DSB recommendations and rulings, in the sense of failing to take appropriate steps to remove the adverse effects, the Panel is effectively evaluating a new serious prejudice case under Articles 5 and 6.3 of the SCM Agreement. In other words, the Panel is evaluating whether the European Union has demonstrated that, after the end of the implementation period, the subsidies that the United States has failed to withdraw, within the meaning of Article 7.8, are causing serious prejudice, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement.[2741]

9.58. With this in mind, we set forth our understanding of the requisite causal link between the subsidies and the serious prejudice phenomena in Article 6.3, pursuant to Articles 5(c) and 6.3 of the SCM Agreement.

[2734] One analyst has calculated that Boeing would in fact need to sell the 787s it delivers after 2020 at a profit of USD 50 million (representing a margin of more than 30%) in order for the overall programme to return a "low single digit" profit. (D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 6).

[2735] D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705). Indeed, this article refers to the views of several industry analysts that Boeing's accumulated deferred losses on the 787 programme are now so large that it will not be possible to avoid declaring a reach-forward loss, estimated by one analyst to be in the range of USD 5 billion.

[2736] Boeing expects the model mix of 787s to shift to higher-priced 787-9s and 787-10s, which cost only 5 to 10% more than the original 787-8 but will represent 20 to 40% more revenue. (D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 8).

[2737] D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 6.

[2738] D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 11. According to one industry analyst: "It's an extraordinarily strong Boeing Co. that has coped with the disaster that is the 787 without running out of cash."

[2739] "UPDATE 2 – Airbus debates new A320 output hike, suffers test glitch", *Reuters*, 28 May 2015 (Exhibit EU-1686), reporting that medium-haul planes are "significant sources of cash for both Airbus and Boeing" and describing the A330 programme as "another cash cow" for Airbus.

[2740] See European Union's response to Panel question No. 169, fn 729.

[2741] See Section 6 above. See however, the European Union's "parallel" argument with respect to its serious prejudice allegations concerning wide-body, twin-aisle LCA, discussed in Section 9.3.3, which seems to be based on a different theory of what it means to remove the adverse effects for purposes of Article 7.8 of the SCM Agreement; namely, that the adverse effects of the pre-2007 aeronautics R&D subsidies found to exist in the original 2004-2006 reference period (in the form of certain kinds of serious prejudice) continue into the post-implementation period.

9.59. The Appellate Body has consistently articulated the causal link required as "a genuine and substantial relationship of cause and effect".[2742] The subsidies must contribute, in a "genuine" *and* "substantial" way, to producing or bringing about one or more of the effects, or market phenomena, identified in Article 6.3. The *genuine* nature of the causal link requires a complaining party to show that the nexus between cause and effect is "real" or "true". The *substantial* component of the causal relationship concerns the relative importance of the causal agent (i.e. the subsidies at issue) in bringing about the adverse effects in question.[2743]

9.60. One example of a situation in which the nexus between cause and effect was not sufficiently *real* or *true* to justify a finding that the subsidy in question was a *genuine cause* of the Article 6.3 market phenomena is provided by the Appellate Body in *EC and certain member States – Large Civil Aircraft*. In that case, the Appellate Body found that the panel's generalized finding that the R&TD subsidies enabled Airbus to develop features and aspects of its aircraft faster than would otherwise have been possible was insufficient to justify "cumulating" the effects of the R&TD subsidies with the "product effects" of the launch aid/member State financing subsidies in enabling Airbus to launch particular models. Rather, in order to establish the requisite *genuine* causal link, the panel should have made specific findings that technology or production processes funded by the R&TD subsidies contributed to Airbus' ability to launch and bring to market *particular models of LCA*.[2744] Another example is the four subsidies granted to Boeing in connection with the relocation of its corporate headquarters to the State of Illinois, which the European Communities in the original proceeding had argued may reasonably be deemed to benefit all of the company or the business unit's products. The Appellate Body found that there was no genuine causal link between these subsidies and the relevant market effects in the 100-200 seat LCA product market because these subsidies were not shown to have "meaningfully contributed" to Boeing's lowering of prices for the 737NG.[2745]

9.61. The Appellate Body has acknowledged that panels examining whether the causal relationship between the subsidies at issue and the market phenomena identified in Article 6.3 meets the *genuine and substantial* standard may often be confronted with multiple factors that may have contributed, to varying degrees, to the relevant market phenomena. Panels must seek to understand the interactions between the subsidies at issue and the various other factors, and make an assessment of their connections to bringing about the relevant effects.[2746] A subsidy need not be the sole cause, or only substantial cause, of an effect in order for it to be found to be a genuine and substantial cause. Indeed, a subsidy may be found to be a genuine and substantial cause notwithstanding the existence of other factors that contribute to producing the relevant market phenomena if the contribution of the subsidy, in light of a proper consideration of all other contributing factors and their effects, rises to that of genuine and substantial.[2747] This assessment of whether subsidies are a genuine and substantial cause of any of the market phenomena identified in Article 6.3 is a fact-intensive exercise and potentially there will be considerable differences in the ways complaining parties choose to demonstrate the links between the subsidies at issue and the effects, and in the nature of supporting evidence, in different cases.[2748]

9.62. Related to the question of the causation standard applied by the Panel is the issue of how the various different subsidies should be grouped together for purposes of assessing their effects. In the original proceeding, the Appellate Body addressed the permissible approaches that panels may take to collectively assessing the effects of multiple subsidies. It said that the first involves an *ex ante* decision to undertake a single analysis of the effects of multiple subsidies where the structure, design, and operation of those subsidies are similar, and thereby to assess in an integrated causation analysis the collective effects of such subsidy measures (so-called "aggregation" of subsidies).[2749] The second involves an examination, taken *after* a panel has found that at least one subsidy (or aggregated grouping of subsidies) has caused adverse effects, as to whether the *effects* of other subsidies (or aggregated grouping of subsidies) complement and

[2742] Appellate Body Reports, *US – Upland Cotton*, para. 438; *US – Upland Cotton (Article 21.5 – Brazil)*, para. 374; *EC and certain member States – Large Civil Aircraft*, para. 1232; and *US – Large Civil Aircraft (2nd complaint)*, para. 913.
[2743] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 913.
[2744] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1404 and 1407.
[2745] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1342.
[2746] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 914.
[2747] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 914.
[2748] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 915.
[2749] This approach was employed by the panel in *US – Upland Cotton*.

supplement those effects (so-called "cumulation" of subsidies).[2750] The Appellate Body said that, in selecting an appropriate approach to collectively assessing the effects of multiple subsidies, panels are confined in two ways: First, by the need not to "unduly segment" by considering the effects of each subsidy on an individual basis only (such that no subsidy is a "substantial" cause of the relevant adverse effects)[2751]; and second, by the need not to combine multiple measures in such a way as to absolve a complainant of its burden of proving that each challenged measure is a "genuine" cause of, or "genuinely contributes to producing", the market phenomena identified in Article 6.3.[2752]

9.63. In the original proceeding, the panel conducted an aggregated analysis of the *aeronautics R&D subsidies* in evaluating their effects on Boeing's development of technologies for the 787. The European Union argues that the group of pre-2007 aeronautics R&D subsidies operates through a technology causal mechanism to affect Boeing's development of technologies for the 787 and its other new technology LCA (i.e. the 777X and 737 MAX). The United States does not object to the aggregation of the pre-2007 aeronautics R&D subsidies. We consider it is appropriate to evaluate the effects of the pre-2007 aeronautics R&D subsidies on Boeing's product development behaviour as an aggregated group.[2753]

9.64. The European Union considers that at their most basic level, and in light of the conditions of competition in the LCA markets, all of the *post-2006 subsidies*, except certain post-2006 aeronautics R&D subsidies, enable Boeing to lower the prices of its LCA in competitive sales campaigns and can therefore be treated as one group for purposes of assessing their impact on Boeing's LCA prices.[2754] However, the European Union also acknowledges minor differences in the way that various sub-groupings of the post-2006 subsidies operate. To account for those differences, and "to follow the taxonomy" of the original proceeding, the European Union structures its discussion of the effects of the post-2006 subsidies on Boeing's LCA prices by dividing the post-2006 subsidies into three aggregated groups:

a. A tied tax category of aggregated subsidies, comprising the Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction.[2755] The European Union argues that these tied tax subsidies are triggered by sales of each LCA to which they relate and directly enable Boeing to lower its prices while maintaining the profitability of the sale.[2756]

[2750] The "cumulation" approach was employed by the panel in *EC and certain member States – Large Civil Aircraft*. The Appellate Body explained that whether both, either or neither of aggregation and cumulation are appropriate in a particular case will be a function of the particular subsidy measures at issue and their effects on prices and sales in the relevant market, the manner in which a complainant presents its claims and the way in which the panel decides to structure its causation analysis. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1290). See also paras. 9.89, 9.93, 9.467, and 9.468 below.

[2751] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1284.

[2752] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1290.

[2753] As explained in Sections 9.3.2.1.4 and 9.4.2.2 below, the European Union argues that a relatively small number of individual post-2006 aeronautics R&D subsidies operate through a technology causal mechanism to contribute to Boeing's development of innovative technologies for its current LCA. In paras. 9.85 and 9.86 below, we explain that we will aggregate these particular post-2006 aeronautics R&D subsidies with the pre-2007 aeronautics R&D subsidies.

[2754] European Union's first written submission, paras. 955 and 1113, and fn 1929; second written submission, para. 941; and response to Panel question No. 43, paras. 279 and 280. At fn 352 to its response to Panel question No. 43, the European Union makes two sequential conditional alternative arguments that, should the Panel disagree that certain post-2006 aeronautics R&D subsidies operate, at present, through a technology causal mechanism, alternatively, they operate through a price causal mechanism under so-called "Category 2", and should the Panel disagree with that argument, alternatively, they operate "on a different basis", through a "price effects" causal pathway, as described for so-called "Category 3" subsidies.

[2755] The European Union also includes the FSC/ETI subsidies and the South Carolina Income Allocation and Apportionment Agreement within this category of tied tax subsidies, however, as we explain in Sections 8.2.5 and 8.2.8.9, respectively, we find that the FSC/ETI subsidies have been withdrawn and that the European Union has failed to establish that the Income Allocation and Apportionment Agreement involves a subsidy.

[2756] See European Union's first written submission, paras. 1132-1154; and second written submission, para. 941. The European Union identifies the Boeing LCA to which each particular "tied tax" subsidy is "linked" at para. 1135 of its first written submission. It discusses the structure, operation and design of subsidies in this category, their magnitude, and the role of competitive conditions, all as part of demonstrating that the tied tax

b. State and local cash flow subsidies, comprising all of the non-aeronautics R&D subsidies that are not tied tax subsidies, aggregated into a single category. These subsidies are alleged to provide Boeing with additional operating cash flow because they are linked to (and lower) Boeing's costs of researching, developing or producing Boeing LCA.[2757]

c. Aeronautics R&D subsidies (NASA, DOD, and FAA) which, in contrast to the pre-2007 aeronautics R&D subsidies, operate through a price causal mechanism, in that they are alleged to lower Boeing's costs of licensing intellectual property rights to LCA technology, and of developing that technology, thereby providing Boeing with additional cash which Boeing can and does use to lower its LCA prices.[2758]

9.65. The United States objects that the European Union discusses the alleged price effects of the post-2006 subsidies on the basis of their aggregation into three distinct groups, without conducting the aggregation analysis on a model-specific basis. According to the United States, this is important because not all of the subsidies in an aggregated group are even alleged to impact the pricing of the 787, 737 MAX, and 737NG.[2759] The United States therefore disagrees with the European Union's aggregations of the tied tax and state and local cash flow subsidies on the basis that these subsidies are not all alleged to impact the same aircraft and the European Union has failed to describe the design, structure or operation of any of them in such a way as would warrant their aggregation.[2760]

9.66. In the next three subsections, we determine whether it is appropriate to aggregate the post-2006 subsidies into three categories for purposes of conducting an integrated analysis of the effects of those subsidies within each aggregated group. Then in Section 9.2.3.4 we additionally consider whether it is appropriate to further aggregate any of these groups with each other or with the pre-2007 aeronautics R&D subsidies, which are alleged to operate through a technology causal mechanism, rather than a price causal mechanism. We summarize our conclusions in Section 9.2.3.5.

9.2.3.1 Aggregation of the tied tax subsidies

9.67. In the State of Washington, B&O tax is levied on the gross proceeds of sale, gross incomes of a business, or the value of products. The City of Everett B&O tax is a tax on gross revenues which, with respect to manufacturing, are generally treated as the value of products manufactured.[2761] The Washington State and City of Everett B&O tax rate reductions reduce the B&O tax rates applicable to revenues earned from the sale of LCA attributable to Washington State or the City of Everett, as the case may be, lowering Boeing's taxes and thereby increasing Boeing's after-tax profits.[2762]

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subsidies impact Boeing's LCA pricing and thereby constitute a *genuine and substantial* cause of present adverse effects.

[2757] See European Union's first written submission, paras. 1155-1179; and second written submission, para. 941. The European Union identifies the Boeing LCA to which the subsidies in this category are "linked" at paras. 1159-1161 of its first written submission. It discusses the structure, operation and design of this category of subsidies, their magnitude, and the role of competitive conditions, all as part of demonstrating that the state and local cash flow subsidies impact Boeing's LCA pricing and thereby "cause or contribute to causing, along with the other subsidies" present adverse effects.

[2758] European Union's first written submission, paras. 1120 and 1180-1190. The European Union alleges at para. 1184 of its first written submission that the *genuine* causal link relates to the fact that the subsidies are in the form of support for R&D relating to aeronautics R&D applied or to be applied on Boeing LCA (i.e. the links to the technologies on the particular Boeing LCA). It discusses the structure, operation, and design of this category of subsidies, their magnitude, and the role of competitive conditions, all as part of demonstrating that this category of subsidies result in lower Boeing LCA pricing and "thereby cause, or contribute to causing, along with the other subsidies, present adverse effects". (European Union's first written submission, para. 1191).

[2759] United States' first written submission, para. 713.

[2760] We address the United States' objection concerning the aggregation of the tied tax subsidies into a single category for purposes of conducting an integrated analysis of their effects at para. 9.73 and concerning the aggregation of the state and local cash flow subsidies into a single category for purposes of conducting an integrated analysis of their effects at paras. 9.80-9.82 of our evaluation below.

[2761] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1806.

[2762] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1806. The Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction are the same in nature and operation, the pertinent difference being that the former reduces taxes levied at the state level in respect of state revenues

9.68. The European Union describes the Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction as "tied" to the production and sale of Boeing LCA. This was also the term used by the panel and the Appellate Body in the original proceeding to describe these subsidies.[2763] It is the per-unit production or sale of LCA that gives rise to the receipt of the subsidies. The receipt of the tied tax subsidies by Boeing therefore corresponds directly with per-unit sales of Boeing LCA. Fluctuations in Boeing's total sales volumes affect the total amounts of these subsidies but do not affect the calculus regarding the profitability of a particular sale. Such per-unit subsidies can be contrasted with the state and local cash flow subsidies and the post-2006 aeronautics R&D subsidies, which are "untied" in the sense that the amounts of those subsidies received by Boeing do not vary in direct proportion to the number of aircraft produced or sold.[2764]

9.69. It is important to note that the concept of "tied" used to describe the per-unit subsidies in this proceeding is different from the concept of "tied" used in the context of determining the products over which subsidies provided to a company should be allocated in order to calculate the level of countervailing duties that may be levied against those products. Articles 19.4 of the SCM Agreement and VI:3 of the GATT 1994 require Members to accurately determine the per-unit subsidy amount found to exist with respect to the product under investigation and to not impose countervailing duties exceeding that amount. This may involve the identification of amounts of a subsidy that a company has received in respect of the production or sale of a particular product in situations where a company manufactures and sells a variety of products not covered by the investigation and which are made in the same production line.[2765] Where a subsidy is considered to be tied to the production or sale of a particular product, an investigating authority may allocate the subsidy amounts received to those specific products, and thereby calculate the specific per-unit rate of subsidization for the product concerned. By contrast, where the subsidy is not tied to any particular product, it may be presumed that the company may allocate the subsidy across its entire production.[2766]

9.70. The Appellate Body in *US – Washing Machines* recently discussed considerations relevant to a determination of whether a subsidy is "tied" to a product in this different context of allocating subsidies across the products of a company when calculating a per-unit rate of subsidization in accordance with Articles 19.4 of the SCM Agreement and Article VI:3 of the GATT 1994.[2767]

9.71. In contrast, the tied tax subsidies at issue in this proceeding, as well as in the original proceeding, are "tied" in the sense that receipt of the subsidies is contingent on the production or sale of a particular product *on a per-unit basis* and this has relevance for the *potential economic*

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while the latter concerns municipal taxes in respect of municipal revenues. Boeing is subject to state B&O taxes on revenues realized from all LCA it manufactures in Washington (i.e. 787, 777X, 737 MAX, and 737NG as well as the 767, 777, and 747). Accordingly, the European Union alleges that the Washington State B&O tax rate reduction applies to the 787, 777X, 737 MAX, and 737NG. Boeing is also subject to municipal B&O taxes on revenues realized from all LCA manufactured at its facility in Everett, Washington (i.e. the 787 as well as the 767, 777, 777X, and 747). Accordingly, the European Union argues that the City of Everett B&O tax rate reduction applies to the 787 and 777X. (European Union's second written submission, para. 1065). The European Union requests the Panel to assess the effects of the tied tax subsidies on the prices for those Boeing aircraft to which they apply. (European Union's second written submission, para. 934).

[2763] The Appellate Body has described this concept of a tied subsidy as being where the receipt of the subsidy is contingent on the production or sale of a particular product on a per-unit basis. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1339).

[2764] Untied subsidies include so-called "development subsidies", such as R&D subsidies, which were discussed by Professor Luís Cabral in his report in the original proceeding. (See Panel Report, *US – Large Civil Aircraft (2nd complaint*), appendix VII.F.2, para. 1).

[2765] Alternatively, a subsidy may be granted on a company basis rather than a product basis, and it may similarly be difficult to identify which portions were used by the company for manufacturing the product concerned as opposed to other products.

[2766] The present proceeding does not require the Panel to allocate the subsidies in question over Boeing's products to arrive at a per-unit rate of subsidization and the imposition of countervailing duties consistently with Articles 19.4 of the SCM Agreement and Article VI:3 of the GATT 1994. Rather, the Panel is required to assess *how the receipt of the subsidies affected Boeing's commercial behaviour*, in order to determine whether the *effects* of the subsidies are any of the market phenomena identified in Article 6.3 of the SCM Agreement.

[2767] See Appellate Body Report, *US – Washing Machines*, paras. 5.270-5.274. Notably, it did not refer to the different sense in which it used the concept of "tied" in the Appellate Body Report in *US – Large Civil Aircraft (2nd complaint)*, i.e. as referring to situations where receipt of the subsidy was "contingent on the production or sale of a particular product *on a per-unit basis*". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1339). (emphasis added)

effect of the receipt of the subsidy on the actual pricing behaviour of the subsidy recipient. As the Appellate Body explained in the original proceeding:

> *All other things being equal*, a firm provided with a subsidy that is tied to production or sale enjoys the ability to lower its price while nevertheless achieving the same profit margin. In effect, the subsidy *enhances the firm's ability* to lower its prices in order to obtain a sale, notwithstanding that the outcome of any given sale, and the importance of price to that outcome, will still be dictated by the prevailing competitive conditions, including the market power and the pricing strategies of the participants, in a particular market.[2768]

9.72. In the original proceeding, both parties considered that, in light of the similarities in structure and operation between the Washington State and City of Everett B&O tax rate reductions, it was appropriate for the panel to aggregate them and thereby conduct an integrated analysis of their effects, along with the FSC/ETI subsidies, which were also tied to per-unit sales of LCA.[2769] The panel therefore aggregated these subsidies and conducted an integrated analysis of the effects.[2770]

9.73. We consider that the particular nature and operation of these per-unit subsidies is such that it is appropriate to conduct an integrated analysis of their effects. We would add that, because the City of Everett B&O tax rate reduction only impacts Boeing's revenues in respect of aircraft manufactured in the City of Everett, it does not impact Boeing's revenues in respect of the 737 MAX or 737NG, which are not manufactured in Everett. Our consideration of the effects of the tied tax subsidies on Boeing's pricing of the 737 MAX and 737NG will therefore be confined to the Washington State B&O tax rate reduction.

9.2.3.2 Aggregation of the state and local cash flow subsidies

9.74. The European Union argues that the Panel may aggregate all of the subsidies that it identifies within the category of state and local cash flow subsidies and conduct an integrated analysis of their effects. This is because all of these subsidies allegedly operate to reduce certain of Boeing's fixed costs; namely, costs of researching, developing, selling, and producing LCA.[2771] The United States objects that the European Union only states that each such subsidy, regardless of its form, increases Boeing's operating cash flow, and that the "majority" consist of "tax breaks" while some others involve the "provision of goods and services".[2772] According to the United States, the only real similarity between these "miscellaneous" subsidies is that they could not be placed into the other two categories.[2773] The United States argues that, under the European Union's theory, literally all subsidies that generally share a causal pathway and are not tied to a product would be aggregated. The *absence* of a similarity, in the sense of a "tie" to the sale of the same product, cannot suffice as the only common feature to aggregate a group of subsidies. Accordingly, the European Union has failed to show that any of the state and local cash flow subsidies should be aggregated with any other alleged subsidy.[2774]

9.75. The state and local cash flow subsidies which the European Union considers should be aggregated for purposes of conducting an integrated analysis of their effects, and which we find have not been withdrawn, within the meaning of Article 7.8, comprise the Washington State tax measures enacted under HB 2294 (other than the Washington State B&O tax rate reduction which is a tied tax subsidy as explained in Section 9.2.3.1 above), and the South Carolina subsidies.

9.76. The relevant Washington State tax subsidies involve two B&O tax credits and one sales and use tax exemption. The B&O tax credits are: (a) for certain preproduction development expenditures on aeronautics-related research, design, and engineering activities, as well as for certain expenditures on design and preproduction development, computer software and hardware

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[2768] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1260. (emphasis added)
[2769] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1805. See also Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1296.
[2770] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, fn 2618.
[2771] European Union's second written submission, para. 935.
[2772] United States' first written submission, para. 753.
[2773] United States' first written submission, paras. 754-758.
[2774] United States' first written submission, para. 759.

for the digital design, and development of commercial airplanes[2775]; and (b) for property taxes and leasehold excise taxes related to new construction.[2776] These tax credits are applied against Boeing's total B&O tax liability, which accrues in connection with the manufacture and sale of all Boeing LCA produced in the State of Washington.[2777] The third Washington State tax subsidy is the sales and use tax exemptions for computer software, hardware, and peripherals when these items are purchased for or used in the development of commercial airplanes or their components.[2778]

9.77. The South Carolina subsidies involve: (a) a property tax exemption in respect of Boeing's LCFs; (b) sales and use tax exemptions in respect of aircraft fuel, computer equipment, and construction materials; and (c) the provision of USD 50 million by the South Carolina authorities through the issuance of air hub bonds to partially offset the costs of constructing certain facilities and infrastructure. These subsidies were among a number of incentives provided by the State of South Carolina to induce Boeing to locate its new 787 production facilities in South Carolina. The European Union argues that these subsidies are "linked" to production of the 787 at facilities in South Carolina.[2779]

9.78. In general terms, the state and local cash flow subsidies involve incentives provided by state and municipal authorities related to Boeing's LCA production activities in various jurisdictions. Unlike the tied tax subsidies, Boeing's receipt of the state and local cash flow subsidies described above is not contingent upon per-unit production or sale of LCA. The European Union asserts that the state and local cash flow subsidies operate to reduce Boeing's overall costs. However, there is no evidence that the savings represented by these subsidies were factored into the programme accounting for any of the Boeing LCA programmes to actually offset or reduce any LCA programme costs. Nor is there evidence that Boeing otherwise applies the additional cash represented by these subsidies to its specific LCA programmes.

9.79. The European Union provided a table setting forth its assertions regarding the "applicability" of each post-2006 subsidy to particular LCA families. We have adapted that table to cover only the measures that we have found to be specific subsidies granted or maintained in the post-2006 period. This table is as follows:

[2775] The European Union argues that the Washington State B&O tax credits for pre-production development are "linked most closely" to Boeing aircraft that are currently in pre-production, which would mean the 737 MAX, 787-10, and 777X. (European Union's first written submission, para. 1160; second written submission, para. 1066).

[2776] The European Union argues that the B&O tax credits for property taxes and leasehold excise taxes relate to sites for which Boeing has made the largest investments in land and facilities (and in the case of the leasehold excise tax credit, the Dreamlifter Operations Center), and thus are "most closely linked" to sites producing the 737NG, 737 MAX, and 787. (European Union's first written submission, para. 1160, second written submission, para. 1066).

[2777] The B&O tax is Washington's major business tax. It is a tax on gross receipts of all businesses operating in Washington, as a measure of the privilege of engaging in business. "Gross receipts" refers to the gross proceeds of sales, the gross income of a business, or the value of products, depending on which is applicable. Taxpayers are taxed based on the activities in which they engage in the State of Washington, such as manufacturing, wholesaling, retailing or the provision of services. (See Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.47).

[2778] The European Union argues that the sales and use tax exemptions for computer software, hardware, and peripherals relate to the facilities where Boeing has made the largest investments in computer equipment, meaning that they are "most closely linked" to the 737NG, 737 MAX, and 787. (European Union's first written submission, para. 1160; second written submission, para. 1066).

[2779] European Union's first written submission, para. 1161; second written submission, para. 1066.

Table 8: Alleged "applicability" of various post-2006 subsidies to Boeing aircraft families[2780]

Aggregated Subsidy group	Subsidy	787	777X	737 MAX	737 NG
Tax subsidies tied to sales	Washington State B&O Tax Rate Reduction	X	X	X	X
	City of Everett B&O Tax Rate Reduction	X	X		
State and Local Cash Flow Subsidies	Washington State B&O Tax Credits for Preproduction/Aerospace Product Development	X		X	
	Washington State B&O Tax Credit for Property Taxes and Leasehold Excise Taxes	X	X	X	X
	Washington State Sales and Use Tax Exemptions	X	X	X	X
	South Carolina Project Gemini Facilities & Infrastructure	X			
	South Carolina Project Gemini – Sales and Use Tax Exemptions	X			
	South Carolina Project Gemini – Large Cargo Freighter Property Tax Exemption	X			
Post-2006 R&D Subsidies	NASA aeronautics R&D subsidies	X	X	X	X
	FAA aeronautics R&D subsidy	X	X	X	X
	DOD aeronautics R&D subsidies	X	X	X	X

9.80. We have some difficulty reconciling the European Union's argument that these subsidies represent the functional equivalent of additional cash, on the one hand, with its argument that these subsidies should be "linked" to certain LCA because they allegedly reduce the costs of researching, developing, selling, and producing those LCA, on the other. If the subsidies operate to free up additional cash for Boeing, albeit in some way connected to LCA production, they should in our view be treated as the equivalent of additional cash. This is the way that the European Communities in the original proceeding argued that a similar grouping of untied subsidies (including the Washington State tax measures other than the Washington State B&O tax rate reduction) should be analysed.[2781]

9.81. Moreover, the European Union does not explain how amounts of the state and local cash flow subsidies that are alleged to be "linked" to more than one Boeing family LCA (e.g. the Washington state and local cash flow subsidies and the post-2006 aeronautics R&D subsidies) should be apportioned across the various LCA families. In any case, a division of amounts of the same untied subsidy across various Boeing LCA families would be at odds with the contention that the subsidies represent the functional equivalent of additional untied cash.

9.82. We do not consider that it is appropriate to allocate, from within the category of subsidies that the European Union identifies as state and local cash flow subsidies, certain amounts of particular subsidies to certain Boeing LCA programmes based on their asserted "links" to those programmes. These subsidies are not tied to production of Boeing LCA on a per-unit basis, and at most, operate in an indirect way to affect Boeing's overall costs. In our view, they represent the

[2780] Total Financial Contribution (2007-2014) and Allocation to Boeing Aircraft Programmes, (Exhibit EU-1450). See also European Union's second written submission, para. 1072; first written submission, paras. 1135 and 1159-1161.

[2781] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1609. Indeed, the European Union's argument that each of the state and local cash flow subsidies is "linked" to production of one or more specific families of Boeing LCA suggests that these subsidies should be divided into four aggregated categories, representing the respective "links" between the subsidy in question and the production of the 787, 777X, 737NG, and 737 MAX programmes. To recall, the United States objects to the European Union's proposed aggregation of the state and local cash flow subsidies into a single category, *inter alia*, on the basis that not all of these subsidies are alleged to impact the same aircraft. (United States' first written submission, para. 713).

functional equivalent of additional cash to Boeing. We therefore consider that it is appropriate to aggregate them into one category for purposes of conducting an integrated analysis of their effects.

9.2.3.3 Aggregation of the post-2006 aeronautics R&D subsidies

9.83. The European Union argues that the technologies being developed with the assistance of the vast majority of the post-2006 aeronautics R&D subsidies (in contrast to the technologies developed with the assistance of the pre-2007 aeronautics R&D subsidies), have not yet matured to the point at which they could be applied to Boeing aircraft that are currently being marketed.[2782] According to the European Union, these aeronautics R&D subsidies "at present" operate through a price causal mechanism.[2783] The European Union argues that the present effect of the post-2006 aeronautics R&D subsidies is to give Boeing access to and use of research results that enable it to continue maturing the technologies, without having to pay license fees for such access and use, thereby lowering Boeing's LCA costs in relation to currently marketed LCA.

9.84. The European Union had originally argued, in its first written submission, that the Panel should conduct an aggregated analysis of "the aeronautics R&D subsidies", which it alleged to cause adverse effects "through both technology and price causal mechanisms".[2784] The United States objected to the aggregation of the FAA aeronautics R&D subsidy with the NASA and DOD aeronautics R&D subsidies. It also objected to the aggregation of the aeronautics R&D subsidies for purposes of analysing their effects through a price causal mechanism because the original panel had concluded that the aeronautics R&D subsidies did not operate through a price causal mechanism.[2785] As the European Union's arguments regarding the alleged effects of the aeronautics R&D subsidies have developed throughout the course of the proceeding, however, it has emerged that the European Union is alleging only that (except as described below) the *post-2006* aeronautics R&D subsidies should be analysed as operating through a price causal mechanism, and accordingly that only the post-2006 aeronautics R&D subsidies should be aggregated for this purpose.[2786] With this clarification of the European Union's argument concerning the subset of aeronautics R&D subsidies that should properly be aggregated for purposes of assessing their effects through a price causal mechanism, it would seem that the latter objection of the United States is moot.[2787]

9.85. The European Union's position regarding the FAA aeronautics R&D subsidy requires additional explanation. The European Union argues that the flight test funding under the FAA aeronautics R&D subsidy operates through a technology causal mechanism, while the non-flight test funding under that subsidy operates through a price causal mechanism.[2788] However, it has also requested the Panel to analyse the flight test funding aspect of the FAA aeronautics R&D subsidy as operating through a price causal mechanism if the Panel decides to reject its technology effects arguments regarding this aspect of the FAA aeronautics R&D subsidy.[2789] We consider that it is appropriate to aggregate the non-flight test funding under the FAA aeronautics R&D subsidy with the post-2006 NASA and DOD aeronautics R&D subsidies, owing to the fact that this aspect of

[2782] According to the European Union, the inability to "link" the majority of the post-2006 aeronautics R&D subsidies to Boeing LCA arises from the nature of these subsidies as funding early-stage R&D intended to create technologies that will not appear on aircraft for years or even decades. (European Union's response to Panel question No. 158, para. 72). The post-2006 aeronautics R&D subsidies are therefore "similar in nature" to the pre-2007 aeronautics R&D subsidies. (European Union's response to Panel question No. 43, para. 280).

[2783] European Union's response to Panel question No. 43, para. 280.

[2784] European Union's first written submission, para. 956.

[2785] United States' first written submission, para. 752.

[2786] European Union's second written submission, para. 933; opening statement at the meeting with the Panel, para. 83; and response to Panel question No. 43, para. 280.

[2787] In other words, we do not understand the United States to object to the aggregation of the post-2006 aeronautics R&D subsidies for purposes of examining their effects through a price causal mechanism, provided the European Union does not include in that aggregated group any aeronautics R&D subsidies that are alleged to operate through a technology causal mechanism.

[2788] See Allocation of Post-2006 R&D Subsidies through Technology and Price Causal Mechanisms, (Exhibit EU-1265). See also fn 2753 above.

[2789] European Union's response to Panel question No. 43, fn 352.

the FAA aeronautics R&D subsidy is alleged to operate through a price causal mechanism in the same way as the majority of post-2006 NASA and DOD aeronautics R&D subsidies.[2790]

9.86. Accordingly, in conducting our assessment of the effects of the post-2006 aeronautics R&D subsidies through a price causal mechanism, we will aggregate the post-2006 NASA and DOD aeronautics R&D subsidies with the non-flight test funding portion of the FAA aeronautics R&D subsidy.

9.2.3.4 Whether any of the aggregated groupings of subsidies should be further aggregated with each other

9.87. In the analysis of the nature and operation of the various subsidies at issue above, we have concluded that it is appropriate for us to aggregate them into the following four general categories, and for the subsidies so aggregated, conduct an integrated analysis of their effects within each category:

a. Pre-2007 aeronautics R&D subsidies, which are alleged to operate through a technology causal mechanism.

b. Tied tax subsidies; i.e. the Washington State and City of Everett B&O tax rate reductions, both of which correspond directly with sales of Boeing LCA, such that fluctuations in Boeing's total sales volumes do not affect the calculus regarding the profitability of a particular sale.[2791]

c. State and local cash flow subsidies; i.e. the remaining Washington State subsidies and the South Carolina subsidies, owing to their nature as subsidies that Boeing receives in connection with its LCA production activities generally, which operate to provide Boeing with the equivalent of additional cash flow.

d. Aeronautics R&D subsidies alleged to operate through a price causal mechanism; i.e. the post-2006 NASA and DOD aeronautics R&D subsidies and the non-flight test funding portion of the FAA aeronautics R&D subsidy.

9.88. Based on the foregoing analysis and conclusions, we do not consider it appropriate to further aggregate any of categories of subsidies with each other in analysing their effects. In order to provide additional clarity, we explain this aspect of our analysis further.[2792]

9.89. The tied tax subsidies and the state and local cash flow subsidies, although both ultimately operating through a price causal mechanism, are sufficiently different in their nature that it is not appropriate to aggregate these subsidies and assess their effects in an integrated manner.[2793] This does not mean that the *effects* of these two distinct categories of aggregated subsidies cannot subsequently be *cumulated*, provided one category is found to be a *genuine and substantial* cause of adverse effects in the post-implementation period, and the other is a *genuine* cause, the effects of which "complement and supplement" those of the first category. We address this later in our analysis.[2794]

9.90. As to whether the Panel should aggregate the state and local cash flow subsidies with the post-2006 aeronautics R&D subsidies and conduct an integrated analysis of their effects, our reasons for declining to do so are as follows: The state and local cash flow subsidies are state location investment incentives that are provided in return for Boeing's location of its manufacturing facilities in a particular place (and consequent investment in the local economy and creation of local employment opportunities). In very general terms, they are designed to offer Boeing a lower-cost manufacturing proposition for aircraft currently or soon to be in production than Boeing

[2790] In Section 9.3.2.1.4, we evaluate the effects of the flight test funding portion of the FAA aeronautics R&D subsidy, operating through a technology causal mechanism, on Boeing's development of technologies for its various new generation LCA.

[2791] We recall that the City of Everett B&O tax rate reduction does not apply to the 737NG and 737 MAX programmes, because only the 787 (and 777X) is produced in the City of Everett.

[2792] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1299.

[2793] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1326.

[2794] See paras. 9.468 and 9.469 below.

could presumably find by locating its production facilities elsewhere. The aeronautics R&D subsidies are federal government measures that are designed to incentivize the U.S. aeronautics industry to conduct R&D that industry would not otherwise consider it cost-efficient to undertake at that time, with a view to enhancing the speed at which industry is able to develop new technologies for application to future generations of LCA over an extended time horizon.

9.91. The European Union argues that the aeronautics R&D subsidies also enable Boeing to lower the prices of the LCA that Boeing *currently produces and markets*, because Boeing can continue to mature the technologies it is researching without having to pay licence fees for the access to and use of the intellectual property generated by the subsidized R&D. Regardless of whether we consider that argument plausible or substantiated, we note that the post-2006 aeronautics R&D subsidies are connected in an even more indirect and speculative manner to production of any *existing LCA* than the state and local cash flow subsidies. We therefore regard the nature and operation of the post-2006 aeronautics R&D subsidies, even assuming *arguendo* that they are theoretically capable of being analysed in the way the European Union asserts; i.e. as providing Boeing with access to and use of research results that enable it to continue maturing technologies for the development of future LCA without having to pay licence fees for such access and use, as sufficiently distinct from the way in which the state and local cash flow subsidies are said to affect Boeing's LCA pricing. We therefore do not consider it appropriate to aggregate these two categories of subsidies with each other and conduct an integrated analysis of their effects.

9.92. We reach a similar conclusion regarding the aggregation of the tied tax subsidies with the post-2006 aeronautics R&D subsidies, owing to the different nature of these two groupings of subsidies, and the way they are alleged to operate to affect Boeing's LCA prices.

9.93. For the sake of completeness, we also consider that it is not appropriate to aggregate the pre-2007 aeronautics R&D subsidies with any of the other aggregated groupings of post-2006 subsidies. This is because the pre-2007 aeronautics R&D subsidies are alleged to operate through a technology causal mechanism, which is significantly different from the price causal mechanism alleged in relation to the post-2006 subsidies. However, the fact that we do not consider it appropriate to aggregate the pre-2007 aeronautics R&D subsidies with the post-2006 subsidies when analysing their effects does not mean that we will not consider, at a subsequent point in the analysis, whether the *effects* of the pre-2007 aeronautics R&D subsidies on Airbus' LCA sales and prices should be *cumulated* with those of any of the other subsidies at issue, provided we have established that one of those categories of subsidies is a *genuine and substantial* cause of those effects and the other is a *genuine* cause of those same effects.[2795]

9.94. In reaching these conclusions, we have endeavoured to ensure that our analysis of the effects of the multiple subsidies in this proceeding is not unduly segmented or "atomized", and that our decisions to aggregate certain subsidies in order to conduct an integrated analysis of their effects enable us to determine that there is a "genuine and substantial relationship of cause and effect" between the subsidies and the alleged market phenomena in Article 6.3.[2796]

9.2.3.5 Summary of conclusions regarding the aggregation of particular subsidies

9.95. Based on the nature and operation of the U.S. subsidies before us, it is appropriate to aggregate the subsidies into the following categories and to conduct an integrated analysis of the effects of the subsidies within each of these categories:

a. Pre-2007 aeronautics R&D subsidies, which are alleged to operate through a technology causal mechanism.

b. A tied tax subsidies category, comprising the Washington State B&O tax rate reduction and the City of Everett B&O tax rate reduction.

c. State and local cash flow subsidies, comprising all of the non-aeronautics R&D subsidies that are not tied tax subsidies, aggregated into a single category.

[2795] We consider this approach consistent with the guidance in Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1320.

[2796] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1284.

d. Post-2006 aeronautics R&D subsidies (NASA, DOD, and FAA) which, in contrast to the pre-2007 aeronautics R&D subsidies, are alleged to operate through a price causal mechanism.

9.2.4 The relevant time-period over which to assess whether the European Union has demonstrated that the United States has failed to take appropriate steps to remove the adverse effects

9.96. We recall that with respect to its claims under Articles 5 and 6.3 of the SCM Agreement in the original proceeding, the European Communities requested the panel to assess the existence of present adverse effects caused by the challenged subsidies over the period 2004-2006.[2797] Accordingly, the panel conducted its assessment of whether the effect of the subsidies at issue was serious prejudice within the 2004 to 2006 period. However, it explained that it would not limit the temporal scope of the evidence that it considered relevant in undertaking that assessment, and therefore, would take into account all of the relevant evidence submitted in the proceeding.[2798]

9.97. In this proceeding, the Panel must determine whether the United States has taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement. The European Union has chosen to discharge its burden of demonstrating the failure of the United States to take such appropriate steps by purporting to show that various subsidies that have not been withdrawn, within the meaning of Article 7.8, are causing adverse effects after the end of the implementation period. The European Union argues that the Panel should assess "whether the subsidies that the United States has failed to withdraw, and that it grants or maintains after the end of the implementation period on 24 September 2012, cause present adverse effects after the end of that implementation period."[2799] In response to a question from the Panel, the European Union further clarified that the "reference period" for purposes of assessing whether any non-withdrawn subsidies "presently" cause adverse effects is the period since the end of the implementation period, and not a period that begins immediately after the reference period from the original proceeding (i.e. 2004 to 2006) or any date prior to 24 September 2012.[2800]

9.98. The evidence submitted by the European Union in its first written submission concerning the alleged non-withdrawal of the subsidies the subject of the DSB recommendations and rulings, and the granting and maintaining of additional closely connected subsidies, covers the pre-2007 aeronautics R&D subsidies at issue in the original proceeding, as well as aeronautics R&D subsidies and other subsidies that have allegedly come into existence since the date of the panel request in the original proceeding; i.e. subsidies alleged to exist *since 2007*. The evidence submitted by the European Union in its first written submission to substantiate its allegations of serious prejudice concerns LCA sales campaigns between the relevant Boeing and Airbus aircraft that occurred *between 2007 and 2012*, as well as order, delivery and pricing data for the *period 2007 to 2012*.

9.99. The general absence in the European Union's first written submission of direct evidence as to the existence of subsidies or of the market phenomena identified in Article 6.3 for the period *after* 23 September 2012 is a consequence of the timing of the European Union's panel request and filing of its first written submission in relation to the expiration of the reasonable period of time for the United States to comply with the DSB recommendations and rulings in the original proceeding. We briefly recount the relevant events.

9.100. Under Article 7.9 of the SCM Agreement, the United States had until 23 September 2012 to comply with the DSB recommendations and rulings to "take appropriate steps to remove the adverse effects or withdraw the subsidies".[2801] On 23 September 2012, the United States notified the European Union that the United States had taken a number of actions allegedly withdrawing the subsidies or removing their adverse effects.[2802] The European Union requested consultations

[2797] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1677.
[2798] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1679.
[2799] European Union's first written submission, para. 832; response to Panel question No. 155, para. 52.
[2800] European Union's response to Panel question No. 155, para. 52 and fn 73.
[2801] Dispute Settlement Body, Minutes of the meeting held on 23 March 2012, WT/DSB/M/313 (circulated 29 May 2012), para. 79.
[2802] United States' Compliance Communication, para. 2.

with the United States on 25 September 2012.[2803] Consultations were held on 10 October 2012, with a view to reaching a mutually satisfactory solution. The next day, on 11 October 2012, the European Union requested the establishment of a panel in accordance with Articles 4.4 and 7.4 of the SCM Agreement and Article 21.5 of the DSU.[2804] As a result of the Panel's preliminary rulings regarding information gathering under Article 13 of the DSU on 26 November 2012, the Panel posed a number of questions to the United States in December 2012, based in large part upon questions that had previously been prepared by the European Union in the context of its request that the DSB initiate an Annex V procedure.[2805] Those questions generally sought information regarding the existence or continuation of various alleged subsidy programmes as well as information regarding Boeing's LCA orders, deliveries, and pricing. The United States provided its responses to the Panel's requests for information pursuant to Article 13 of the DSU in January, February, and March of 2013.[2806] The European Union filed its first and second written submissions in this proceeding on 28 March 2013 and 23 July 2013, respectively. The substantive meeting with the parties was held on 29 to 31 October 2013.

9.101. In sum, the short period of time that had elapsed since the end of the implementation period on 24 September 2012 and the European Union's initiation of the compliance proceeding through the request for the establishment of a panel (11 October 2012) and consequent filing of its first written submission (28 March 2013), necessarily meant that the information that the European Union was able to present as to the existence or continuation of the challenged subsidies, and the market phenomena in Article 6.3, for the period *after* 23 September 2012, was relatively limited. It has also given rise to an issue concerning the European Union's allegations that the U.S. subsidies benefiting the 777X cause adverse effects in the post-implementation period, because at the time of the expiration of the implementation period, as well as the time of the European Union's panel request, the 777X had not yet been offered for sale.

9.102. The 777X was formally launched on 17 November 2013, which is after the date of the European Union's panel request and subsequent to the meeting of the Panel with the parties.[2807] The European Union had referred to the imminent launch of the 777X in its first written submission and argued that the adverse effects of the U.S. subsidies would be enhanced once that aircraft was launched.[2808] It also argued that the U.S. subsidies benefiting the 777X presently caused a threat of significant lost sales and of threat of significant price suppression.[2809]

9.103. In September 2015, the Panel requested the European Union to update the information on which it relies to demonstrate its claim of adverse effects to include 2013 and 2014, and to the extent possible, the elapsed portion of 2015.[2810] In response, the European Union updated both its lost sales and displacement evidence to include the most recent data and developments since 2013, as well as certain (but not all) pricing information underpinning its significant price suppression arguments.[2811] In this context, it submitted evidence concerning a number of sales campaigns involving the 777X which the European Union alleges are evidence of significant lost sales of the A350XWB. The European Union argues that these sales demonstrate that the previous

[2803] European Union's request for consultations.
[2804] European Union's request for the establishment of a panel, para. 34.
[2805] The Panel's rulings regarding the applicability of the Annex V procedures to this compliance proceeding, and the request that the Panel seek information pursuant to its authority under Article 13 of the DSU by posing to the United States the questions that the European Union had prepared for submission under Annex V of the SCM Agreement, are set forth in the Preliminary Ruling and Decision regarding Information-Gathering under Article 13 of the DSU, dated 26 November 2012, in Annex E-1 to this Report.
[2806] United States' response to the Panel's request for information pursuant to Article 13 of the DSU, dated 25 January 2013, response to question Nos. 1-4, 11, 23, 24, and 30; response to the Panel's request for information pursuant to Article 13 of the DSU, dated 28 February 2013; and United States' communication in response to the Panel's request for information pursuant to Article 13 of the DSU, dated 22 March 2013 (Exhibit USA-176).
[2807] Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299), p. 2.
[2808] European Union's first written submission, para. 1198.
[2809] European Union's first written submission, paras. 1555, 1318-1328, and 1555-1566; second written submission, paras. 1445-1452 and 1508-1515. The European Union's claims of impedance and displacement (including threat thereof) do not appear to involve the 777X. (See European Union's response to Panel question No. 169, paras. 457-487).
[2810] Panel question No. 169, 15 September 2015.
[2811] European Union's response to Panel question Nos. 169 and 170.

threat of significant lost sales and the threat of significant price suppression have both now manifested.[2812]

9.104. The United States argues in its first written submission that, because the 777X was not launched at the time of the European Union's panel request, alleged effects of subsidies to the 777X could not contribute to a finding that there was non-compliance at the end of the compliance period, or that there were adverse effects as of the DSB's referral of the matter to the Panel.[2813] In other words, the European Union must show that the alleged adverse effects existed at the time the matter was referred to the Panel.[2814]

9.105. The European Union responds that evidence coming into existence after the date of the panel request which demonstrates the adverse effects caused by the U.S. subsidies benefiting the 777X is relevant to the Panel's assessment. It considers that the Panel is not precluded from finding that the U.S. subsidies benefiting the 777X cause present adverse effects merely because the effects occurred after the date of the panel request.[2815] More generally, the European Union argues that the relevant time-period for the Panel's determination of whether any non-withdrawn subsidies "presently" cause adverse effects is the period after 23 September 2012 (i.e. the post-implementation period). In making that determination, the Panel should not limit the temporal scope of the evidence that it considers relevant, and should take into account all relevant evidence submitted in this dispute. The European Union therefore purports to provide evidence of "present adverse effects", including relevant evidence from past time-periods, which it considers "consistent with a longer-term counterfactual".[2816] Moreover, it argues that evidence of adverse effects prior to 24 September 2012 is "relevant and probative" as regards the Panel's assessment of present adverse effects where the United States has failed to remove any of the subsidies at issue, has granted new subsidies that are similar to its earlier subsidies, and the conditions of competition in which these subsidies cause present adverse effects have remained largely unchanged during the entire post-2007 period.[2817]

9.106. We disagree with the United States to the extent that it maintains its objection to the Panel's consideration of adverse effects involving the 777X on the basis that the 777X only came into existence after the date of the European Union's panel request. The European Union's panel request identifies *measures* that existed at that time (including U.S. subsidies alleged to benefit the 777X) which are alleged to be specific subsidies that have not been withdrawn as of the expiration of the implementation period, and makes claims of adverse effects caused by those subsidies in relation to the 777X in the post-implementation period. In determining whether the United States has taken appropriate steps to remove the adverse effects, within the meaning of Article 7.8, the Panel should take into account developments subsequent to the date of the panel request to the extent that there is such evidence before it and that evidence is relevant to the question of whether compliance has been achieved.

9.107. More generally, we consider that, consistent with the approach taken by the original panel, we will not limit the temporal scope of the evidence that may be relevant to undertaking our assessment, and therefore will examine the entirety of the evidence submitted by the parties, including the most recent evidence, in light of the parties' arguments. However, we recognize that, in order for the European Union to make its case that the United States has failed to comply with Article 7.8 of the SCM Agreement, it must establish the existence of adverse effects, in the form of serious prejudice within the meaning of Articles 5(c) and 6.3 of the SCM Agreement, in the post-implementation period, i.e. in the *period after 23 September 2012*. Accordingly, our conclusions as to whether the European Union has demonstrated that any or all of the U.S. subsidies that the United States has failed to withdraw, within the meaning of Article 7.8, cause adverse effects, will focus on serious prejudice data presented by the parties with respect to the post-implementation

[2812] European Union's response to Panel question No. 169, paras. 175, 179, 191, and 548. The European Union also argues that options and purchases rights for additional 777Xs provided to customers in a number of sales campaigns in the 2013-2015 period constitute a further threat of significant lost sales. (European Union's response to Panel question No. 169, paras. 211 (Emirates 2013), 227 (Qatar Airways 2013), and 317 (Etihad Airways 2013)).

[2813] United States' first written submission, para. 699.

[2814] See also United States' response to Panel question No. 42, fn 190.

[2815] European Union's comments on the United States' response to Panel question No. 42, paras. 259-261.

[2816] European Union's first written submission, para. 834.

[2817] European Union's response to Panel question No. 155, para. 53.

period, as it is only with respect to the effects found to exist in this period that the United States may be found to have failed to comply with its obligation under Article 7.8 to take appropriate steps to remove the adverse effects.

9.108. We next evaluate, for the relevant groupings of competing Boeing and Airbus aircraft, whether the European Union has demonstrated that the subsidies at issue are a genuine and substantial cause of serious prejudice to its interests, within the meaning of Articles 5(c) and 6.3, in the post-implementation period. We begin with an evaluation of the effects of the 787 and 777X which are alleged to adversely affect sales and prices of the A350XWB and A330.

9.3 Whether subsidies benefiting the 787 and 777X cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB and A330 in the post-implementation period

9.3.1 Introduction

9.109. In this Section, we evaluate the European Union's case that the United States grants or maintains subsidies to Boeing benefiting the 787 and 777X which cause present adverse effects, in the form of certain kinds of serious prejudice to its interests, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB and A330 in the post-implementation period.

9.110. As previously explained, the European Union for the most part presents its arguments as to how certain aeronautics R&D subsidies operate through a technology causal mechanism and how the majority of post-2006 subsidies operate through a price causal mechanism on a horizontal basis; i.e. based on the nature of the particular subsidy or subsidy groups at issue, rather than the particular Boeing LCA said to be subsidized by the various subsidies in combination.[2818] Accordingly, in Section VII.E of its first written submission, the European Union purports to establish a "genuine" and "substantial" causal link between certain aeronautics R&D subsidies and "present adverse effects through a technology effects causal mechanism".[2819] In Section VII.F of its first written submission, the European Union purports to establish a "genuine" and "substantial" causal link between the majority of the post-2006 subsidies and "present adverse effects through a price-based causal mechanism".[2820]

9.111. In Section VII.H of its first written submission, dealing with the effects of the subsidies benefiting the 787 and 777X on the A350XWB and A330, the European Union presents its case that the "combined effects of: (i) certain of the US aeronautics R&D subsidies that improve the quality and accelerate the launch and availability of delivery positions of these Boeing LCA; and (ii) the other US subsidies that enable lower Boeing prices, constitute a "genuine and substantial" cause of the adverse effects discussed below, and the corresponding harm to Boeing's sole competitor – Airbus."[2821]

9.112. Owing to the conceptual and empirical differences underlying the European Union's main case of post-implementation serious prejudice to its interests in respect of the A350XWB, and the parallel argument that the serious prejudice caused by the pre-2007 aeronautics R&D subsidies that arose in 2004-2006 in respect of the A330 and Original A350 continues in the post-

[2818] See e.g. European Union's first written submission, section VII.E (Technology Causal Mechanism) and section VII.F (The U.S. Subsidies Cause Adverse Effects Through a Price Causal Mechanism), dealing in a horizontal fashion with the arguments concerning the technology causal mechanism and price causal mechanism, compared to section VII.H (Effects of U.S. Subsidies Benefiting the 787 and 777X on the A330 and A350XWB), section VII.I (Effects of U.S. Subsidies Benefiting the 737 MAX on the A320neo), and section VII.J (Effects of the U.S. Subsidies Benefiting the 737NG on the A320ceo), dealing with the collective effects of all of the subsidies benefiting the various Boeing aircraft on the competing Airbus aircraft.

[2819] See European Union's first written submission, para. 1205.

[2820] See European Union's first written submission, para. 1223.

[2821] European Union's first written submission, para. 1199. The European Union's *main case* as outlined in section VII.H of its first written submission is that the effects of: (a) certain aeronautics R&D subsidies which improve the quality and accelerate the launch and delivery positions of the 787 and 777X LCA family aircraft (the so-called technology causal mechanism); and (b) the majority of the post-2006 subsidies which enable Boeing to lower its 787 and 777X prices (the so-called price causal mechanism), collectively, are a "genuine and substantial" cause of: significant lost sales (and threat of significant lost sales) of the A350XWB; significant price suppression (and threat of significant price suppression) of the A350XWB; and impedance and threat of impedance of the A350XWB in the U.S. market and a number of third country markets.

implementation period as present serious prejudice in respect of the A330 and A350XWB, we examine the two lines of argument separately.

9.113. First, in Section 9.3.2, we address the European Union's main case: whether certain subsidies granted or maintained by the United States after the end of the implementation period and benefiting the 787 and 777X cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, with respect to the A350XWB in the post-implementation period. Second, in Section 9.3.3, we address the European Union's parallel argument that the original serious prejudice to its interests caused by the pre-2007 aeronautics R&D subsidies that arose in 2004-2006 in respect of the A330 and Original A350 continues in the post-implementation period as serious prejudice to its interests with respect to the A330 and A350XWB.

9.3.2 The European Union's main case: Whether the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies combined with the other post-2006 subsidies cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB in the post-implementation period

9.114. The European Union alleges that certain aeronautics R&D subsidies and the majority of the post-2006 subsidies, collectively, are a *genuine and substantial* cause of the following forms of serious prejudice with respect to the A350XWB in the post-implementation period:

a. Significant lost sales of the A350XWB, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.[2822]

b. Impedance of imports of the A350XWB to the United States, within the meaning of Article 6.3(a) of the SCM Agreement, and threat thereof.[2823]

c. Impedance of exports of the A350XWB, within the meaning of Article 6.3(b) of the SCM Agreement, to the Chilean, Qatari, United Arab Emirates, Mexican, Ethiopian, and

[2822] As evidenced by the following LCA sales campaigns involving the 787 or 777X in competition with the A350XWB occurring between 2007 and 2015: Qatar Airways 2007 and 2013 (European Union's first written submission, paras. 1410-1429; second written submission, paras. 1306-1320; and response to Panel question No. 169, paras. 212-227, 452, and fn 861); British Airways 2007 and 2013 (European Union's first written submission, paras. 1430-1441; and second written submission, paras. 1289-1305 and 1321-1331); LAN Airlines 2007 (European Union's first written submission, paras. 1450-1462; second written submission, paras. 1343-1355; and response to Panel question No. 169, para. 452 and fn 861); ILFC 2007 (European Union's first written submission, paras. 1463-1476; and second written submission, paras. 1356-1369); Virgin Atlantic Airways 2007 (European Union's first written submission, paras. 1477-1484; second written submission, paras. 1370-1378; and response to Panel question No. 169, para. 452 and fn 861); Etihad Airways 2008, 2011 and 2013 (European Union's first written submission, paras. 1485-1498; second written submission, paras. 1379-1395; and response to Panel question No. 169, paras. 294-317 and 325); United Airlines 2010, 2012, and 2013 (European Union's first written submission, paras. 1499-1511; second written submission, paras. 1260-1273 and 1396-1411; and response to Panel question No. 169, paras. 319-322); Air France-KLM 2011 (European Union's first written submission, paras. 1512-1531; second written submission, paras. 1412-1424; and response to Panel question No. 169, para. 452 and fn 861); Aeromexico 2012 (European Union's first written submission, paras. 1532-1545; second written submission, paras. 1425-1434; and response to Panel question No. 169, para. 452 and fn 861); Singapore Airlines 2013 (European Union's second written submission, paras. 1274-1288); Emirates 2013 (European Union's response to Panel question No. 169, paras. 193-211); Cathay Pacific 2013 (European Union's response to Panel question No. 169, paras. 228-247); Lufthansa 2013 (European Union's response to Panel question No. 169, paras. 248-274); All Nippon Airlines 2014 and 2015 (European Union's response to Panel question No. 169, paras. 275-293, 323, and 324); and Ethiopian Airlines 2015 (European Union's response to Panel question No. 169, paras. 326 and 327). More generally, see European Union's first written submission, paras. 1311 and 1407-1566; second written submission, paras. 866, 1159-1203, and 1256-1452; and response to Panel question Nos. 42, paras. 255 and 273, and 169, paras. 171-328 and 409-452.

[2823] As evidenced by the United Airlines 2010 sales campaign, alleged to be a significant lost sale of the A350XWB (European Union's first written submission, paras. 1586 and 1587; second written submission, paras. 1532-1536; and response to Panel question No. 169, paras. 459-461).

Japanese third country markets[2824], and to the Chinese and Indian third country markets, and threat thereof,.[2825]

d. Significant price suppression of the A350XWB, within the meaning of Article 6.3(c) of the SCM Agreement, and threat thereof.[2826]

9.115. For each of the sales campaigns said to evidence significant lost sales of the A350XWB, the European Union alleges that the "subsidy-enhanced features" of the 787 and 777X; i.e. both the technological advancements of the aircraft (resulting in lower fuel burn and maintenance costs) and its earlier delivery availability, as well as the "subsidy-enabled aggressive pricing conditions Boeing offered" were a genuine and substantial cause of the customer's decision to order the 787 or 777X, as the case may be, over the competing model of A350XWB.[2827] The European Union's impedance and significant price suppression claims as described above are also based on the assertion that the suppression of A350XWB prices occurred due to a combination of very low prices *and* the "advanced technology and early availability" of the 787.[2828]

9.116. The Panel adopts a unitary approach to establishing causation, under which prices, sales, market share, and other indicators of competitive harm are not assessed in isolation, but rather as part of an integrated causation analysis.[2829] Our analysis is counterfactual in nature: we ask whether, but for the effects of the various subsidies, Airbus' sales, prices and market share would be higher. We will analyse the effects of the subsidies in two related phases: First, we examine the effects, if any, of the relevant category of subsidies on *Boeing's product development and pricing*

[2824] Based on the following sales campaigns, each of which is alleged to be a significant lost sale of the A350XWB: LAN 2007 (European Union's first written submission, paras. 1590 and 1591; second written submission, paras. 1547-1550; and response to Panel question No. 169, paras. 466 and 467); Qatar 2007 (European Union's first written submission, paras. 1608 and 1609; second written submission, paras. 1578-1580; and response to Panel question No. 169, paras. 484 and 485); Etihad 2008, 2011, and 2013 (European Union's first written submission, paras. 1610 and 1611; second written submission, paras. 1581-1584; and response to Panel question No. 169, paras. 486 and 487); Aeromexico 2012 (European Union's first written submission, paras. 1606 and 1607; second written submission, paras. 1574-1577; and response to Panel question No. 169, paras. 482 and 483); Ethiopian 2015 (European Union's response to Panel question No. 169, paras. 470-472); and All Nippon Airlines 2014 and 2015 (European Union's response to Panel question No. 169, paras. 478 and 479). On account of Lion Air having cancelled its 2012 order for 787 aircraft, the European Union no longer argues that U.S. subsidies caused displacement in the Indonesian market for new technology, twin-aisle LCA (see European Union's response to Panel question No. 169, fn 863).

[2825] Based on evidence that Boeing is projected to make more than 50% of present and future deliveries of "new technology, twin-aisle" aircraft into these markets. (European Union's first written submission, paras. 1592, 1593, 1598, and 1599; second written submission, paras. 1551-1553 and 1560-1563; and response to Panel question No. 169, paras. 468, 469, 476, and 477).

[2826] As evidenced by aggregate average A350XWB prices between 2007 and 2015 as well as evidence from sales campaigns from 2007 and 2010-2015 purporting to show that the 787 and 777X, and the "subsidy-enhanced low prices" of these aircraft forced Airbus to lower its A350XWB prices below what it would otherwise have been able to achieve (European Union's first written submission, paras. 1277-1328; second written submission, paras. 1463-1515; and response to Panel question Nos. 170, paras. 546, 548, 550-556, and 559-565, and 166, para. 153).

[2827] European Union's first written submission, paras. 1410-1544; second written submission, paras. 1260-1434; and response to Panel question No. 169, paras. 182-325. In its discussion of the factors that allegedly led customers to prefer the 787 or 777X over the competing model of A350XWB, the European Union addresses, for each sales campaign: (a) "Availability", referring to the alleged earlier launch and delivery positions for the 787 or 777X, as the case may be, said to be due to the aeronautics R&D subsidies operating through various aspects of a technology causal mechanism; (b) "Technology", referring to the innovative technology and related fuel efficiency of the 787 or 777X, as the case may be, again said to be due to the aeronautics R&D subsidies operating through various aspects of a technology causal mechanism; and (c) "Pricing", referring to Boeing's allegedly aggressive pricing behaviour that was said to be due to the post-2006 subsidies operating through a price causal mechanism. See also European Union's first written submission, paras. 1305-1307 (alleging that the 787's advanced technology and early availability were deciding factors in identified LCA sales campaigns), and paras. 1311-1313 (alleging that certain "illustrative competitive sales campaigns, which are largely clustered in two distinct time periods of 2007 and 2010-2012" show that Boeing's aggressive pricing was a decisive factor in the 787 winning the sale over the A350XWB). The claims concerning threat of impedance and impedance of A350XWB imports and exports are similarly based on Boeing's product development and pricing decisions (in each case, said to be the result of U.S. subsidies to Boeing) which have allegedly resulted in deliveries of the 787 at the expense of deliveries of the A350XWB. (European Union's first written submission, para. 1583).

[2828] See e.g. European Union's first written submission, paras. 1291 and 1298.

[2829] See Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1658.

of the 787 and 777X; and second, we examine whether any such effects of the subsidies in question on Boeing's product development and prices had the alleged impact on A350XWB sales and prices in the post-implementation period, such that these subsidies constitute a genuine and substantial cause of the particular forms of serious prejudice alleged by the European Union with respect to the A350XWB.

9.117. In commencing our evaluation of the European Union's main serious prejudice case with respect to the A350XWB, we analyse, in Section 9.3.2.1 whether the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies benefiting the 787 and 777X cause serious prejudice in respect of the A350XWB in the post-implementation period through a technology causal mechanism. We then examine, in Section 9.3.2.2, whether certain post-2006 subsidies benefiting the 787 and 777X cause serious prejudice in respect of the A350XWB in the post-implementation period through a price causal mechanism.

9.3.2.1 Whether the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB in the post-implementation period, through a technology causal mechanism

9.118. The European Union argues that the *pre-2007 aeronautics R&D subsidies* continue to cause significant competitive harm to the European Union's LCA-related interests following the end of the implementation period through their genuine and substantial contribution to Boeing's development of technologies for its current aircraft and the availability of future Boeing LCA. The European Union alleges that Boeing benefits from the effects of the pre-2007 aeronautics R&D subsidies in three main ways, which it refers to as the "main technology effects" of these aeronautics R&D subsidies[2830]:

a. *Original subsidy technology effects*: Boeing continues to benefit from *787 technologies* that were "found to be the effect" of the original pre-2007 aeronautics R&D subsidies, which impact the market through sales of the 787.[2831]

b. *Spill-over technology effects*: Boeing has benefited from the application of the "subsidized 787 technologies" to Boeing's more recent 787, 777X (and 737 MAX) LCA developments.[2832]

c. *Sleeper technology effects*: Boeing has developed new innovative technologies based in part on research conducted under the original aeronautics R&D programmes which it is now beginning to apply to its most recent LCA developments.[2833]

9.119. The European Union also argues that *certain post-2006 aeronautics R&D subsidies* operate through a further particular "main technology effect" of the technology causal mechanism:

a. *New subsidy technology effects*: Boeing is the beneficiary of new "post-2006" NASA, DOD and FAA aeronautics R&D subsidies, which have enabled Boeing to develop new technologies for its 787-10 and 777X LCA models and enabled their early availability.[2834]

9.120. The United States disputes that, since the end of the implementation period, the aeronautics R&D subsidies cause adverse effects through the above-referenced aspects of the technology causal mechanism alleged by the European Union. The United States considers that the European Union's allegations are based on the "faulty premise" that the technology effects found by the original panel have continued past the compliance deadline. Rather, there is no basis for the European Union's presumption that the current market presence of the 787 and the application of the 787 technologies are "genuinely and substantially" related to subsidies.[2835] In the original proceeding, the European Communities did not argue that Boeing *never* would have launched the 787; only that the 787 would have been launched *later* than it was. The original panel found that,

[2830] European Union's first written submission, para. 982.
[2831] European Union's first written submission, para. 983.
[2832] European Union's first written submission, para. 984.
[2833] European Union's first written submission, para. 985.
[2834] European Union's first written submission, para. 986.
[2835] United States' first written submission, para. 703.

absent the aeronautics R&D subsidies, Boeing "most likely" would have launched the 787, but "significantly later" than 2004. Thus, for the United States, the relevant question is not *if* Boeing would have launched the 787 without the benefit of the NASA and DOD programmes, but *when* the 787 launch would have occurred. The United States argues that "in a counterfactual without the WTO-inconsistent R&D subsidies, Boeing would still have developed the technology to make the 787 available as it currently is, launch the 737 MAX when and as it did, and develop the 777X as it is."[2836] For the United States, this refutes most of the European Union's case concerning the alleged operation of pre-2007 aeronautics R&D subsidies through a technology causal mechanism.

9.121. The United States also disputes that any of the post-2006 aeronautics R&D subsidies operate through any aspect of a technology causal mechanism.

9.122. In Sections 9.3.2.1.1 through 9.3.2.1.4 we examine whether the European Union has established that the pre-2007 aeronautics R&D subsidies, and certain post-2006 aeronautics R&D subsidies alleged to operate through a technology causal mechanism give rise to the particular forms of technology effects in the post-implementation period that the European Union alleges in relation to the 787 and 777X. To the extent that we find that these subsidies have such effects on Boeing's product development of the 787 and 777X, we will then assess the consequent impact on A350XWB sales and prices in the post-implementation period so as to determine whether the subsidies in question, through these technology effects, constitute a genuine and substantial cause of the particular forms of serious prejudice alleged by the European Union in respect of the A350XWB.

9.3.2.1.1 Original subsidy technology effects of the pre-2007 aeronautics R&D subsidies

9.123. The European Union has at times framed its "technology effects" arguments on the basis that the effects of the pre-2007 aeronautics R&D subsidies that are said to continue into the post-implementation period are the 787 technologies themselves.[2837] The United States disputes such an interpretation of the original panel and Appellate Body findings. It argues that the panel and the Appellate Body found only that the aeronautics R&D subsidies accelerated Boeing's development of 787 technologies and thereby enabled it to launch the 787 earlier than would otherwise have been the case. We therefore begin our evaluation of the European Union's arguments that the original technology effects of the pre-2007 aeronautics R&D subsidies on the 787 continue into the post-implementation period by clarifying the precise findings regarding the effects of the aeronautics R&D subsidies in the original proceeding.

9.124. In the original proceeding, the European Communities argued that the aeronautics R&D subsidies accelerated Boeing's development of new, advanced technologies for the 787 and thereby caused serious prejudice to its interests in respect of competing Airbus aircraft in the 200-300 seat LCA product market.[2838] According to the European Communities, but for Boeing's participation in the NASA and DOD aeronautics R&D programmes at issue, Boeing would not have been able to launch a technologically advanced aircraft like the 787 in 2004, with promised deliveries in 2008.[2839] In evaluating the effects of the pre-2007 aeronautics R&D subsidies on Boeing's development of advanced LCA technologies, the original panel considered that Boeing "most likely" would have either: (a) developed a 767-replacement that incorporated all of the

[2836] United States' first written submission, para. 708. The United States submits a statement by Boeing engineers to the effect that, absent the R&D subsidies Boeing would have launched the 787 most likely no later than 2006, in any case well before September 2012, leaving ample time for Boeing to adapt 787 technologies to the 777X and 737 MAX.

[2837] There are several places throughout the European Union's submissions where the ordinary meaning of the language chosen by the European Union to express its argument indicates that the European Union considers that the effects of the pre-2007 aeronautics R&D subsidies on the 787 continue into the post-implementation as the 787 technologies themselves. Such arguments can only be based on an assumption that the original panel found that the 787 technologies themselves were the effect of the aeronautics R&D subsidies. See e.g. European Union's first written submission, paras. 979 and 983; comments on the United States' response to Panel question No. 156, para. 58.

[2838] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1601-7.1604. Specifically, the European Communities argued that the challenged subsidies "accelerated Boeing's development of new and advanced LCA technologies, as well as design and manufacturing processes, thereby enabling Boeing to bring the 787 to market much sooner than it could have on its own", "limited and delayed Airbus' access to innovative R&D technologies", "increased the marketability of the 787", and "allowed a rapid ramp-up of 787 deliveries". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1601).

[2839] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1774.

technologies that are featured on the 787, but its launch would have occurred "significantly later" than 2004 and Boeing would not have been able to promise deliveries for 2008; or (b) launched a 767-replacement in 2004 that, while technologically superior to the 767, was not as technologically innovative as the 787 that actually launched.[2840] The panel ultimately reasoned that it was not necessary to determine which outcome would have occurred. It explained:

> What is clear to us is that, absent the aeronautics R&D subsidies, Boeing would not have been able to launch an aircraft incorporating all of the technologies that are incorporated on the 787 in 2004, with promised deliveries commencing in 2008.[2841]

9.125. This conclusion was supported by the panel's earlier findings that the aeronautics R&D subsidies complemented Boeing's internal product development efforts, and were focused on areas that "carry the greatest prospect of creating significant competitive advantage" and otherwise helped Boeing "reduce the time to market".[2842] The panel did not consider, however, that the technologies applied to the 787 were exclusively attributable to work conducted under the challenged NASA and DOD aeronautics R&D programmes. Instead, the panel recognized that Boeing's technology developments were "clearly the product of a variety of factors".[2843] The panel explained that it would be reasonable to assume that, at some point in time, it would no longer be possible to characterize the research conducted under the aeronautics R&D programmes at issue as having contributed in a genuine and substantial way to the technologies applied on a given product, including the 787.[2844] The panel did not consider that this point had been reached in 2004, however.[2845]

9.126. The Appellate Body affirmed the panel's overall conclusions regarding the effects of the aeronautics R&D subsidies at issue, explaining that "{t}he Panel's finding must be understood to mean that the NASA aeronautics R&D subsidies accelerated the technology development process by *some* amount of time, and, therefore gave Boeing an advantage in bringing its technologies to market".[2846] Elsewhere, the Appellate Body described the aeronautics R&D subsidies as having provided Boeing with a "boost"[2847] to the development of technologies "at the earliest, most fundamental, stages of research".[2848] We therefore consider that the original panel and the Appellate Body found that the aeronautics R&D subsidies accelerated Boeing's development of technologies for the 787, which in turn enabled Boeing to launch the 787 earlier than otherwise would have been possible, thereby reducing Boeing's time to market with the 787.

9.127. It is clear from the foregoing that neither the panel nor the Appellate Body considered that the 787 technologies were themselves the effects of the aeronautics R&D subsidies. The aeronautics R&D subsidies were not found to have brought into existence any technology or product that would not otherwise exist. Rather, they accelerated Boeing's development of various technologies and reduced the time to market of a technologically-advanced product that would

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[2840] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1775.
[2841] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1775.
[2842] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1742.
[2843] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1758. The panel referred, for instance, to the significant investments that Boeing and its suppliers had made from 2000 onwards in R&D for the development of the Sonic Cruiser, the expertise developed by Boeing and certain of its 787 suppliers in the use of composites in primary and secondary structures, as well as knowledge and experience that Boeing derived from development of the 777 and 737NG LCA programmes. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1757).
[2844] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1758. The panel explained as follows:
> Boeing's technology developments are clearly the product of a variety of factors. Indeed, it is reasonable to assume that at some point in time, the contribution of the NASA-funded research will diminish in relation to other, more recent or revolutionary technological developments that are attributable to other factors, and that it will no longer be possible to characterize the NASA research conducted in the 1990s as having contributed in a genuine and substantial way to new technologies applied to future Boeing LCA.

[2845] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1758.
[2846] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 980 (italics original, underlining added).
[2847] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 986.
[2848] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 986.

otherwise have taken Boeing longer to develop and place on the market.[2849] The issue for our analysis under Article 7.8 of whether the United States has taken appropriate steps to remove the adverse effects is whether this acceleration of Boeing's development of advanced LCA technologies that the aeronautics R&D subsidies were found to have in the original proceeding is still evident or whether it has ended by the end of the implementation period.

9.128. Given that the effects of the aeronautics R&D subsidies found in the original proceeding were to accelerate Boeing's development of advanced LCA technologies, leading to an earlier than otherwise launch of the 787, the mere existence of 787 technologies (as applied to the 787, or as adapted through technological spill-over to the 777X and other newer Boeing LCA) in the post-implementation period does not demonstrate that this effect continues. Rather, an assessment of whether this acceleration effect continues to exist in the post-implementation period logically involves a counterfactual analysis of whether Boeing likely would have been in a different situation with respect to the timing of its 787-related technology development absent these aeronautics R&D subsidies.[2850] Specifically, the question is whether it is likely that, absent these subsidies, the 787 technologies would still not have been developed by the end of the implementation period and thus the 787 would not have been present in the market by that time. It is logical to ask in this connection how much additional time Boeing would have required to develop the 787 absent these subsidies because this would indicate whether it is likely that Boeing would have been in the market with an unsubsidized 787 prior to the expiration of the implementation period, in which case the pre-2007 aeronautics R&D subsidies can no longer be characterized as contributing in a genuine and substantial way to Boeing's 787-related technology development.

9.129. With these considerations in mind, the Panel now turns to the arguments and evidence provided by the parties in support of their estimates of the additional time that it would have taken Boeing to develop the 787 absent the pre-2007 aeronautics R&D subsidies.[2851]

[2849] The findings of the panel in the original proceeding regarding the nature and effects of the aeronautics R&D subsidies (i.e. an acceleration effect providing a time to market advantage) can be contrasted with certain of the findings in *EC and certain member States – Large Civil Aircraft* regarding the nature and effects of certain of the subsidies at issue in that dispute. In *EC and certain member States – Large Civil Aircraft*, the panel concluded, among other things, that Airbus would have been *unable* to bring to market the LCA that it launched but for certain of the subsidies in question. In other words, certain of the subsidies in question in that dispute enabled the *creation and market presence* of products that would not otherwise *exist*. (See Panel Report, *EC and certain member States – Large Civil Aircraft*, paras. 7.1949 and 7.1984; and Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1261, 1264-1270, and 1300). See also Panel Report, *EC and certain member States – Large Civil Aircraft (Article 21.5 – US)*, paras. 6.1464-6.1477.

[2850] The use of a counterfactual analysis in this context is consistent with our general approach in this Section of the Report, in which we consistently assess the effects of subsidies through counterfactual analysis. See e.g. para. 9.116 above.

[2851] We note that the arguments of both the European Union and the United States are premised on the idea that the proper counterfactual analysis of whether the acceleration effect of the pre-2007 aeronautics R&D subsidies on Boeing's technology development continues involves an analysis of what the situation would have been if Boeing had not received these subsidies. This presupposes that the situation that would exist "absent the subsidies" is the situation that would exist if the subsidies had never been granted. Canada, a third party in this proceeding, argues that Article 7.8 does not require this approach to the counterfactual analysis. According to Canada, a Member satisfies its obligation under Article 7.8 if it withdraws subsidies by the end of the implementation period. For Canada, this means that the appropriate counterfactual analysis to assess the impact of non-withdrawn subsidies is to consider what the situation would be if the subsidies had been withdrawn by the end of the implementation period and that a compliance panel is not required to conduct an analysis of what the situation would be if the subsidies had never been granted in the first place. (Canada's third-party statement, paras. 30-37; third-party submission, paras. 37 and 44-46). Canada thus considers that a proper counterfactual analysis of the effects of the pre-2007 aeronautics R&D subsidies in the post-implementation period requires the identification of the situation that would prevail if these subsidies had been withdrawn at the end of the implementation period. Canada submits that if the European Union has failed to demonstrate that the situation regarding sales volume and prices of Boeing aircraft and the resulting impact on the sales volume and prices of competing Airbus aircraft would be any different if the R&D subsidies had been withdrawn at the end of the implementation period, the Panel cannot find that the R&D subsidies cause adverse effects in the post-implementation period. We note, however, that Canada appears to acknowledge that demonstrating that Boeing's technology developments would not be materially different if it had never received the subsidies implicitly also demonstrates that Boeing's technology developments would not be materially different if the subsidies had been withdrawn by the end of the implementation period. (Canada's third-party submission, para. 45). Therefore, the issue raised by Canada appears to be of limited practical import in this proceeding and we proceed on the basis of the counterfactual analysis as framed by the parties,

9.130. In its first written submission, the United States seeks to demonstrate that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 most likely no later than 2006, leaving ample time for Boeing to adapt 787 technologies to the 777X and 737 MAX.[2852] In response to the United States' first written submission, the European Union argues that it is not plausible that Boeing, with its own funding, could have "replicated" in less than two years the "decades of US Government-supported R&D that enabled the development and launch of the 787".[2853] The European Union argues that it would have taken Boeing "at least 10 years to develop only a number of select LCA technologies and design tools necessary for the 787", and in addition to the ten years, Boeing would further "require considerable time to develop the knowledge it has acquired through its decades of experience participating in the US Government-supported R&D programmes".[2854] This time-frame would still be inadequate, as it pertains to the development of *individual* technologies, and in reality, it would take even longer to "develop, mature, produce and certify a *package of new innovative technologies* and the time required to find the design solution to make them interact optimally".[2855]

9.131. We evaluate the merits of these two estimates below. We begin by explaining the European Union's "additional 10 years plus" estimate, and the United States' criticisms, and the United States' "counterfactual launch no later than end of 2006" estimate and the European Union's criticisms.

The European Union's "additional 10 years plus" estimate of the time it would have taken Boeing to develop the 787 absent the pre-2007 aeronautics R&D subsidies

9.132. The European Union relies on a statement by Airbus engineers to support its estimate that Boeing would have needed more than ten years to develop the technologies and design tools acquired from its participation in the relevant aeronautics R&D programmes to be in a position to develop and launch the 787 absent the pre-2007 aeronautics R&D subsidies (the Airbus Engineers' Response).[2856] The Airbus Engineers' Response was submitted as a response to, and critique of, a statement of Boeing engineers that supports the United States' estimate.

9.133. The Airbus Engineers Response refers to a number of timeframes in relation to the development of an LCA, including the time to develop individual LCA technologies and design tools, and the time to integrate technologies into a final design solution. This includes a ten-year incubation period, to allow for necessary certification, quality testing and material proofs. The Airbus engineers explain that it takes at least **[***]** to develop the requisite composite design and manufacturing tools, in particular with respect to tolerance specifications.[2857] They also describe a "building block" approach for developing new technologies, which starts from an early study phase, and continues through design, procurement, production, certification and delivery and inherently involves trial and error. Finally, they conclude that, were Airbus to undertake development of a composite 360° barrel design, based on Airbus' knowledge of composites at the time the 787 was launched in 2004, it would have taken Airbus **[[HSBI]]** to develop, mature, produce and certify

i.e. as an analysis of the situation that would likely exist if the aeronautics R&D subsidies had never been granted to Boeing.

[2852] United States' first written submission, para. 709. The United States asserts that it is making this demonstration to assist the Panel, even though as a legal matter, it has met its burden of rebuttal by showing that the European Union has failed to address the relevant question in conducting a counterfactual analysis of the alleged technology effects on the 787, including any "spill-over" effects. (United States' first written submission, paras. 706 and 707).

[2853] Response by B. Domke, P. A. Brown, J. Kumpfert, and I. Whitehouse to the June 2013 Statement of Boeing Engineers, 19 July 2013 (Airbus Engineers' Response), (Exhibit EU-1014) (BCI), para. 3. The European Union does not provide an estimate of the length of time it would have taken Boeing to develop the 787 absent the pre-2007 aeronautics R&D subsidies in its first written submission.

[2854] European Union's second written submission, para. 975. See also European Union's second written submission, paras. 975, 1012, and 1031-1041; Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 55 and 63; European Union's response to Panel question Nos. 45 and 154; and European Union's comments on United States' response to Panel question Nos. 45 and 47.

[2855] European Union's second written submission, para. 1031 (emphasis original). The European Union also criticizes the Boeing engineers' specific estimates of the time it would have taken to complete certain R&D tasks, and any comparison the Boeing engineers draw to the time it actually took to design and develop the A350XWB. (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 48-63 and 67-87).

[2856] Airbus Engineers' Response, (Exhibit EU-1014) (BCI).

[2857] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 43.

the composite 360° barrel sections for use on the A350XWB.[2858] Based on the Airbus Engineers' Response, the European Union asserts that it would have taken Boeing "at least **[[HSBI]]** longer to *deliver* the 787, with the launch delayed by a similar amount of time".[2859]

9.134. The United States argues that the European Union's position that it would have taken Boeing an unspecified period in excess of ten years to develop technologies and an unspecified period to actually launch the 787 is unsupported by the evidence. The United States considers that, apart from being both "highly generalized" and "unsupported by reference to real-world experience in the specific technologies at issue"[2860], the European Union's estimate improperly assumes that Boeing would need to take additional time for work *not performed* under the R&D programmes. The United States argues that the proper counterfactual estimate should only take into account the additional time required to attain the increased knowledge and experience to undertake the subsidized aspects of the technology development process of the 787 in order to fill the gap in knowledge and experience. By accounting for the entirety of development, maturation, production, and certification of technologies actually used on the 787, the European Union attributes to the subsidies all non-subsidized development. By doing so, the European Union inappropriately double counts the time that it would have taken Boeing to develop the 787 with its particular technologies, absent the aeronautics R&D subsidies.

9.135. The United States also contends that the European Union has never indicated in this proceeding when it considers the 787 would have launched absent the subsidies, and by extension has failed to establish that the 787's counterfactual launch would have occurred after the end of the implementation period.[2861] The United States contrasts this ambiguity with the more definitive position that the European Communities took in the original panel proceeding as to how long it would have taken Boeing to launch the 787 absent the subsidies: "The European Communities argues that, had Boeing needed to develop the 787 using its own resources, the 787 would likely not have been launched any earlier than mid-2006 …".[2862]

The United States' estimate that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 no later than 2006

9.136. As support for its estimate that absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 no later than 2006, the United States relies on a statement by eight Boeing engineers who worked on the development of the 787, 777X, and/or 737 MAX (the Boeing Engineers' Statement).[2863] The Boeing engineers purport to estimate the extent of the timing advantage that the pre-2007 aeronautics R&D subsidies could "maximally" have provided Boeing, based on the assumption for purposes of their statement that Boeing did in fact enjoy such a timing advantage.[2864] They assume that: (a) Boeing (including McDonnell Douglas) had not participated in the relevant NASA and DOD aeronautics R&D programmes; and (b) aside from that lack of participation by Boeing, the degree of knowledge and technology that Boeing attained through its independent R&D activities, its suppliers and the broader aeronautics community remains the same.[2865]

9.137. The Boeing engineers first discuss Boeing's incentives to conduct early-stage research in the early 2000s, when Boeing was undertaking intensive pre-launch product development for the Sonic Cruiser, and then the 7E7, which later became the 787. They then consider the seven specific 7E7/787 technology areas considered by the original panel and purport to assess the "additional time required to replicate the work done by Boeing under the NASA and DOD programs

[2858] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 40.
[2859] European Union's comments on United States' response to Panel question No. 153, paras. 19 and 42. (emphasis original)
[2860] United States' second written submission, para. 782.
[2861] United States' comments on European Union's response to Panel question No. 153, paras. 16 and 22, and fn 20.
[2862] United States' comments on European Union's response to Panel question No. 153, para. 16 (referring to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 4.280).
[2863] Statement of Boeing Engineers Regarding the Technologies and Development of the 787, 737 MAX, and 777X, June 2013 (Boeing Engineers' Statement), (Exhibit USA-283) (BCI).
[2864] The Boeing engineers explain that they disagree with the panel's findings concerning the links between the pre-2007 aeronautics R&D subsidies and the 787, but assume those findings to be correct for purposes of their analysis. (Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 4).
[2865] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 5.

using the internal resources of Boeing and its suppliers".[2866] The engineers explain that "{t}his assessment is based on examples of the time and effort taken by Boeing and its suppliers to address early-stage R&D challenges that were either comparable to, or more demanding than, the types of activities conducted under the NASA and DOD programs".[2867] Finally, the Boeing engineers discuss the pattern and pace of Airbus' development of the A350XWB, on the basis that Airbus' ability to announce orders for the A350XWB in July 2006, followed by formal launch that December, even though it did not have access to the benefits from the pre-2007 aeronautics R&D subsidies, is a "useful reference point" for analysing the counterfactual timing of the 787 launch.[2868]

9.138. The Boeing engineers express the view that, even though commercial enterprises may generally face disincentives to invest in early-stage aeronautics research where the commercial payoff is highly uncertain, distant or difficult to capture, "such disincentives diminish significantly where an aircraft manufacturer identifies a compelling need to develop a new product requiring specific attributes that are difficult or impossible to offer using existing technology".[2869] According to the Boeing engineers, Boeing faced precisely that situation in the early 2000s when it determined that a critical priority was to develop a new, highly-efficient mid-sized twin-aisle aircraft to replace the 767 and serve anticipated demand for point-to-point long-haul travel, while customers were at the same time demanding significant breakthroughs in efficiency but were reluctant to pay more than the acquisition cost of the 767 and A330. The Boeing engineers state that under those circumstances, "Boeing had ample incentive to, and would, undertake whatever additional early-stage research necessary to augment its ongoing R&D for the 787."[2870] This was evident from the risky, early-stage R&D that Boeing actually conducted on a number of technologies during the 787 development program.[2871]

9.139. With those considerations in mind, the Boeing engineers provide specific estimates of the time that would have been required to replicate the work done by Boeing under the pre-2007 NASA and DOD aeronautics R&D programmes found to involve subsidies using the internal resources of Boeing and its suppliers.[2872] Their conclusions are summarized as follows:

a. Composite fuselage: Boeing could have replicated in less than two years the particular tasks that were accomplished under NASA's Advanced Technology Composite Aircraft Structures (ATCAS) program, given the scope, scale and complexity of the work and technical challenges involved, when compared to Boeing's work developing a one-piece composite barrel design concept for incorporation into the 7E7 baseline design, its completion of a full-scale demonstration barrel fuselage section and development of design, tooling and production concepts.[2873] Specifically, it would have taken approximately 18 months to build and study the ATCAS panelized composite fuselage section, given that Boeing took **[***]**.[2874] It would have taken Boeing **[***]** if conducted during the 7E7 development program, given that it took **[***]** to conclude "much more exacting and complex costing studies of the barrel fuselage design adopted for the 787".[2875]

b. Composite wings: Boeing could have completed construction and testing of a semi-span composite wing box demonstrator using a stitched/resin filled infusion technology that

[2866] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 7. These technology areas are: (a) composite fuselage; (b) composite wings; (c) aerodynamics and structural design; (d) more-electric architecture; (e) open systems architecture; (f) health management systems; and (g) noise reduction technologies.

[2867] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 7.

[2868] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 8.

[2869] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 9.

[2870] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 10.

[2871] The Boeing engineers also argue that the time required to advance research from technology readiness levels is significantly reduced when that research occurs in the context of a high-priority aircraft development program (Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 12: "{o}n such a program, Boeing pre- and post-launch R&D activity proceeds at a much faster pace than NASA R&D aeronautics programmes because it is subject to tight deadlines and given much greater engineering and budgetary resources to meet those deadlines").

[2872] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 13-40.

[2873] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 23.

[2874] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 21.

[2875] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 22.

was developed under the NASA's Advanced Subsonic Technology (AST) Program in approximately 18 months as compared to the **[***]**.[2876] Boeing participated in the composite wing element of the NASA AST Program for a period of five years.[2877]

c. Aerodynamics and structural design: Boeing could have developed enhanced TRANAIR and OVERFLOW computational fluid dynamics (CFD) codes in approximately six months using the level of resources that were available under the 7E7 programme, had Boeing done the work on its own rather than under the NASA's AST Program. According to the Boeing engineers, "one Boeing employee worked part-time for 3 years to assess the TRANAIR and OVERFLOW generic (publicly available) codes".[2878]

d. More-electric system architecture: Between **[***]**, Boeing made rapid progress **[***]**. This was because "Boeing was serious about bringing a new aircraft to market" and also because Boeing took the decision to deploy **[***]**. In light of the advances made in such a short time, "it would have taken Boeing even less time to conduct much less ambitious research, such as that done by McDonnel Douglas on the power-by-wire/fly-by-light subtask of NASA's AST programme".[2879]

e. Open systems architecture: Boeing could have developed defined generic open architecture specifications and component interfaces related to the 787 open systems architecture in approximately one year (rather than the three years spent by McDonnell Douglas under the DOD Vehicle Management Systems Integrated Technology for Affordable Lifecycle Cost (VITAL) Program), given that Boeing **[***]**.[2880]

f. Health management systems: The 787's health management system is only an enhanced version of the health management technology used on the 777, and "there was no need for significant early-stage R&D, and no need for learning or technology from U.S. Government R&D programs".[2881]

g. Noise reduction: The technological challenges that Boeing overcame in the **[***]** during which it matured and tested the noise reduction technologies for the 787 are comparable to or greater than those posed by the noise reduction technologies that Boeing had worked on under the NASA aeronautics R&D programmes.[2882]

9.140. As regards the estimate for the composite fuselage, the Boeing engineers make two additional observations. First, they note that prior to starting work on developing the aircraft that became the 787, Boeing already had decades of composites experience, from its use of composites on the 757 and 767 in the late 1970s, to the 737 Classics in the mid-1980s and most importantly, the 777 in the late-1980s and early 1990s.[2883] Second, they consider that their conclusion that, starting in late 2002, Boeing could have replicated its work under the ATCAS Program within two years is confirmed by how quickly Airbus was able to launch the "predominantly composite" A350XWB.[2884] Like Boeing, Airbus developed composites expertise over decades, generally increasing its application of composites with each successive aircraft programme. Similarly, Airbus leveraged the composites experience of its suppliers, and did not pursue the A350XWB until the commercial imperative arose.[2885] The Boeing engineers note that Airbus was able to announce orders for the A350XWB in July 2006, a little over two years after Boeing launched the 787, and

[2876] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 27. The Boeing engineers submit that the demonstrator developed under the NASA AST Program **[***]**. (Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 27).
[2877] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 27.
[2878] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 30.
[2879] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 33-35.
[2880] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 36.
[2881] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 37.
[2882] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 40.
[2883] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 14.
[2884] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 24.
[2885] According to the Boeing engineers, Airbus needed to develop an aircraft to compete more effectively with the 787 and 777. (Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 24).

only months after Airbus had accepted firm orders for its earlier A350 design.[2886] The Boeing engineers conclude:

> In our view, Airbus' ability to offer the A350 XWB as quickly as it did shows that, with the right incentives, either of the existing large commercial aircraft manufacturers can undertake development of an aircraft with a composite fuselage and then offer that aircraft to customers in a relatively short period of time.[2887]

9.141. The European Union makes a number of criticisms of the Boeing engineers' estimate of the counterfactual launch date of the 787 absent the pre-2007 aeronautics R&D subsidies. First, the European Union argues that the Boeing engineers' counterfactual estimate, while focused on the technical feasibility of developing and producing the 787, fails to take into account whether absent the subsidies it would have been feasible for Boeing to proceed with the launch of the 787 from an economic or commercial point of view. Second, the European Union considers that the Boeing engineers' estimate of the technical feasibility of developing the 787 without the assistance of the pre-2007 aeronautics R&D subsidies is flawed on a number of grounds.[2888]

9.142. With regard to the economic feasibility of launching the 787 absent the subsidies, the European Union argues that the Boeing engineers' counterfactual estimate ignores the question of whether Boeing would have considered it economically rational to proceed with the 787's launch, considering the original panel's findings that there are large disincentives inherent in conducting long-term, high-risk aeronautics R&D, and its overall finding that the 787 would have launched "significantly later" than 2004 absent Boeing's participation in the NASA and DOD programmes.[2889]

9.143. The European Union argues that it is for the United States to establish that Boeing would have invested all of the necessary funds to conclude all of the necessary pre-launch development absent the pre-2007 aeronautics R&D subsidies.[2890] In particular, the European Union argues that undertaking the fundamental R&D that was the subject of the pre-2007 aeronautics R&D subsidies "would have increased the uncertainty regarding Boeing's ability to deliver the aircraft as promised, both in terms of its timing and performance".[2891] The European Union considers that early-stage R&D will only be undertaken where it is economically rational to do so, specifically where the risk-adjusted return from the R&D is anticipated to exceed a company's investment hurdle rate or weighted average cost of capital. Any delay in the ability to deliver the 787 would give rise to negative effects in the form of additional costs, deferred revenues and additional risk, all of which would affect the risk-adjusted anticipated return and Boeing's "business case" for launching and bringing the 787 to market.[2892] The European Union asserts that these additional costs, deferred revenues and additional risk "would have reduced, or even undermined, the viability of the 787".[2893]

9.144. The European Union also makes a number of criticisms of the Boeing engineers' estimate, based on the technical feasibility of Boeing concluding the necessary R&D to be able to launch a technologically-comparable aircraft to the 787 absent the pre-2007 aeronautics R&D subsidies. The European Union seeks to support its criticisms of the Boeing engineers' statement by reference to

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[2886] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 24. See also United States' first written submission, paras. 785-788; and second written submission, paras. 799-811.

[2887] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 24.

[2888] The European Union argues that the United States simply repackages many of the same arguments that it made in the original proceeding regarding the relevance of Boeing's non-subsidized capabilities and those of it suppliers, as well as the relevance of the availability of Boeing's internal funds. (See European Union's second written submission, paras. 956, 957, 964, 967, 973-975, 977-997, 999-1010, 1014-1019, and 1022-1024; response to Panel question No. 45, paras. 297-317; and Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 7-63 and 67-87).

[2889] See European Union's second written submission, paras. 977-997 and 1014-1019; and response to Panel question No. 45, paras. 297-317.

[2890] European Union's response to Panel question No. 45, paras. 303-306 and 311.

[2891] European Union's response to Panel question No. 45, para. 316. The European Union questions the notion that long-term and uncertain research may become "short term and capable of execution" based on commercial imperative in the pre-launch phase combined with a **[***]** to complete the research. (European Union's second written submission, para. 1018).

[2892] See e.g. European Union's response to Panel question Nos. 45, paras. 313-317, and 154, paras. 30 and 34-38.

[2893] European Union's response to Panel question No. 45, paras. 313-317.

the Airbus Engineers' Response which responds specifically to the assertions made by the Boeing engineers in the Boeing Engineers' Statement.[2894]

9.145. First, according to the European Union, the Boeing engineers address the wrong counterfactual by estimating the time to *replicate* certain work. Asking whether Boeing could have replicated certain work absent the R&D subsidies assumes that the Boeing engineers already knew that the technology existed or was feasible. The European Union contends that Boeing engineers would not have known which technologies were technically feasible and necessary or desirable had Boeing not participated for decades in government-supported R&D programmes. It would not have made sense for Boeing to proceed with the decision to launch the 787 had it not known it was possible to develop the composite fuselage with the desired characteristics and cost benefits, for instance. Thus the relevant question is "how many years it would have taken Boeing to develop, mature, produce and certify novel technologies its engineers did not know existed, or were even feasible".[2895] In addition, the European Union argues that Boeing engineers' estimate fails to take into account the fact that there is a great deal of trial and error involved in aeronautics R&D.[2896]

9.146. Second, the European Union argues that, even assuming Boeing knew which technologies had to be researched, the Boeing engineers' estimate of two additional years of time is an unrealistically low estimate from an engineering standpoint. According to the European Union, the proper counterfactual must take into account the necessary time that would have been required to complete the "design, procurement, production, certification and delivery" of 787 technologies, which the Boeing engineers' estimate fails to do.[2897] In support of this, the Airbus engineers refer to the time that it typically takes to develop new materials, build and test complex structural elements, build full scale test models, conduct flight testing, certify the airworthiness, safety, and reparability of materials, and integrate new technologies into the final design.[2898] The European Union also criticizes Boeing engineers for failing to factor in that basic aeronautics R&D proceeds at a "slower pace" due to inherent uncertainty in the effort and the need to minimize wasting research.[2899]

9.147. Third, the European Union considers that the Boeing engineers' estimate is not based on a "comprehensive, component-by-component timeline"[2900] of all of the tasks that Boeing would have had to complete in relation to "the millions of components that Boeing developed for the 787".[2901] Instead, the estimate focuses on a limited set of R&D tasks and technologies undertaken pursuant to a sub-set of NASA and DOD programmes, and ignores entirely work performed under dual-use military RDT&E program elements.[2902]

9.148. Fourth, the European Union argues that statements made by Boeing outside the context of litigation contradict the plausibility of the Boeing engineers' estimate. The European Union refers to a presentation by Boeing engineers Craig Wilsey and Robert Stoker, from Boeing Commercial Airplanes Engineering, Operations & Technology Department.[2903] In discussing "{t}echnology {m}aturity {l}evels" in relation to technology readiness levels (TRLs), their presentation indicated that it takes "{u}p to 10 years for major technologies" to reach a TRL 6 and an additional "3 to 6

[2894] Airbus Engineers' Response, (Exhibit EU-1014) (BCI).
[2895] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 13
[2896] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 13; and European Union's second written submission, paras. 974, 975, 989-999, 1003, 1008, and 1023-1030.
[2897] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 28.
[2898] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 27-38.
[2899] European Union's second written submission, paras. 1028 and 1029; and Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 14.
[2900] European Union's comments on United States' response to panel question No. 46, para. 307. See also European Union's second written submission, paras. 1042-1047.
[2901] European Union's comments on United States' response to panel question No. 46, para. 307. See also European Union's second written submission, paras. 1042-1047. For instance, Airbus engineers fault the Boeing engineers for failing to refer to the "many US government-supported programmes that followed ATCAS" that contributed to the full barrel structure that Boeing now uses for the 787 composite fuselage. (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 69).
[2902] European Union's second written submission, paras. 1042-1047.
[2903] C. Wilsey, R. Stoker, "Continuous Lower Energy, Emissions and Noise (CLEEN) Technologies Development – Boeing Program Overview", Presentation at the CLEEN Consortium Public Session, 27 October 2010, (Exhibit EU-665), p. 4.

years" before the LCA is ready for entry into service and first delivery.[2904] The European Union asserts that "this timeframe is also corroborated by Boeing's Chief Technologist in stating that 'R&D programs … provide little-to-no return for *15-20 years* {because,} in the aviation industry, it can take that long, if not longer, for a technology to move from discovery to maturation to commercialization and implementation on a product'".[2905]

9.149. Fifth, the European Union argues that the Boeing engineers' estimate is also contradicted by the difficulties encountered by Boeing engineers in resolving the problems relating to the final development of the 787, which resulted in the delays of the first delivery of the 787 by nearly three and a half years.[2906] According to the European Union, the delays of the 787's entry into service contradict the proposition that Boeing could have researched the fundamental technologies developed under the NASA and DOD aeronautics R&D programmes in less than two years.[2907] The Airbus engineers assert that Boeing's handling of the 787 production delays serves as "real-life"[2908] experience demonstrating Boeing's inability to resolve "*even these more concrete, defined problems*"[2909], contradicting the notion that "solving engineering problems is merely a question of dedicating enough engineering resources and money, and less a question of taking the time to carefully resolve the engineering problems encountered".[2910] The European Union submits a statement by an Airbus engineer which contains a lengthy discussion of what he considers are the reasons for the delays in the entry into service of the 787; including the selection of a green field site, "inadequate supplier selection", and "inadequate supply chain coordination and supervision".[2911]

9.150. Sixth, the European Union rejects the suggestion that Airbus' experience developing the A350XWB serves as a benchmark that confirms the Boeing engineers' estimate of the amount of additional time it would have taken Boeing to develop the technologies in order to launch the 787. The European Union contends that the attempt by the Boeing engineers to confirm their estimate by reference to Airbus' experience with the A350XWB "compares apples with oranges"[2912], since the composite technology solutions on the two LCA differ significantly and the A350XWB does not incorporate a "more-electric" systems architecture. Hence, the Panel would need to add significantly to the A350XWB development time to account for these technological differences before making any comparison, as the composite technology solutions and "more-electric" systems architecture would take additional time to develop. The European Union also argues that, even without factoring in additional time to account for the technological differences between the A350XWB and 787, the Boeing engineers' estimate is wrong, as it has actually taken Airbus almost **[[HSBI]]** to develop the A350XWB without a full barrel composite fuselage or "more-electric" systems architecture, as compared to the 787 development time.[2913]

[2904] C. Wilsey, R. Stoker, "Continuous Lower Energy, Emissions and Noise (CLEEN) Technologies Development – Boeing Program Overview", Presentation at the CLEEN Consortium Public Session, 27 October 2010, (Exhibit EU-665), p. 4. The European Union refers to a presentation slide by Boeing engineers that indicates that 8-10 years is the "reality" for the time it takes to identify materials until they are production ready. (See European Union's comments on United States' response to Panel question No. 153, para. 22 (referring to G. Young, Director Materials & Fabrication Technology, "The Challenge of New Materials In the Aerospace Industry", Presentation at Georgia Institute of Technology, 15 May 2013, (Exhibit EU-1663), slide 8)).

[2905] European Union's comments on United States' response to Panel question No. 153, para. 22 (referring to Statement of Dr J. Tracy, Boeing Chief Technologist, before the U.S. Senate Committee on Commerce, Subcommittee on Aviation Operations, Safety, and Security, Hearing on "Threats to U.S. Competitiveness in Aviation", 18 July 2012, (Exhibit EU-82) (emphasis added by the European Union)).

[2906] At the time of launch in April 2004, Boeing committed to deliver the 787 to launch customers beginning in May 2008. However, entry into service was delayed until 26 October 2011. (See "Boeing 787 Hits Another Snag, Dreamliner's Timeline of Pain (BA)", *247wallst.com*, 10 November 2010, (Exhibit EU-1161); and T. Kelly, "Dreamliner carries its first passengers and Boeing's hopes", *Reuters*, 26 October 2011, (Exhibit EU-1181)).

[2907] European Union's second written submission, paras. 1009 and 1010; and Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 10.

[2908] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 8.

[2909] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 10. (emphasis original)

[2910] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 3.

[2911] Statement of B. Domke on the engineering-related aspects of the Panel's first set of questions, 4 December 2013, (Exhibit EU-1268) (BCI), paras. 5-22.

[2912] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 3.

[2913] European Union's second written submission, paras. 1011-1013; response to panel question No. 45, paras. 318-330; and Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 3, 14, and 47-62. Airbus

The Panel's evaluation of the two estimates

9.151. We begin by considering the arguments presented by the European Union that it would have taken Boeing at least an additional ten years or more to develop an aircraft equivalent to the 787 absent the pre-2007 aeronautics R&D subsidies. We then consider the merits of the estimate provided by the United States based on the Boeing Engineers' Statement, addressing the economic feasibility of launching the 787 without the pre-2007 aeronautics R&D subsidies, as well as the European Union's criticisms of the methodology employed by the Boeing engineers and the technical feasibility of their estimate. Finally, we consider whether Airbus' experience with the launch of the A350XWB is relevant to assessing the plausibility of the counterfactual analyses of whether, absent the pre-2007 aeronautics R&D subsidies, Boeing likely would have launched the 787 before or after the end of the implementation period.

9.152. In our evaluation of the arguments of the parties with regard to how the timing of Boeing's technology development in respect of the 787 would have been different absent the pre-2007 aeronautics R&D subsidies, an important issue is whether these arguments are consistent with the findings of the panel and the Appellate Body in the original proceeding as to the precise role of these subsidies in accelerating Boeing's technology development with respect to the 787. The European Union's affirmative case regarding the amount of additional time that it would have taken Boeing to develop and launch the 787 proceeds on the basis that the relevant counterfactual question concerns the amount of additional time that it would have taken an LCA manufacturer like Boeing to research, develop, produce, certify, and deliver the 787. If we were to formulate the counterfactual question in the terms proposed by the European Union, the estimate of the time we arrive at would also include time to undertake activities (internal R&D conducted by Boeing and its suppliers, production, certification and delivery) that were not found to have been effects of the pre-2007 aeronautics R&D subsidies in the original proceeding. The original panel did not consider that Boeing's technology development in relation to the 787 was solely the result of Boeing's subsidized participation in NASA and DOD aeronautics R&D programmes. Nor did it consider that the acceleration effect of the aeronautics R&D subsidies encompassed phases in the development of the 787 beyond its launch. Therefore, by formulating the counterfactual question in terms of the amount of additional time it would have taken Boeing to research, develop, produce, certify and deliver the 787 absent the subsidies, the European Union's estimate erroneously attributes to the pre-2007 aeronautics R&D subsidies aspects of the 787's development that were not found to have been accelerated by Boeing's participation in the relevant NASA and DOD aeronautics R&D programmes.[2914]

9.153. A further difficulty with respect to the European Union's arguments is that the European Union has not provided a clear statement on its behalf, or supporting evidence, that the 787 would not have launched until after the end of the implementation period. Its affirmative case instead has referred to an estimate of the amount of time required to develop technologies and design tools (more than ten years), an estimate of the extent of the delay in *delivering* the 787 (**[[HSBI]]**), and a statement that the launch would have been delayed "by a similar amount of time". The Panel is uncertain whether it should infer from the foregoing that it is the European Union's position that Boeing, absent the aeronautics R&D subsidies, would not have been able to launch the 787 before September 2012.[2915]

9.154. Turning to the United States' estimate, we first address the European Union's criticism that the United States has failed to address whether Boeing would have considered it economically rational and commercially feasible to have proceeded with the launch of the 787 at a point later than 2004 absent the pre-2007 aeronautics R&D subsidies. The European Union's criticism appears to rely in great part on statements by the original panel to the effect that there are large

engineers assert that the four panel fuselage section is considered "lower risk" compared to the 787's 360° barrel composite design (R. Wall and A. Rothman, "Airbus Says A350 Design Is 'Lower Risk' than Troubled 787", *Bloomberg*, 17 January 2013, (Exhibit EU-1168)). See also Statement of P. Gavin, T. Sommer, B. Domke, and D. Wacht, 8 November 2007, (Exhibit EU-33) (HSBI), para. 13.

[2914] See e.g. European Union's second written submission, paras. 975 and 1031-141; response to panel Question No. 45, paras. 320 and 330; and comments on United States' response to Panel question No. 47, para. 312.

[2915] See also European Union's comments on United States' response to Panel Question No. 47, para. 320 and fn 552.

disincentives inherent in conducting long-term, high-risk aeronautics R&D.[2916] The United States responds that the Boeing engineers' estimate is fully consistent with the panel's findings in the original proceeding. The United States argues that the original panel findings establish that the pre-2007 aeronautics R&D subsidies provided foundational knowledge relevant to Boeing's pre-launch R&D, which accelerated the launch of the 787.[2917] While noting the panel's finding that there are disincentives to undertake early-stage R&D, the United States maintains that those disincentives diminish over time, particularly as near-term commercial priorities arise. The United States further rejects the assertion that additional research undertaken absent the pre-2007 aeronautics R&D subsidies would have any impact on the 787 business case, as any pre-launch R&D projects would have been funded through Boeing's Independent R&D budget for commercial aircraft, and would have been treated as **[***]**.[2918]

9.155. While we agree with the original panel's general observations regarding disincentives inherent in conducting long-term, high-risk aeronautics R&D, we are also inclined to agree with the United States that those disincentives diminish as a practical matter as near-term commercial priorities arise. We are satisfied on the basis of the evidence before us and in light of the findings of the original panel that the commercial imperatives in the early 2000s were such that a critical commercial priority for Boeing was to develop a new, highly-efficient mid-sized, twin-aisle aircraft to replace the 767.[2919]

9.156. In this regard, we note that the original panel did not consider that Boeing was not capable, based on its engineering and technological capabilities unrelated to the pre-2007 aeronautics R&D subsidies, and those of its suppliers, of developing such an aircraft. Consistent with these considerations, the European Union itself does not argue that the 787 technologies in question "would *never* have existed" absent the pre-2007 aeronautics R&D subsidies.[2920] Indeed, we would emphasize that in the original proceeding, the European Communities argued that in the absence of the aeronautics R&D subsidies at issue, Boeing would not have been able to launch the 787 or a comparable aircraft *until mid-2006*.[2921]

9.157. As we have explained above, we are attempting to reach a reasonable estimate of how long it would have taken Boeing to undertake the subsidized R&D activities absent the pre-2007 aeronautics R&D subsidies and therefore, when the 787 would have launched absent those subsidies. There is no evidence before us, and no support in the findings in the original proceeding, that suggests the possibility that Boeing would have taken a commercial decision not to proceed with the development of the 787 with all of the technologies, absent the pre-2007 aeronautics R&D subsidies. To the extent that this is what the European Union means when it argues that additional costs, deferred revenues and additional risk arising from a delay in the launch of the 787 "would have reduced, or even undermined, the viability of the 787", we are unable to agree.

9.158. The European Union argues that it is for the United States to demonstrate that Boeing would have invested all of the necessary funds to conduct the necessary pre-launch R&D. We disagree, as we do not consider there is sufficient evidentiary support for the proposition that Boeing would not have proceeded to develop the 787 at all absent the pre-2007 aeronautics R&D

[2916] See European Union's second written submission, paras. 1014-1022 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 980 and 1009; and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1747 and 7.1760).

[2917] United States comments on European Union's response to Panel question No. 45, para. 293.

[2918] Boeing engineers submit that Boeing's independent R&D budget for commercial aircraft is **[***]** (See Boeing, Reply of Boeing engineers to EU and Airbus statements regarding the technologies and development of the 787, 737 MAX, and 77X, August 2013 (Boeing Engineers' Reply), (Exhibit USA-359) (BCI), paras. 10-12).

[2919] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1747. The panel indicated that it was satisfied based on the evidence that Boeing would have developed an LCA to replace the 767 and noted that the European Union did not object to this as it did not argue that Boeing would not have launched a new aircraft in the 200-300 seat LCA product market. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1774 and fn 3704). See also Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 9 and 10.

[2920] European Union's comments on United States' response to Panel question Nos. 153, para. 18, and 156, para. 70. (emphasis original)

[2921] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 4.280 ("{t}he European Communities argues that, had Boeing needed to develop the 787 using its own resources, the 787 would likely not have been launched any earlier than mid-2006, by which time Airbus would have been ready to compete with the A350XWB-800. Moreover, a non-subsidized 787, like the A350XWB-800, would have required a longer period before it could be delivered.")

subsidies. We note that, beyond generalized assertions, the European Union has not itself presented specific evidence of the additional costs or risks, or the amount of deferred revenues that would have resulted had Boeing not benefited from its participation in the NASA and DOD aeronautics R&D programmes. Nor is there any evidence before us concerning the 787 business case that would enable the Panel to undertake the type of financial assessment to determine the viability of the Boeing engineers' estimate.[2922] We note that the original panel did not accept arguments that Boeing lacked the financial resources to engage in the same commercial behaviour (including its product development behaviour) absent the subsidies at issue in the original proceeding, and the European Union in this proceeding does not attempt to substantiate any argument that Boeing would have lacked the financial resources to develop 787 absent the pre-2007 aeronautics R&D subsidies.

9.159. We next evaluate the European Union's argument that the United States has failed to demonstrate that it would have been technically feasible to launch the 787 in 2006 (rather than the actual launch in 2004) absent the pre-2007 aeronautics R&D subsidies, as the Boeing engineers conclude in the Boeing Engineers' Statement.

9.160. The European Union's argument involves criticisms of the Boeing engineers' estimate and is generally directed at: (a) the Boeing engineers' methodological approach (e.g. the Boeing engineers improperly estimate the time to *replicate* research even though Boeing would not have known which technologies were technically feasible, fail to account for the time to design, procure, produce, certify, and deliver the 787 and fail to account for Boeing's participation in all of the relevant NASA and DOD aeronautics R&D programmes); (b) the implausibility of the Boeing engineers' estimate in light of statements made by Boeing engineers outside the context of this dispute and nearly 3.5 years of delays faced by Boeing following the launch in 2004; and (c) the irrelevance of the United States' reference to the development of the A350XWB as a benchmark to confirm the Boeing engineers' estimate.[2923] We begin by addressing the European Union's criticisms of the Boeing engineers' methodology before turning to the relevance of statements by Boeing engineers and delays following the 787's launch, and the parties' disagreement regarding the relevance of the development of the A350XWB to our assessment.

9.161. We have already addressed above the flaw inherent in the European Union's argument that the counterfactual assessment of Boeing's technology development in relation to the 787 absent the pre-2007 aeronautics R&D subsidies should consider the entire development period of the 787 beyond its launch (including the time it would have taken Boeing to develop, mature, produce, and certify 787 technologies, and the time to integrate those components into a single aircraft, as the European Union argues), which approach we consider is inconsistent with the findings in the original proceeding and would risk attributing unsubsidized aspects of the 787's development to the effects of the subsidies.

9.162. The European Union's criticism of the Boeing engineers' methodology is otherwise highly-generalized in nature, and ultimately unpersuasive. The Boeing engineers seek to identify tasks that Boeing conducted under the challenged NASA and DOD aeronautics R&D programmes and then to assess the additional time that Boeing would have required to conduct that work using the internal resources of Boeing and its suppliers, i.e. they evaluate the time Boeing would have needed to conduct the tasks had Boeing not participated in the relevant aeronautics R&D programmes.[2924] The Boeing engineers identify aspects of the development of key technological areas of the 787, including tasks related to material choice and design for the fuselage, the construction of early wing box designs necessary to develop the 787 composite wing, the development of CFD design tools, and of prototypes of generators and motor controllers for the 787 more-electric system architecture.[2925] They derive their estimates by first identifying other, specific unsubsidized early-stage R&D activities in the pre-launch development phase for the 7E7/787 that they consider were either "comparable to, or more demanding" than, the type of tasks that Boeing conducted under the relevant aeronautics R&D programmes, and note the time that was required to conduct those unsubsidized R&D tasks. The Boeing engineers use the time

[2922] Having rejected the European Union's argument for these reasons, we do not consider it necessary to address further the manner in which Boeing allocates Independent R&D budget funds for pre-launch R&D projects.

[2923] European Union's response to Panel question No. 45, paras. 324-330 and 331-341.

[2924] See para. 9.136 above.

[2925] See Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 22-23, 30, and 32-34.

that was required to conduct those unsubsidized tasks as a proxy to estimate the time that Boeing would have needed in the counterfactual scenario to conduct the early-stage research that it actually conducted under the aeronautics R&D programmes. Under this counterfactual, the Boeing engineers estimate that Boeing would have undertaken the necessary R&D work, especially considering that Boeing was under commercial pressure to develop a highly-efficient, mid-sized twin-aisle aircraft to replace the 767.[2926]

9.163. The methodological approach of the Boeing engineers is in certain respects similar to the approach taken by the panel in the original proceeding. The original panel considered the ways and degree to which the NASA and DOD aeronautics R&D subsidies contributed to the development of particular 787 technologies in its evaluation of whether and the extent to which the aeronautics R&D subsidies contributed to the development and launch of the 787. The panel's findings do not reflect every aspect of the 787 development process.[2927] The panel stopped short of reaching conclusions as to how much of a competitive advantage the subsidies provided Boeing in the form of an accelerated launch, reasoning that it only needed to establish that Boeing would not have been able to launch the 787 as early as it did in 2004 absent the subsidies.

9.164. The European Union faults the Boeing engineers generally for failing to account for the slow pace of developmental research, and for otherwise overlooking the time required to learn from trial and error. In doing so, the European Union argues that the Boeing engineers' estimate fails to properly account for the additional upfront time to acquire knowledge and experience sufficient to determine which technologies it is feasible to research before measuring the time to conduct that research.[2928] Similarly, the European Union alleges that the Boeing engineers fail to precisely identify "the millions of components that Boeing developed for the 787"[2929], and provide a "comprehensive, component-by-component timeline"[2930] of all of the tasks that Boeing would have had to complete under every challenged NASA and DOD aeronautics R&D programme. Despite these criticisms, the European Union does not *itself* enumerate the specific additional tasks that Boeing should have reflected in its assessment, and importantly, the European Union does not provide evidence of how long Boeing would have needed to conduct any of the R&D tasks that were actually performed under the NASA and DOD aeronautics R&D programmes.[2931] The European Union has also failed to provide specific evidence to rebut the timing estimates that the Boeing engineers provide for the specific R&D tasks discussed in their statement.

[2926] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 7.

[2927] The panel's findings on the operation of the aeronautics R&D subsidies, in particular, refer to the importance of the design, building, and testing of a four-panel fuselage design, which Boeing performed under certain NASA aeronautics R&D programmes, to the development of the 787's 360° barrel fuselage design; and of Boeing's work designing, fabricating, testing, and demonstrating power management and distribution architectures, electrical actuators and starter/generators to Boeing's design and development of the more-electric architecture of the 787. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1751 and 7.1752).

[2928] For instance, the European Union refers to the "slower pace" of early-stage R&D, the need to account for trials and errors and the fact that unsuccessful research is valuable, and general references by Airbus engineers to the time it takes to introduce new materials and structural design solutions in LCA through a "building block approach". (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 68-87).

[2929] European Union's comments on United States' response to panel question No. 46, para. 307 (fn omitted). See also European Union's second written submission, paras. 1042-1047. For instance, Airbus engineers fault the Boeing engineers for failing to refer to the "many US government-supported programmes that followed ATCAS" that contributed to the full barrel structure that Boeing now uses for the 787 composite fuselage. (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 69).

[2930] European Union's comments on United States' response to panel question No. 46, para. 307. See also European Union's second written submission, paras. 1042-1047.

[2931] Rather than identify discrete tasks that were conducted under the NASA and DOD aeronautics R&D programmes, the European Union argues in this proceeding that the Boeing engineers omit many U.S. government-supported programmes, and otherwise fail to acknowledge the inter-dependence and complementarity of NASA programmes and the value of knowledge and experience that Boeing acquired through its participation. (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 68-87). The European Union has also resubmitted certain exhibits in this proceeding that were originally provided in the original proceeding. These include the statement by Airbus Engineer Dominik Wacht entitled "An Analysis of Selected NASA Research Programs and Their Impact on Boeing's Civil Aircraft Programs" in this proceeding. (See Statement of D. Wacht, Boeing, *An Analysis of Selected NASA Research Programs and Their Impact on Boeing's Civil Aircraft Programs*, November 2006, (Exhibit EU-32) (BCI)). The European Union has also submitted Exhibit EU-1664, which recapitulates the contribution of NASA and DOD aeronautics R&D programmes to the development process of the 787. These statements do not provide estimates of the time to undertake the specific R&D tasks that were alleged to have been performed under the NASA and DOD aeronautics R&D programmes.

9.165. It is the European Union's burden to establish that the pre-2007 aeronautics R&D subsidies continue to cause any of the alleged serious prejudice market phenomena in the post-implementation period. There are undoubtedly many complex steps and interactions involved in the launch of an LCA, especially one as technologically innovative and complex as the 787. The panel was clear in the original proceeding that it did not consider the technologies developed and applied to the 787 were solely attributable to the aeronautics R&D subsidies. Given this, there is no reason why this Panel should include in its estimate the development time in relation to tasks that were not attributable to the subsidies. It is difficult to accept the European Union's generalized criticisms of the United States' estimate in the absence of any clear estimate from the European Union as to how much additional time Boeing would have needed to conduct any of the R&D tasks that were actually performed under the NASA and DOD aeronautics R&D programmes.

9.166. For similar reasons, we are not persuaded by the European Union's argument that the Boeing engineers' estimate is contradicted by statements made outside the context of litigation and by the delays faced in the later stages of the 787's development. Statements made by Boeing engineers that the European Union has cited regarding the time that is required to develop and mature technologies are also highly generalized and do not speak to the contribution of the challenged aeronautics R&D subsidies in respect of Boeing's overall development of the 787.[2932] We similarly fail to see the relevance of approximately 3.5 years in delays *following* the launch of the 787 programme to our assessment of the additional time it would have taken Boeing to launch the 787 absent the subsidies. The fact that, in the real world, Boeing underestimated the nature of the technological challenges that would arise following the launch of the 787 does not speak to the additional time that Boeing would have needed to conclude the type of early-stage R&D tasks that were conducted under the challenged NASA and DOD aeronautics R&D programmes in order to have the confidence to proceed with the *launch* of the 787.[2933]

9.167. Finally, we address the question of whether Airbus' experience in developing the A350XWB is relevant to our analysis of the credibility of the Boeing engineers' estimate of the additional amount of time it would have taken Boeing to launch an aircraft that would have been technologically comparable to the 787 absent the pre-2007 aeronautics R&D subsidies.

9.168. According to the Airbus engineers[2934], the development time for the A350XWB should actually be understood as having begun in December 2004, at the time Airbus began development of the composite wing for the Original A350 family LCA model, which was itself based on the aluminium fuselage design of the A330. The Airbus engineers explain that the Original A350 was launched at that time in an attempt to compete with the newly-launched 787. Owing to the negative market reaction to the Original A350, Airbus undertook a "clean sheet" design of a completely new aircraft, the A350XWB, which retained the composite wing design that had been developed for the Original A350, but otherwise incorporated a four-panel carbon fibre reinforced plastic (CFRP) fuselage.[2935]

9.169. The A350XWB was launched in December 2006. According to the Airbus engineers, Airbus undertook a front-load design and product development process called DARE (Develop and

[2932] In its discussion of a 1999 NASA study of the average time taken for technologies to mature from initial concept to marketable product, based on NASA's defined technology readiness levels (the Peisen Study), the original panel noted the "considerable variability in the time it takes for technologies to mature, with average maturation times varying by technology type, by the technology's primary benefit or goal, and to a lesser extent, by the need for additional technologies or NASA testing for the successful maturation of the technology". (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, fn 3668). The European Union in this proceeding "recalls the agreement between the Parties, at the Panel meeting, that the *precise timeframes* set out in the {Peisen}study are of lesser relevance to the compliance Panel's assessment, because, as the original panel and the Appellate Body have themselves found, the study was based on a variety of different aircraft technologies with widely varying maturation times". (European Union's response to panel question No. 46, para. 362 (emphasis original)).

[2933] Other than a generalized notion that complex technical issues can take time to resolve, the European Union has not explained how difficulties arising from supplier outsourcing and supply chain issues are comparable to those arising in relation to the type of early-stage R&D that Boeing conducted pursuant to its participation in the NASA and R&D programmes.

[2934] See Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 49-56.

[2935] Airbus engineers explain that the A350XWB airframe incorporates 53% of composite structures in addition to the use of titanium and advanced aluminium alloys, constituting "{o}ver 70 percent of the A350XWB's weight-efficient airframe". (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 51).

Ramp-up Excellence)[2936], which involved **[[HSBI]]** of pre-launch research between **[[HSBI]]** in which Airbus assessed the feasibility of design options taking into account aircraft design maturity, ramp-up time, and fulfilment of contractual commitments to customers.[2937] Pursuant to this new development approach, Airbus undertook the development, maturation, production, and certification of the A350XWB up to its date of first flight in June 2013. Thus, the Airbus engineers assert that the period of time from launch until entry to service in 2014 is **[[HSBI]]**.[2938] The Airbus engineers assert that the full development time of the A350XWB is **[[HSBI]]**, taking into account the time from early stages of development of its composite wing (originally designed for the cancelled Original A350 family LCA model) through research, development, and production phases until the date of first flight and certification. The Airbus engineers state that the "nine years, from 2004-2013, to research, develop, produce and test the {composite} wing, *which is yet to be certified*. … stands in stark contrast to the 18 months Boeing engineers allege it would have taken them to 'develop a composite wing for the 787'".[2939]

9.170. As we have explained previously, what is relevant to our assessment is the additional time that Boeing would have required to conclude the relevant R&D tasks that were completed under the NASA and DOD aeronautics R&D subsidies, to allow Boeing to proceed with the launch of the 787 (and announcement of promised deliveries) had Boeing not participated in the NASA and DOD aeronautics R&D programmes. Therefore, to the extent an analysis of the development of the A350XWB is to provide a benchmark to determine the reasonableness of the United States' two-year estimate, our comparison should focus on the time required to conclude the pre-launch development of the two aircraft. This is consistent with the findings in the original proceeding, and avoids attributing to the subsidies aspects of the development that were not accelerated by Boeing's participation in the relevant NASA and DOD aeronautics R&D programmes.

9.171. The Boeing engineers have indicated that certain systems developed for the 787 were carried over from the Sonic Cruiser development programme.[2940] Aside from this, the Boeing engineers state that Boeing began intensive pre-launch R&D specifically related to the 787 in **[***]**.[2941] Boeing formally launched the 787 on 26 April 2004. The time from the start of intensive pre-launch R&D on the 787 (**[***]**) until formal launch (April 2004) was approximately **[***]**. In addition, the Boeing engineers assert that Boeing could have conducted all the necessary research to launch the 787 before the end of April 2006 (with promised deliveries in 2010) absent the pre-2007 aeronautics R&D subsidies. If we accept the Boeing engineers' estimate, the time from the start of intensive pre-launch R&D on the 787 (November 2002) until a counterfactual-adjusted, non-subsidized launch of the 787 (April 2006), would be approximately **[***]**.

9.172. Turning to the pre-launch development period for the A350XWB, the Airbus engineers state that Airbus began work on the composite wing design of the A350XWB (which originally formed part of the Original A350 design) in December 2004. According to the United States, Airbus began entering into customers commitments in July 2006[2942], although formal launch took place in December 2006.[2943] If we treat the starting point of pre-launch R&D for the A350XWB as the date when work began on the composite wing design for the A350XWB until its official launch in

[2936] Airbus engineers explain that DARE begins at early study phase and continues through design, procurement production, certification, delivery, in-service operation, and support. (Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 53 and accompanying slides).

[2937] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 52 and 53.

[2938] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 55.

[2939] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 56 (referring to Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 27). (emphasis original)

[2940] United States' second written submission, para. 805; and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 30 and 33 (referring to in-house work on generic TRANAIR and OVERFLOW CFD codes and preliminary work on a "more-electric" system architecture).

[2941] United States' second written submission, para. 805; and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 15 ("{i}n 2000, Boeing made the decision to undertake a new aircraft development program. While studying three concepts in parallel (i.e., the 747-X, Sonic Cruiser, and 7E7), we focused efforts on the Sonic Cruiser … In **[***]** Boeing decided to shift its new product development efforts away from the Sonic Cruiser to the 7E7 …").

[2942] United States' second written submission, paras. 801 and 806 (referring to "Singapore Airlines Orders 20 Airbus A350 XWB-900s and 9 Airbus A380s", *Business Wire*, 21 July 2006, (Exhibit USA-291)).

[2943] Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 51.

December 2006, Airbus spent approximately **[***]** on pre-launch R&D before formally offering the A350XWB to customers.[2944]

9.173. Therefore, the United States' estimate that the launch and delivery of the 787 would have been delayed by approximately two years absent the pre-2007 aeronautics R&D subsidies in fact results in a longer pre-launch development period for the 787 than the equivalent pre-launch development time-frame for the A350XWB. Adding two additional years for the counterfactual launch of an unsubsidized 787 in 2006, Boeing would have spent nearly **[***]** undertaking pre-launch R&D before launching the 787, compared to Airbus, which spent approximately **[***]** undertaking pre-launch R&D for the A350XWB.

9.174. In addition to its argument that the entire development period to the point of first delivery, and not just the pre-launch R&D period, is relevant to the counterfactual, the European Union offers a number of reasons why we should not rely on Airbus' experience in developing the A350XWB to evaluate the reasonableness of the United States' two-year estimate. The European Union argues that a direct comparison between the development times for the two aircraft cannot be made without adjustments, as the 787 and A350XWB have different composite fuselage designs, and the A350XWB does not employ a "more electric" system architecture like the 787 does.[2945]

9.175. We recognize that the 787 and A350XWB are two different aircraft in terms of their design and technical solutions. Indeed, the parties agree that the 787 and A350XWB are not identical.[2946] Accordingly, the development time for one aircraft is not perfectly indicative of the development time for the other. Nevertheless, despite the differences in their design and technical solutions, the fact that Airbus was able to proceed from a "clean sheet" design of the A350XWB to a point where it had sufficient confidence to undertake the formal launch of the A350XWB in a period of roughly **[***]**, having never previously produced an Airbus aircraft with a composite fuselage provides, "a general sense of what range of estimates is reasonable". To the extent that the 787's barrel composite fuselage design and "more electric" system architecture would have implications for the length of the aircraft development cycle, and in particular, the pre-launch development time, the United States' counterfactual allows for two additional years of pre-launch development, which

[2944] If we treated the point at which Airbus offered the A350XWB to Singapore Airlines in July 2006, the time between pre-launch R&D and offering would be shorter, approximately 1.5 years.

[2945] In addition, the European Union argues that the United States must account for any alleged effects of alleged subsidies on the A350XWB's development process, as the United States has characterized the development process of the A350XWB as subsidized in another dispute. (See European Union's response to Panel question No. 45, fn 407). The United States responds that *EC and certain member States – Large Civil Aircraft* is a separate and distinct dispute. Notwithstanding, it argues that the findings in that dispute were that, absent launch aid/member State financing subsidies, Airbus most likely would not have existed, there would be no Airbus aircraft on the market, and none of the sales that the subsidized Airbus made would have occurred. Therefore, the United States submits that, if it accounted for subsidies to the A350XWB, there would be no A350XWB timeline at all. (United States comments on European Union's response to Panel question No. 45, fn 474 (referring to Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1264)).

[2946] European Union's second written submission, paras. 1011-1013; response to panel question No. 45, paras. 318-330; Airbus Engineers' Response, (Exhibit EU-1014) (BCI), paras. 3, 14, and 47-62; United States' second written submission, para. 804. The European Communities in the original proceeding asserted that the A350XWB "offer{s} customers comparable, if not better, performance and operating characteristics as Boeing's 787". (EC response to panel question No. 87 of the panel questions in the original proceeding, para. 404, (Exhibit USA-290) (HSBI)). The European Union has also not demonstrated on the evidence that the 787's barrel composite fuselage or "more electric" systems architecture design has materially increased the 787's competitive appeal over the A350XWB. In addition, the performance of the A350XWB in the market is also consistent with the view that LCA customers consider the A350XWB to be in the same league as the 787 in respect of its mission capabilities, performance, efficiency, and price. We note that during the 2007-2015 time-period, Airbus obtained more orders of the A350XWB (780) than Boeing obtained for the 787 (749). (Ascend data base, Orders, data request as of 29 September 2015, (Exhibit EU-1658)). Setting aside 767 and A330 orders by customers, since its launch in 2004, Boeing has obtained 1097 orders of the 787 through 2015, while Airbus has obtained 781 orders of the A350XWB during the same period. This constitutes a difference of 316 total orders in Boeing's favour. For purposes of comparison, Boeing captured 348 orders of the 787 during the 2004-2006 time-period before Airbus launched the A350XWB.

means that the 787 pre-launch development period would exceed the A350XWB pre-launch development period by **[***]**.[2947]

9.176. The Panel has carefully evaluated the arguments of the parties and the evidence before it, including assessing the relevance and probity of the evidence. We have concluded that it is simply not plausible, and the European Union has failed to establish that, absent the aeronautics R&D subsidies, Boeing would not have launched the 787 by the end of the implementation period in September 2012. Although it is more difficult for us to confidently predict exactly when Boeing would have been able to launch the 787 absent the pre-2007 aeronautics R&D subsidies, we have concluded that it would be well before (i.e. at least several years before) the end of the implementation period.

9.177. In light of the foregoing, we conclude that the European Union has failed to demonstrate that the acceleration effect of the pre-2007 aeronautics R&D subsidies in relation to Boeing's technology development for the 787[2948], has continued into the post-implementation period. The European Union has therefore failed to demonstrate the existence of original subsidy technology effects of the pre-2007 aeronautics R&D subsidies in the post-implementation period.

9.3.2.1.2 Spill-over technology effects of the pre-2007 aeronautics R&D subsidies

9.178. In the preceding Section in this Report we evaluate the European Union's arguments that the original technology effects of the pre-2007 aeronautics R&D subsidies on Boeing's development of the LCA technologies applied to the 787 continue into the post-implementation period. In this Section, we address the European Union's arguments that the pre-2007 aeronautics R&D subsidies through their effects on Boeing's development of 787 technologies that have subsequently been adapted and applied to the more recently launched 787-9/10 and 777X models, giver rise to "spill-over technology effects" in respect of those aircraft in the post-implementation period.

9.179. Regarding the technological spill-over to the 787-9/10, the European Union argues that Boeing was able to "simply stretch" the 787-8 baseline model it launched in 2004 to develop the larger variants of the 787-family of LCA; the 787-9 and 787-10X models, based on the spill-over of knowledge and experience acquired through participation in the original NASA and DOD aeronautics R&D programmes.[2949] As regards the spill-over technology effects on the 777X, the European Union argues that Boeing's experience developing the CFRP composite wing of the 787 under the original NASA and DOD aeronautics R&D programmes enabled it to incorporate a next generation, scaled-up composite wing design on the 777X-family models. This wing configuration will allegedly use **[[HSBI]]**[2950] and will use close-coupling of the engine nacelles to the wing as derived from the 787 to attach larger-diameter engines, which contributes to a 10% fuel burn advantage over the 777-300ER while maintaining the necessary ground clearance.[2951] In addition,

[2947] The European Union additionally argues that the Boeing engineers' conclusion that Boeing would have launched the 787 before the end of April 2006 is further contradicted by the fact that Boeing required four years in the pre-launch phase to develop and test the relevant materials for the 777X, which involves similar design and development work for the 787. The European Union argues that, under the Boeing engineers' counterfactual, Boeing would have spent half as long to do similar design and development work for the 787. Moreover, the European Union contends that its estimate that the 777X pre-launch development phase was four years is "conservative" as it does not account for additional time Boeing spent on composites development for the 787, which is relevant to the 777X testing and design. (See Statement of B. Domke on the engineering-related aspects of the Panel's first set of questions, 4 December 2013, (Exhibit EU-1268) (BCI), paras. 18 and 19). The Panel disagrees that a simple comparison of the time spent on pre-launch R&D for the 787 and 777X programmes undermines the Boeing engineers' counterfactual estimate that, absent the aeronautics R&D subsidies, Boeing would have launched the 787 by April 2006. Commercial priorities differ between different aircraft programmes and these differing priorities can influence the point in time at which an aircraft manufacturer decides to launch an aircraft programme. Based on the European Union's estimate that it will take Boeing approximately ten years to move from the pre-launch phase for the 777X in 2010 until estimated first delivery in 2020, the overall development time for the 777X is comparable to that of the 787. (Statement of B. Domke on the engineering-related aspects of the Panel's first set of questions, 4 December 2013, (Exhibit EU-1268) (BCI), para. 20).

[2948] See paras. 9.126-9.128 above.

[2949] European Union's first written submission, paras. 995 and 1031-1037.

[2950] European Union's response to Panel question No. 165, para. 130 (referring to Boeing Presentation #23, (Exhibit EU-1674) (HSBI), slides 2 and 3).

[2951] European Union's response to Panel question No. 165, para. 131-136 (referring to Boeing Presentation #19, (Exhibit EU-1676) (HSBI)).

the European Union submits that **[[HSBI]]** have also "spilled-over" from the 787's development and will be incorporated on the 777X.[2952]

9.180. The United States argues that, as Boeing would have been able to develop the technologies to launch the 787 in 2006 and make it available as it currently is, even absent the pre-2007 aeronautics R&D subsidies, Boeing would have had ample time to leverage learning and developments from the 787 programme to incorporate those technologies onto other newer LCA developments, including the newer models of the 787 and the 777X. The United States maintains that the effect of the pre-2007 aeronautics R&D subsidies was to accelerate Boeing's development of technologies for the 787 in the early 2000s, not to create those technologies themselves such that, absent the pre-2007 aeronautics R&D subsidies, the 787 technologies would never have existed. Accordingly, the United States considers that there can be no spill-over technology effects.[2953]

9.181. The European Union's spill-over technology effects theory raises two issues. The first is whether, conceptually, the original technology effects of the pre-2007 aeronautics R&D subsidies could have "spilled-over" to other aircraft, bearing in mind that these effects pertain to the acceleration of Boeing's development of 787-related technologies and not to their existence as such. If so, the second issue is whether any of the alleged technologies identified by the European Union in relation to the 787-9/10 and 777X are sufficiently related or linked to the 787 technologies such that the latter bear a meaningful technological connection to the former.

9.182. As we explain in Section 9.3.2.1.1 above, the European Union has at times framed its technology effects arguments on the understanding that the effects of the pre-2007 aeronautics R&D subsidies that are said to continue into the post-implementation period are the 787 technologies themselves. These 787 technologies themselves spill-over into other technologies that are applied to newer Boeing LCA. To the extent that the European Union's spill-over technology effects arguments reflect this understanding of the effects of the pre-2007 aeronautics R&D subsidies, they are based on an incorrect understanding of the findings of the original panel and Appellate Body regarding the effects of the pre-2007 aeronautics R&D subsidies. The causation finding in the original proceeding was that the pre-2007 aeronautics R&D subsidies *accelerated* the development by Boeing of the 787 technologies. Therefore, the relevant question before us is whether, owing to that acceleration, any alleged so-called spill-over technologies applied to the 787-9/10 and 777X also came into existence earlier than would otherwise be the case, enabling an earlier than otherwise launch of these aircraft.

9.183. The United States argues that the acceleration effect of the pre-2007 aeronautics R&D subsidies was relatively short-lived, and to the extent that there is any technological continuity leading to spill-over onto newer Boeing LCA, the launch of the 787 in 2006 would have left ample time for Boeing to adapt technologies to the newer iterations of the 787, as well as the 777X LCA, ahead of their respective actual launches.[2954]

9.184. We conclude in Section 9.3.2.1.1 above that the European Union has failed to establish that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 after the end of the implementation period in September 2012. The end of the implementation period is more than eight years after Boeing actually launched the 787 in 2004, and is ten or more years after Boeing began pre-launch R&D for the development of the 787, following its decision to develop a replacement for the 767. Regardless of whether Boeing would have launched the 787 before the end of 2006 or somewhat later, we consider that an unsubsidized launch of the 787 would nevertheless have occurred multiple years in advance of the launch of the 787-10 (in June 2013) or the 777X (in November 2013).

[2952] European Union's first written submission, paras. 994 and 1061-1073; response to Panel question No. 165, paras. 128 and 129 (referring to Boeing Presentation #20, (Exhibit EU-1671) (HSBI), slides 3-5; Boeing Presentation #21, (Exhibit EU-1672) (HSBI), slide 5; and Boeing Presentation #22, (Exhibit EU-1673) (HSBI), slide 2). See also Statement of B. Domke, Airbus, *Impact of Selected NASA/DOD-supported 787 Technologies and Recent U.S. R&D Programmes on Boeing's Post-2007 LCA Developments*, March 2013 (Airbus Engineer's Statement), (Exhibit EU-31) (BCI), paras. 67 and 72-75.

[2953] See United States' first written submission, para. 708; and second written submission, para. 739.

[2954] See United States' first written submission, paras. 3, 682, 703-711, 735-738, and 782-799; second written submission, paras. 732-739, 743-849, 881-904, and 1187-1204; response to Panel question Nos. 45, 46, 47, 151, 152, 153, 156, 157, and 165; and comments on European Union's responses on Panel question Nos. 45, 46, 47, 151, 152, 153, 156, 157, and 165.

9.185. At the point in time of an unsubsidized 787 launch, Boeing would have undertaken all of the R&D necessary to launch 787 that the pre-2007 aeronautics R&D subsidies had enabled it to undertake. The question remains whether Boeing would have had sufficient time following the unsubsidized launch of the 787 to leverage its knowledge and experience to proceed with the respective launches of the 787-9/10 and 777X models. The onus is on the European Union to demonstrate that there would not have been sufficient time. However, the European Union has not provided credible evidence that the 787 technologies that Boeing would have developed absent the aeronautics R&D subsidies could not have been adapted and developed into spill-over technologies for the 787-9/10 or 777X in sufficient time to enable their respective launches in 2013.[2955]

9.186. Accordingly, we conclude that the European Union has failed to demonstrate the existence of so-called spill-over technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.[2956]

9.3.2.1.3 Sleeper technology effects of the pre-2007 aeronautics R&D subsidies

9.187. The European Union argues that Boeing is now applying certain other technologies to its newly developed LCA which were researched under the pre-2007 aeronautics R&D programmes. The European Union's sleeper technology[2957] allegations concern: (a) the application of Hybrid Laminar Flow Control (HLFC) technology on the 787-9/10X and 777X **[[HSBI]]** to increase fuel burn savings[2958]; (b) the use of Radio Frequency Identification (RFID) tagging to enhance the 787 Airplane Health Management system, including retrofitting RFID tagging on existing 787s, and installation on new 787-9/10X models[2959] and the 777X[2960]; and (c) the incorporation of a folding wing tip design on the 777X.[2961]

9.188. The European Union alleges that R&D conducted by Boeing under the NASA R&T Base and Aviation Safety programmes, as well as the DOD Aerospace Flight Dynamics/Vehicle Systems, Aerospace Avionics/Sensors, and Dual-Use Science and Technology RDT&E program elements, has enabled Boeing to develop HLFC technology for use on the 787-9 and 787-10X to reduce drag and increase fuel burn savings and payload range capability.[2962] It also contends that RFID tags to enhance the 787's Airplane Health Management systems, which were developed under NASA's R&T Base Program and a number of DOD RDT&E program elements will be used to store information such as parts maintenance logs to facilitate maintenance operations and enable paperless maintenance, which can result in **[[HSBI]]** and will "further increase the attractiveness, marketability and operating cost savings of the 787 LCA family".[2963] This particular sleeper technology will also be retrofitted on existing 787 models that have been delivered to customers.[2964]

[2955] As we explain in para. 9.182 above, this is because the European Union misconstrues the findings from the original proceeding as to the effects of the pre-2007 aeronautics R&D subsidies.

[2956] In light of this conclusion, we need not address the question whether any of the alleged technologies identified by the European Union in relation to the 787-10 and 777X are in some way related or linked to those on the 787.

[2957] These so-called sleeper technologies are described as "promising technologies … that {Boeing} chose not to apply to its LCA developments prior to 2007, including its 787, because the technologies did not yet display the necessary technology readiness or maturity". (European Union's first written submission, paras. 985, 993-995, 1025, and 1074). See also Airbus Engineer's Statement, (Exhibit EU-31) (BCI), section III.

[2958] European Union's first written submission, paras. 1079-1081; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 85-91.

[2959] European Union's first written submission, paras. 1085 and 1208; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 98-109.

[2960] European Union's response to Panel question No. 165, para. 126.

[2961] European Union's first written submission, paras. 1075-1078; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 92-97. We address in Section 9.3.2.1.4 the European Union's additional allegation that certain post-2006 aeronautics R&D subsidies have contributed to the development, maturation, validation or testing of technologies, including certain of the alleged sleeper technologies discussed herein. (See e.g. European Union's first written submission, paras. 1081, 1086, and 1087).

[2962] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 88-91.

[2963] European Union's first written submission, para. 1208; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 99 and 103.

[2964] European Union's first written submission, para. 1085; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 98-109. The European Union submits that Boeing is also validating RFID technology

9.189. The European Union argues that the HLFC and RFID sleeper technologies developed through the pre-2007 aeronautics R&D subsidies will also impact the 777X, citing recent evidence suggesting that Boeing plans to apply RFID to "all {s}erialized parts" of the 777X including aircraft structures[2965] and that Boeing is leveraging knowledge and experience acquired under the NASA Research and Technology Base (R&T Base) Program to develop and incorporate the drag reduction technology, HLFC, for the 777X's **[[HSBI]]** to achieve fuel-burn savings.[2966] Overall, the European Union contends that these technologies will contribute to "a promised 21 per cent improvement in per-seat fuel burn and a 16 per cent improvement in cash operating cost per-seat over today's 777-300ER"[2967] and will enable Boeing to launch and deliver the 777X "earlier than would otherwise have been possible".[2968] The European Union also contends that Boeing leveraged experience from its participation in DOD RDT&E program elements, including the Northrop Grumman A-6E Intruder fighter aircraft and A-6 Squadrons RDT&E program elements, to develop a folding wing tip for the 777X. This will allow the aircraft to achieve the same airport compatibility (International Civil Aviation Organization (ICAO) Code E category) as the current generation 777-300ER despite having the largest wingspan of all Boeing aircraft.[2969]

9.190. The United States disputes that the pre-2007 aeronautics R&D subsidies were the inspiration for, or assisted in integrating, the alleged technologies on new 787-9/10 and 777X models. It argues that Boeing would have had time to further develop any alleged sleeper technologies.[2970]

9.191. The United States responds that the use of HLFC on the 787-9 is "unrelated to NASA's R&T Base program" as Boeing did not rely on the Boeing/NASA 8-ft Cross Flow Suction experiment test results or FAA CLEEN testing when designing the 787 HLFC Tail System.[2971] As for the European Union's allegations regarding the use of RFID tags, the United States asserts that Boeing **[***]** RFID devices **[***]**. Notwithstanding the limited scope of deployment, the United States argues that Boeing developed this solution through work with its suppliers. Beyond application to passenger and crew safety equipment, **[***]**.[2972] It asserts that Boeing has opted not to incorporate HLFC on the 777X configuration.[2973] The United States says the 777X will not incorporate HLFC in its **[[HSBI]]**, as reflected in the firm 777X configuration. Instead, the 777X will feature a passive suction system, as well as a structural integration method that are both

under the 2012 ecoDemonstrator programme. (European Union's first written submission, paras. 1086 and 1087).

[2965] European Union's response to Panel question No. 165, para. 126 (citing A. Kumar, Associate Technical Fellow Boeing, "Boeing Plans on RFID Implementation", presentation, (Exhibit EU-1670), p. 2).

[2966] HLFC is a drag reduction technique that permits extending turbulent boundary layer flow in flow conditions that would otherwise result in turbulent flow. (See European Union's first written submission, paras. 1079-1081; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 85-91). The European Union submits that Boeing has also tested and validated HLFC as part of its work under the FAA CLEEN Program, demonstrating the "complementarity" and "cumulative effect" of Boeing's participation in NASA and DOD aeronautics R&D programmes. (European Union's first written submission, para. 1081).

[2967] European Union's first written submission, para. 1214. This also includes **[[HSBI]]**. (European Union's response to Panel question No. 165, para. 129)

[2968] European Union's first written submission, para. 1218.

[2969] European Union's first written submission, paras. 1075-1078; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 92-97.

[2970] United States' first written submission, paras. 708, 709, 782-784, and 804-811; second written submission, paras. 739 and 882-896; opening statement at the meeting with the Panel, para. 129; response to Panel question No. 165, para. 84; comments on European Union's response to Panel question No. 165, para. 166; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 76; Boeing Website, "737 Family – The New Boeing 737 MAX Family – Efficiency, Reliability, Passenger Appeal", available at <http://www.boeing.ch/commercial/737 MAX>, accessed 3 August 2016, (Exhibit EU-617); and Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit USA-392).

[2971] United States' comments on European Union's response to Panel question No. 165, para. 170 (referring to Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 31).

[2972] United States' first written submission, para. 801; and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 39. The United States additionally contends that Boeing's testing of RFID on the ecoDemonstrator 737-800 test bed was not under a CLEEN contract, and was not enabled by any other U.S. R&D programmes.

[2973] United States' response to Panel question No. 165, para. 83; and comments on European Union's response to Panel question No. 165, para. 170.

Boeing's own internally-funded inventions.[2974] Regardless, the United States contends that Boeing developed the 787 HLFC Tail System technology using internal funding and publicly available material that was simultaneously available to Airbus, including the publicly-disclosed results of U.S. Government-funded tests and projects. This does not involve Boeing/NASA 8-ft Cross Flow Suction experiment or testing under the FAA CLEEN Program.[2975]

9.192. The United States argues that RFID tagging was not enabled by the original NASA and DOD aeronautics R&D programmes, and in any event, will have limited application on the 787 passenger and crew safety equipment and will not be used on aircraft structural parts for the 787.[2976] The United States argues that any development of RFID technology that will be deployed on the 777X was not enabled by the original NASA and DOD aeronautics R&D programmes.[2977]

9.193. Finally, the United States rejects the allegations that the 777X folding wing tip design is similar in material respects to the folding wing used under A-6E Intruder fighter aircraft design.[2978] The United States argues that the European Union fails to show that effects from the NASA ACT, AST, High Speed Research (HSR) and Aviation Safety programmes, and DOD F-22, A-6, B-2, and Joint Strike Fighter RDT&E program elements, have enabled or contributed to Boeing's development of the 777X's composite wings, or hardware and software that is being implemented on the 777X.[2979] The United States contends that the 777X design is different from the A-6E folding wing in all material respects. This includes: **[***]** Moreover, the 777X folding wing tip design is asserted to differ markedly from that referred to as an initial design reference point, the 777-200.[2980] The 777X folding wing tip and A-6E folding wing share "overall design principles" to the same extent as all aircraft with a wing that fold upwards, such as the Hawker Sea Fury (introduced in 1945), Douglas Skyraider (introduced in 1946), de Havilland Sea Vixen (introduced in 1959), Blackburn Buccaneer (introduced in 1962), and the Russian Sukhoi SU-33 naval fighter aircraft.[2981]

9.194. With respect to the allegations regarding the application of HLFC on the 787-9/10X and the use of RFID tagging on the 787 and 777X, we note that the European Union cites advances Boeing made on health management technologies under NASA R&T Base Program and Aviation Safety Program dating back to 2000, and work under two contracts dating back to 1999 and 2000, and finally, work under a number of DOD RDT&E program elements.[2982] Similarly, the European Union refers to Boeing's study of HLFC while participating in NASA's R&T Base Program between 1992

[2974] United States' response to Panel question No. 165, para. 83 (referring to S. Trimble, "State Permit Reveals Boeing Plan to Hike 777X Output 25%", *Flightglobal*, 22 June 2015 (Exhibit USA-597)); comments on European Union's response to Panel question No. 165, para. 813.

[2975] United States' first written submission, paras. 802 and 813; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 31 and 83; and comments on European Union's response to Panel question No. 165, para. 170.

[2976] United States' first written submission, para. 801; and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 39. See also United States' comments on European Union's response to Panel question No. 165, para. 172.

[2977] United States' comments on European Union's response to Panel question No. 165, para. 172.

[2978] United States' first written submission, para. 812; second written submission, paras. 793, 900, and 901; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 80 and 81; and Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 41 and 42.

[2979] United States' first written submission, para. 809. In particular, in respect of DOD RDT&E program elements, the United States argues that the European Union has not demonstrated that the effects derive from assistance instruments that were the subject of the panel's findings, as opposed to procurement contracts. In any event, it contends that the F-22, A-6, B-2, and Joint Strike Fighter RDT&E program elements are "quite old". (United States' first written submission, para. 810; and second written submission, para. 898).

[2980] United States' first written submission, para. 812; second written submission, paras. 793 and 901; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 80 and 81; and Boeing Engineers' Reply, (Exhibit USA-359) (BCI), para. 42 (quoting Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 121).

[2981] United States' second written submission, para. 900; and Boeing Engineers' Reply, (Exhibit USA-359) (BCI), para. 41 (quoting Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 121).

[2982] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 106-109 (referring to Statement of D. Wacht, Boeing, *An Analysis of Selected NASA Research Programs and Their Impact on Boeing's Civil Aircraft Programs*, November 2006, (Exhibit EU-32) (BCI), p. 131; NASA Aviation Safety Budget Estimates, FY 2000-2007, (Exhibit EU-655), FY 2000, SAT 4.1-51; NASA Contract NAS1-00106 with The Boeing Company regarding Flight Critical Systems Research (2000), (Exhibit EU-656), section C.1, article 2.3; and NASA Contract NAS1-99070 with Boeing Commercial Airplane Group regarding Structures and Materials Technology for Aerospace Vehicles (25 January 1999), (Exhibit EU-657), at pp. 2-5).

and 1999.[2983] The limited references to the development and implementation of health monitoring technologies, on the one hand, and advances in the use of HLFC, on the other hand, in the materials cited by the European Union indicate that these technology areas were studied.

9.195. However, while Boeing may have studied these technologies under the identified projects, the European Union has failed to provide evidence showing how, or otherwise qualify the extent to which, these experiences contributed to Boeing's development of the ultimate technologies, or the extent to which the particular pre-2007 aeronautics R&D subsidies enabled an earlier launch of the relevant aircraft or a launch that would otherwise not have been possible. The evidence presented is not sufficient to enable us to assess the significance of the pre-2007 aeronautics R&D subsidies to the ultimate development of these technologies.[2984] We note, in addition, that the United States has argued that RFID will feature on the 787 in a limited capacity, and will not appear in the final design of the 777X, further calling into question the extent to which the pre-2007 aeronautics R&D subsidies can be said to have any impact on the technological development of these aircraft based on the so-called sleeper technologies theory.

9.196. With respect to the sleeper technologies emanating from various RDT&E program elements that allegedly facilitated Boeing's development of a folding wing tip for the 777X, we note that the European Union's arguments relate generally to work conducted under a number of DOD RDT&E program elements, particularly a DOD procurement contract under which Boeing allegedly conducted R&D work to improve the Northrop Grumman A-6E Intruder attack aircraft.[2985] There were no findings in the original proceeding that the payments and access to DOD facilities provided through procurement contracts funded under the original 23 RDT&E program elements involved specific subsidies to Boeing, nor are there any such findings in this proceeding. Accordingly, even assuming *arguendo* that the work that Boeing performed under that procurement contract provided the technological foundations for Boeing's subsequent development of the folding wing tip on the 777X (an evidentiary issue on which we express no view), the European Union's argument would in any case fail because it has not established an adequate link between that R&D and the pre-2007 aeronautics R&D subsidies.

9.197. Accordingly, we conclude that the European Union has failed to demonstrate the existence of sleeper technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

9.3.2.1.4 New technology effects of certain post-2006 aeronautics R&D subsidies

9.198. We recall that the European Union argues that the vast majority of the aeronautics R&D subsidies that came into existence *after* the original proceeding (the post-2006 aeronautics R&D subsidies), aggregated into one category, provide Boeing with additional cash flow because they lower Boeing's costs of licensing intellectual property rights to LCA technology, and of developing that technology, and therefore operate through a price causal mechanism.[2986] However, the European Union also points to a relatively small number of individual post-2006 aeronautics R&D subsidies which it argues operate through a technology causal mechanism (rather than a price causal mechanism) to contribute to Boeing's development of innovative technologies for its current LCA as well as the availability of "innovative future Boeing LCA".[2987] In this Section of the Report, we evaluate the European Union's arguments regarding this small number of post-2006 aeronautics R&D subsidies that are said to operate through a technology causal mechanism to affect the development of technologies for the 787-9/10 and 777X and thereby cause serious prejudice to the European Union's interests in the post-implementation period.

[2983] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 89 and 90 (referring to NASA R&T Base Budget Estimates FY 1991-FY 2004, (Exhibit EU-648), FY 1992, 1995, and 1999).

[2984] In this respect, in discussing the contribution of subsidies to Boeing's development of RFID, Airbus engineer Burkhard Domke indicates that Boeing's participation in NASA aeronautics R&D Base Program and DOD RDT&E program elements "likely benefit the RFID technology on Boeing's 787". (See Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 128).

[2985] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 94: "{t}he 777X folding wing tip is a product of Boeing's research and work performed under a DOD contract to improve the Northrop Grumman A-6E Intruder attack aircraft."

[2986] Section 9.4.3.4.3 below.

[2987] European Union's first written submission, para. 979.

9.199. The European Union argues that Boeing's participation in: NASA's Environmentally Responsible Aviation (ERA) Project; the Subsonic Fixed Wing Project and Supersonics Project under NASA's Fundamental Aeronautics Program; and the ecoDemonstrator programme pursuant to the Boeing CLEEN Agreement enabled Boeing's development of technologies for the 787-8/9/10 and 777X, thereby contributing to serious prejudice caused through those aircraft.[2988] The European Union also argues that certain post-2006 aeronautics R&D subsidies, including Boeing's research and testing of technologies not currently applied on Boeing LCA under NASA's Subsonic Fixed Wing Project and under DOD's RDT&E Air Force Aerospace Flight Dynamics/Aerospace Vehicle Technologies and Air Force Advanced materials for Weapons Systems program elements, cause a threat of serious prejudice in the form of "*future* technology effects".[2989]

9.200. The European Union argues that Boeing is conducting further R&D focused on validating RFID technology under the 2012 ecoDemonstrator programme for application on the 787, as well as additional testing and validation of HLFC under NASA's ERA and Subsonic Fixed Wing Projects.[2990] The European Union argues that these technologies help reduce overall aircraft fuel burn, increase payload range capability and lower maintenance costs.[2991] The European Union argues that Boeing is conducting testing and validation of HLFC for use on the 777X under the ecoDemonstrator programme, and NASA ERA and Subsonic Fixed Wing Projects to facilitate promised delivery in **[[HSBI]]**.[2992] The European Union submits that recent evidence demonstrates that Boeing plans to apply RFID to "all {s}erialized parts" of the 777X including aircraft structures.[2993] In addition, the European Union speculates that Boeing is also testing **[[HSBI]]**.[2994]

9.201. The United States argues that the European Union's allegations regarding the technological advances arising out of Boeing's post-2006 participation in NASA and DOD aeronautics R&D efforts and the Boeing CLEEN Agreement are without merit. In the case of post-2006 NASA-funded research, the United States argues that Boeing did not conduct the work as alleged, the research effort is not relevant or did not enable the particular technology as alleged. With respect to flight testing conducted pursuant to the Boeing CLEEN Agreement, the United States submits that "most ecoDemonstrator flight tests had no CLEEN involvement whatsoever"[2995] and thus any testing was not funded under the Boeing CLEEN Agreement *per se*. In situations where a particular technology may have been evaluated on flights that were partially funded by the FAA CLEEN Program, the United States considers the role of the FAA CLEEN Program was, at most, to contribute a portion of the fuel cost incurred on the test flight, which is not a "technology effect" pursuant to the European Union's own theory. The United States considers that the European Union's position that tests on the ecoDemonstrator test bed would not exist absent the FAA's funding cannot be supported.[2996] The United States requests the Panel to reject the European Union's argument

[2988] The European Union argues that, should the Panel disagree that any of these alleged post-2006 aeronautics R&D subsidies operate, at present, through a technology causal pathway, they should in the alternative be understood to operate through a price causal pathway. (See European Union's response to Panel question No. 43, fn 352).

[2989] European Union's second written submission, paras. 1051-1056. (emphasis original)

[2990] European Union's first written submission, para. 1103. See also Airbus Engineer's Statement, (Exhibit EU-31) (BCI), section IV.B.2; A. Washburn, Chief Technologist, NASA Environmentally Responsible Aviation Integrated Systems Research Program, "Drag Reduction Status and Plans – Laminar Flow and AFC", Presentation at AIAA Aero Sciences Meeting, 4-7 January 2011, (Exhibit EU-668), p. 10; J. Eppink and R. Wlezien, "Data Analysis for the NASA/Boeing Hybrid Laminar Flow Control Crossflow Experiment", Paper prepared for 41st AIAA Fluid Dynamicy Conference and Exhibit, Honolulu, 27-30 June 2011, (Exhibit EU-667); G. Norris, "787-9 Technology Revealed?", *Aviation Week*, Blog *Things with Wings*, 2 June 2011, (Exhibit EU-647); and G. Norris, "Boeing Ditches Drag Reduction System for 777X", *Aviation Week*, 10 May 2015, (Exhibit EU-1679).

[2991] European Union's response to Panel question No. 165, para. 137.

[2992] European Union's first written submission, paras. 1100-1102.

[2993] European Union's response to Panel question No. 165, para. 126 (citing A. Kumar, Associate Technical Fellow Boeing, "Boeing Plans on RFID Implementation", presentation, (Exhibit EU-1670), p. 2).

[2994] European Union's first written submission, para. 1101.

[2995] United States' second written submission, para. 892. According to the United States, the ecoDemonstrator test bed aircraft itself is a Boeing 737-800 that was not funded by the CLEEN Contract, most ecoDemonstrator flight tests had no CLEEN involvement whatsoever, and Boeing uses its own aircraft as flying test beds as a matter of course outside of U.S. Government R&D programmes. (Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 44-47).

[2996] United States' first written submission, paras. 800-808, 813, 975-978, 986-988, 989, and 990; second written submission, paras. 740, 792-794, 892, 897-903, 1194-1196, and 1201-1204.

regarding threat of future technology effects , as Articles 5 and 6 of the SCM Agreement do not permit a challenge to subsidies that are merely alleged to have effects in the future.[2997]

9.202. The United States argues that Boeing's development of HLFC for the 787-10 is unrelated to NASA's R&T Base Program, but instead, resulted from Boeing's use of "internal funding and publicly available material that was simultaneously available to Airbus, including the publicly disclosed results of U.S. Government-funded tests and projects".[2998] The United States argues that RFID technology that will feature on upcoming 787 and 777X models was not developed or otherwise tested pursuant to a Boeing CLEEN Agreement[2999] As discussed in paragraph 9.191, the United States has also indicated that the 777X will not incorporate HLFC in its design.

"Existing" new technology effects

9.203. We first address the European Union's argument that Boeing has received post-2006 support to continue research into HLFC through work conducted under NASA's Subsonic Fixed Wing Project and Supersonics Project, as well as under NASA's ERA Project. According to evidence on record, Boeing received funding of USD 572,390 at the end of 2007 to research laminar flow technology to develop a design for Supersonic Transport Aircraft through the use of CFD analysis.[3000] While asserting that the 777X will not incorporate HLFC in its design, the United States has not denied that HLFC technology has been incorporated on the 787-9, and potentially the 787-10X. Boeing's website indicates that HLFC is a feature of the 787-9.[3001] However, the European Union has provided no evidence as to the contribution of the research into HLFC conducted under NASA's Subsonic Fixed Wing Project, Supersonics Project or ERA Project to Boeing's overall decision to incorporate the HLFC technologies on the 787-9 and 787-10X, or the extent to which such research enabled an earlier launch of the 787-10X incorporating this technology, or a launch that would otherwise not have been possible. Finally, we turn to the European Union's allegations concerning Boeing's participation in the FAA CLEEN Program through the Boeing CLEEN Agreement in respect of the development of RFID technology and HLFC for use on the 787 and 777X.[3002] The European Union submits that "{a} major component of the CLEEN Program is flight testing … under the ecoDemonstrator Program"[3003], including testing that was done under a 2012 737-800 test bed and a 2013 787 test bed.[3004] The European Union describes testing on the ecoDemonstrator as "more generic" as it submits that "{a} technology tested on the ecoDemonstrator is … tested in a way that the results can be applied to many different LCA platforms".[3005] While noting this is a departure from Boeing's past practice of testing technologies

[2997] United States' second written submission, para. 850.

[2998] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 31. See also United States' comments on European Union's response to Panel question No. 165, para. 170.

[2999] United States' comments on European Union's response to Panel question No. 165, paras. 170-172 (referring to Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 39). See also Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 44-47.

[3000] NASA, *Research Opportunities in Aeronautics – 2006*, Supersonics Project 3 award announcement, (Exhibit EU-143), pp. 13 and 14; NASA task order NNL08AA36T, (Exhibit EU-151).

[3001] See <http://www.boeing.com/commercial/787/frontiers-787-9-october-2013>, accessed 3 August 2016.

[3002] We recall that the FAA launched the FAA CLEEN Program in 2010, awarding USD 125 million in five-year R&D agreements to Boeing, General Electric, Honeywell, Pratt & Whitney, and Rolls-Royce North America, on a 50% cost-sharing basis. Under its agreement with Boeing, the FAA CLEEN Program funds research to mature specified technologies, as well as testing and assessment of technologies through Boeing's ecoDemonstrator programme. See Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 111; FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 24 June 2010, (Exhibit EU-257); Boeing, Backgrounder, *2012 ecoDemonstrator Program Shows Boeing's Long Commitment to Environmentally Progressive Technology*, (June 2012), (Exhibit EU-261), pp. 1 and 2.

[3003] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 113 (referring to Boeing, Backgrounder, *2012 ecoDemonstrator Program Shows Boeing's Long Commitment to Environmentally Progressive Technology*, (June 2012), (Exhibit EU-261), p. 2).

[3004] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 114 and 118 (referring to FAA Fact Sheet, "Continuous Lower Energy, Emissions, and Noise (CLEEN) Program", 18 September 2012, (Exhibit EU-18)). As part of the 2012 series of tests on the 737-800 test bed, the European Union submits that Boeing flight tested the following technologies: (a) a variable area fan nozzle; (b) adaptive trailing edges; (c) "real-time, iPad based flight trajectory optimization and information management systems"; and (d) a method of electronically testing emergency equipment using RFID devices. (See Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 116 (referring to Boeing, Fact Sheet, "The Suit of Technologies on the eco Demonstrator Tests New Ways to Reduce Fuel Consumption and Community Noise", June 2012, (Exhibit EU-263))).

[3005] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 115.

on a platform-specific basis, the European Union acknowledges that the ecoDemonstrator programme operates adjunct to Boeing's continuing flight testing on a platform-specific basis.[3006] The Airbus engineers contend that Boeing conducted further testing and "refining" of HLFC[3007], and testing and "validat{ion}" of RFID technology.[3008]

9.204. Central to the original panel's finding that the NASA and DOD aeronautics R&D programmes before it caused serious prejudice was the conclusion that Boeing would not have been able to launch the 787 with the technologies it had and promise deliveries in the same time-frame, absent the contribution of the pre-2007 aeronautics R&D subsidies.[3009] In reaching this conclusion, the panel observed that the aeronautics R&D programmes before it were aimed at helping Boeing overcome large disincentives inherent in "long term, high risk" aeronautics R&D.[3010] Absent the contribution of the pre-2007 aeronautics R&D subsidies, the panel considered that Boeing would not have achieved the same gains "within the time frame and/or at the lower cost to itself that were the product of the aeronautics R&D subsidies".[3011]

9.205. We see an important difference between the type of early-stage, high risk R&D at issue in the original proceeding and the testing and assessment that takes place under Boeing's ecoDemonstrator programme, which receives funding under the FAA CLEEN Program. The European Union acknowledges that Boeing's work under the FAA CLEEN Program is primarily focused on flight testing, validation and refinement of technologies already in a late stage of development. It is not clear to us that Boeing would not have undertaken this work on its own. The European Union has, for instance, recognized that flight testing under the ecoDemonstrator test beds is supplemental to Boeing's testing. Finally, the European Union has not alleged that Boeing could not have funded this testing, absent the 50% cost contribution from the FAA CLEEN Program. Indeed, we would have difficulty accepting such an argument, given that the total amount of FAA funding to Boeing under the Boeing CLEEN Agreement accounts for only USD 27,986,056 during the 2010-2014 period.[3012]

9.206. Thus, we are not persuaded that Boeing's participation in the FAA CLEEN Program through the Boeing CLEEN Agreement materially helped Boeing to undertake R&D that it would not otherwise have undertaken, or to achieve the same gains that it would not otherwise have achieved within essentially the same time-frame. Rather, if anything, Boeing's participation in a cost-sharing arrangement such as the Boeing CLEEN Agreement merely lowered the cost at which Boeing was able to undertake research that it would have undertaken in any case. We therefore conclude that the European Union has failed to demonstrate that Boeing's participation in the FAA CLEEN Program, through the Boeing CLEEN Agreement, created or accelerated the development and creation of the RFID technology or HLFC technologies that are alleged to feature on the 787-9/10 and 777X models.[3013]

9.207. The European Union has therefore failed to demonstrate the existence of so-called new technology effects of the particular post-2006 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

[3006] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 115 (referring to G. Norris, "EcoDemonstrator Paves Technology Pathway To Future", *Aviation Week & Space Technology*, 8 October 2012, (Exhibit EU-662)).

[3007] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 124.

[3008] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 130.

[3009] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1775.

[3010] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1747.

[3011] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1759.

[3012] Specific contributions are listed in the Boeing CLEEN Agreement as USD 6,736,692 (2010), USD 6,511,448 (2011), USD 7,960,050 (2012), USD 6,494,751 (2013), and USD 283,115 (2014). These amounts are then adjusted to account for the actual funding provided by the FAA to Boeing based on modifications appended to the Boeing CLEEN Agreement. See Boeing CLEEN Agreement, (Exhibit EU-17), p. 3, modification 2 (providing USD 6,310,150 in 2011), modification 3 (providing an additional USD 201,298 in 2011), and modification 4 (providing USD 7,960,050 in 2012).

[3013] We recall, in the event we were to reject the European Union's argument that post-2006 R&D subsidies presently have technology effects, the European Union requests the Panel to find in the alternative, that the subsidies operate through a "price effects" causal pathway. (See European Union's response to Panel question No. 43, fn 352). We address whether the post-2006 funding and support provided to Boeing under the Boeing CLEEN Agreement alternatively operates through a price causal mechanism in Section 9.3.2.2.3 below.

"Future" new technology effects

9.208. The European Union separately argues that certain post-2006 aeronautics R&D subsidies cause a threat of serious prejudice in the form of "*future* technology effects".[3014] The European Union identifies the following research that Boeing is currently carrying out through the post-2006 aeronautics R&D subsidies which it considers will lead to the development of technologies for application on future generations of Boeing LCA, including possibly future twin-aisle aircraft:

a. NASA's Subsonic Fixed Wing Project related to the development of pultruded rod stitched efficient unitized structure (PRSEUS) composite materials that will have "significant implications for how future aircraft will be designed and repaired"[3015];

b. Boeing's research and testing of variable area fan nozzle (VAFN), RFID devices, adaptive trailing wing edge technology and a modified winglet, on the ecoDemonstrator testing component of the FAA CLEEN Program, to the extent not currently applied on the 737 MAX or other LCA models, nevertheless "generates important knowledge and experience that is applied to subsequent technology developments".[3016]

9.209. The United States argues that Articles 5 and 6 of the SCM Agreement do not permit a challenge to subsidies that are alleged to involve a threat of future technology effects and therefore requests the Panel to reject the European Union's argument in its entirety. Under Article 5 of the SCM Agreement, the United States argues that causation must be presently occurring even if the form of adverse effects is imminent or threatened rather than current serious prejudice. Hence, it submits that Article 5 uses the term "cause" in the present tense. According to the European Union's own argument, the causal mechanism is not presently operating, but is alleged to do so in the future. Otherwise, Article 5 would refer to subsidies that "cause or threaten to cause", which is not the case.[3017]

9.210. Article 5 of the SCM Agreement provides that "{n}o Member should cause … serious prejudice to the interests of another Member". Pursuant to footnote 13, the term "serious prejudice" should also be understood to include "threat of serious prejudice". Article 5, when read together with Articles 6.3(a) through (d), sets out the particular situations in which serious prejudice may arise; i.e. through displacement or impedance of imports, significant price undercutting, significant price suppression, significant price depression or significant lost sales, or an increase in the world market share of a particular subsidized primary product or commodity.

9.211. Articles 5 and 6 when read together allow for a finding of serious prejudice where a given subsidy is shown to presently cause a *threat of* (for example) significant lost sales or significant price suppression. In articulating a standard for determining the existence of a threat of serious prejudice under Article 6.3(c), the Appellate Body has explained that, "as with a determination of threat of material injury … it is reasonable to require that a determination of threat of serious prejudice 'be based on facts and not merely on allegation, conjecture or remote possibility'".[3018] Importantly, the threat of serious prejudice that results in a "'change in circumstances' … 'must be clearly foreseen and imminent'".[3019]

[3014] European Union's second written submission, paras. 1051-1056. (emphasis original)

[3015] European Union's second written submission, para. 1052. See also Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 141-159.

[3016] European Union's second written submission, para. 1055. The European Union has also referred to Boeing's "research into nonlinear modelling and non-destructive inspection for composite aircraft structures" under DOD RDT&E Air Force Aerospace Flight Dynamics/Aerospace Vehicle Technologies and Air Force Advanced materials for Weapons Systems program elements, related to the development of nonlinear modelling and non-destructive evaluation, which allow better methods to design fatigue-resistant structures and inspection of ageing aircraft structures. (See European Union's first written submission, paras. 1089 and 1104-1110; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 165-175).These have been found to be outside the scope of this proceeding.

[3017] United States' second written submission, para. 850.

[3018] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1171 (citing Article 15.7 of the SCM Agreement).

[3019] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1171 (citing Article 15.7 of the SCM Agreement).

9.212. We note that the European Union has raised a number of threat claims in this proceeding, including allegations of threats of significant price suppression, of significant lost sales, and of displacement and/or impedance.[3020] The European Union's claims in those contexts are based, *inter alia*, on facts related to Boeing's plans to bring specific Boeing aircraft to market (for instance, the 787-10X, 737 MAX, and 777X), and the threat of serious prejudice to competing Airbus LCA posed by the imminent launch of the particular Boeing aircraft, which has benefited from advanced technology that was allegedly enabled by the aeronautics R&D subsidies. The competitive harm is alleged to be clearly foreseen and imminent due to the technological advances and the anticipated arrival of the aircraft in the market.[3021]

9.213. We see significant differences between those allegations and the European Union's arguments concerning the alleged "future technology effects" of certain of the post-2006 aeronautics R&D subsidies. None of the relevant technologies that are the focus of the "future technology effects" allegations are alleged to have been applied to twin-aisle or other Boeing LCA to date.[3022] At most, the European Union alleges that there are "encouraging findings"[3023] that a technology such as PRSEUS *could* be employed on LCA in the future.

9.214. In our view, the prospect for potential application of technologies to future but as yet non-existent LCA models is too remote and speculative to constitute a threat of serious prejudice, within the meaning of Article 5(c) and footnote 13 and Article 6.3 of the SCM Agreement. The possibility alone is inconclusive as to whether competitive harm to the European Union's interests is imminent, as it is contingent on whether the technologies will ultimately be applied to LCA that may ultimately be launched at some future point in time. Accordingly, we are not persuaded that the European Union has demonstrated that certain post-2006 aeronautics R&D subsidies enable Boeing to develop technologies that will be applied to future generations of Boeing LCA and in that sense, give rise to a threat of serious prejudice in the form of "future technology effects".

Conclusion

9.215. In sum, we conclude that the European Union has failed to demonstrate that:

a. research conducted on HLFC under the Fundamental Aeronautics Supersonics Project and Subsonic Fixed Wing Project and NASA's ERA Project contributed to Boeing's overall development of technologies, or otherwise enabled an earlier launch of the 787-9/10; or that

b. Boeing's participation in the FAA CLEEN Program, through the Boeing CLEEN Agreement, created or accelerated the creation of HLFC or RFID technologies relevant to the 787-9/10X, or 777X.

9.216. We therefore find that the European Union has failed to demonstrate the existence of so-called new technology effects of the particular post-2006 aeronautics R&D subsidies in respect of the 787-9/10 and 777X in the post-implementation period.[3024]

9.217. We also reject the European Union's argument that research Boeing conducted under NASA's Subsonic Fixed Wing Project related to the development of PRSEUS composite materials or Boeing's research and testing of VAFN, RFID devices, adaptive trailing wing edge technology or a modified winglet can give rise to "future technology effects" that could constitute a threat of serious prejudice, within the meaning of Article 5(c) and footnote 13 and Article 6.3 of the SCM Agreement.

[3020] Sections 9.3 and 9.4 below.
[3021] See e.g. European Union's first written submission, paras. 1316 and 1328.
[3022] European Union's first written submission, para. 1105; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 144, 167, and 174.
[3023] European Union's second written submission, para. 1052.
[3024] Given the European Union's request that if we reject its arguments that the particular, identified post-2006 aeronautics R&D subsidies operate through a technology causal mechanism, we consider in the alternative whether they should be analysed as operating through a price causal mechanism, we will address whether these particular, identified post-2006 aeronautics R&D subsidies operate through a price causal mechanism in Section 9.3.2.2.3 below.

9.3.2.1.5 Summary of conclusions on whether the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB in the post-implementation period, through a technology causal mechanism

9.218. Based on the foregoing analysis, the Panel concludes as follows:

a. The European Union has failed to demonstrate the existence of original subsidy technology effects of the pre-2007 aeronautics R&D subsidies in the post-implementation period.

b. The European Union has failed to demonstrate the existence of spill-over technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

c. The European Union has failed to demonstrate the existence of sleeper technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

d. The European Union has failed to demonstrate the existence of new technology effects of the particular post-2006 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

9.219. Because the European Union has failed to demonstrate any effect of the pre-2007 aeronautics R&D subsidies, or of the particular, identified post-2006 aeronautics R&D subsidies, on Boeing's product development in respect of the 787 or 777X in the post-implementation period, the possibility of any consequent impact of those subsidies on sales and prices of the A350XWB does not arise.[3025] Accordingly, there is no basis on which the pre-2007 aeronautics R&D subsidies or the particular, identified post-2006 aeronautics R&D subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a technology causal mechanism.

9.220. **The Panel therefore finds that the European Union has failed to establish that the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a technology causal mechanism.**

9.3.2.1.6 The A350XWB as a competitive response to the 787

9.221. One further issue of potential relevance to the issue of the effects of the pre-2007 aeronautics R&D subsidies on sales and prices of the A350XWB concerns the notion that Airbus would only have launched the A350XWB as a *response* to Boeing's launch of the 787, meaning that the subsidies in question would logically not have affected the terms of competition between the 787 and A350XWB. In its third set of questions to the parties, the Panel asked both parties whether they agreed that, had Boeing not launched the 787 in 2004, Airbus would not have sought to develop the Original A350 versions and launched the A350XWB when it did, and how (if at all) such factors should be taken into account in any counterfactual analysis of the hypothetical position that would have existed in the post-implementation period, absent the pre-2007 aeronautics R&D subsidies.[3026]

9.222. The European Union responded that, had Boeing not launched the 787 in 2004, Airbus would not have sought to develop the Original A350 versions, and Airbus would have continued to enjoy the market leadership of its A330.[3027] The European Union also responded that the timing of the launch of the A350XWB, in the scenario in which Boeing had not launched the 787 by 2004,

[3025] See paras. 9.116 and 9.122 above.
[3026] Panel question No. 152 to the parties.
[3027] European Union's response to Panel question No. 152, para. 9; comments on the United States' response to Panel question No. 152, para. 10.

"would have depended, in large part, on the timing of a counterfactual launch of the 787".[3028] The European Union says that it is "possible" that, with a significantly delayed launch of the 787, Airbus would have launched the A350XWB in response to demands from airlines for significantly more fuel-efficient aircraft, and would have done so irrespective of whether Boeing had already launched the 787 or was close to launching it.[3029]

9.223. The European Union argues that these considerations are not, however, particularly relevant to the Panel's assessment of the existence of adverse effects in the post-implementation period. Absent the pre-2007 aeronautics R&D subsidies and their impact on Boeing's launch of the 787, Airbus would have continued to enjoy the market leadership of the A330. The European Union submits that, *alternatively*, "in a counterfactual in which Airbus had decided to launch the A350XWB by 24 September 2012, the pre-2007 aeronautics R&D subsidies would also be a genuine and substantial cause of significantly lower EU LCA sales and prices – in this case, of the A350XWB."[3030] Moreover, even under a counterfactual in which the launch of the A350XWB was only ever a competitive *response* to the launch of the 787, the terms of competition between the 787 and A350XWB in this counterfactual scenario "would be altered by the fact that the portion of the 787's order book that the European Union did not challenge as 'lost sales' would still need to be produced, pushing out further the delivery positions that Boeing could offer in competitive sales campaigns against the A350XWB."[3031]

9.224. The United States responded to the Panel's question by agreeing with the European Union that, had Boeing not launched the 787 in 2004, Airbus would not have sought to develop the Original A350 versions when it did. However, the United States additionally considers that Airbus would not have developed the A350XWB when it did.[3032] The United States argues that the underlying findings of the original panel and evidence available demonstrate that the A350XWB was developed as a *reaction* to the 787, and therefore, would not have been launched when it was in 2006 if Boeing had not launched the 787 in 2004.[3033] The United States considers that Airbus' focus on developing and devoting resources to the A380, and the market dominance of the A330 in the period prior to the launch of the 787 in 2004, "each independently meant that the A350XWB would only have been launched in response to the 787".[3034]

9.225. For the United States, the fact that the A350XWB was a "reaction to, and contingent upon" the launch of the 787 must be considered in the appropriate counterfactual.[3035] According to the United States, if the 787 had launched in 2006 (instead of 2004), the delay in the 787's launch would have caused a delay in the launch of the A350XWB. Although the pre-2007 aeronautics R&D subsidies accelerated the launch of the 787, they did not alter the terms of competition between the 787 and the A350XWB after launch. Any acceleration effect of the pre-2007 aeronautics R&D subsidies would have no effect on competition between the 787 and A350XWB.[3036] This means that there is no basis to find a genuine and substantial causal link with respect to the pre-2007 aeronautics R&D subsidies, or the portions of the post-2006 aeronautics R&D subsidies erroneously alleged to have technology effects.[3037]

9.226. The original panel was satisfied that the technological and operating cost advantages of the 787 over the A330 and Original A350, as well as its scheduled delivery dates commencing in 2008, caused Airbus to lose significant sales of the A330 and Original A350 between 2004 and

[3028] European Union's response to Panel question No. 152, para. 9; comments on the United States' response to Panel question No. 152, para. 12.
[3029] European Union's comments on the United States' response to Panel question No. 152, para. 12.
[3030] European Union's response to Panel question No. 152, para. 10.
[3031] European Union's comments on the United States' response to Panel question No. 152, para. 14.
[3032] United States' response to Panel question No. 152, para. 9.
[3033] United States' response to Panel question No. 152, para. 10. "Airbus had no plans, and no reason, to launch an aircraft like the A350XWB absent the market entry of the 787 because the A330 held a dominant market position and because Airbus had dedicated its focus and resources to its priority of launching the technologically innovative and extraordinarily complex A380." The United States refers to Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 4.334 and 7.1777, and Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1024, in support of its position.
[3034] United States' response to Panel question No. 152, para. 13. "{t}he A350XWB would never have entered a market in which its sales and prices were not affected by the market presence of the 787." (United States' comments in the European Union's response to Panel question No. 152, paras. 8 and 14).
[3035] United States' response to Panel question No. 152, para. 14.
[3036] United States' comments in the European Union's response to Panel question No. 152, para. 14.
[3037] United States' response to Panel question No. 152, para. 14.

2006, and significantly suppressed the prices of those aircraft during that period.[3038] We note that Airbus' Christian Scherer, in a statement in the original proceeding which is referred to by the panel, said that at the beginning of 2004, Airbus had expected that the A330 would remain the standard for the 200-300 seat LCA product market *for at least another ten years of deliveries*.[3039] This statement is consistent with evidence before the Panel that in early 2004 Airbus was focused on developing the A380 and did not anticipate a major updating of the A330 for *several years*.[3040]

9.227. The United States' point is that, this being the case, the A350XWB would only ever have been launched as a competitive response to the 787. This means that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 at a later date, the A350XWB would have been launched in response, and the competitive dynamics between the 787 and A350XW would be essentially no different than they currently are, only with a delay. In other words, only the sales and prices of the A330 and Original A350 are logically capable of being adversely affected by the pre-2007 aeronautics R&D subsidies. The European Union concedes that the timing of the counterfactual launch of the A350XWB does depend "in part" on the timing of the counterfactual launch of the 787.[3041] This seems to be because it considers that, had the counterfactual launch of the 787 been sufficiently delayed, Airbus would in any event have responded to market demand from airlines for more fuel-efficient aircraft, irrespective of whether Boeing had launched the 787, or was close to launching it.[3042]

9.228. We conclude in Sections 9.3.2.1.1 through 9.3.2.1.5 above that the European Union has failed to demonstrate that the pre-2007 aeronautics R&D subsidies, operating through a technology causal mechanism, affect Boeing's development of technologies for the 787 and 777X in the post-implementation period. It is therefore not necessary that we evaluate whether, in any case, technology effects of the pre-2007 aeronautics R&D subsidies could logically have impacted only the A330 and Original A350 because, as a factual matter, the launch of the A350XWB was a competitive response to the launch of the 787. However, we consider that if it were necessary for the Panel to address this issue, the European Union would have needed to demonstrate that, absent the pre-2007 aeronautics R&D subsidies, Boeing would not have been able to launch the 787 until after Airbus had independently decided to launch a new wide-body aircraft such as the A350XWB in response to customer demand for more fuel efficient aircraft. We find this scenario unlikely on the basis of the evidence before us. We note that in 2004, 14 years had already lapsed since Boeing's launch of a new, wide-body LCA (its newest wide-body LCA model until that time was the 777, which had been launched in 1990).[3043] Moreover, Airbus would likely have been occupied with flight testing and first deliveries of the A380 until at least mid-2007[3044] and Airbus had anticipated in 2004 that the A330-200 would be the market leader for at least another ten years of deliveries.

9.3.2.2 Whether the post-2006 subsidies benefiting the 787 and 777X cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB in the post-implementation period, through a price causal mechanism

9.229. As stated in paragraph 9.114 above, the European Union argues that certain unwithdrawn subsidies that the United States grants and maintains since the end of the reference period in the original proceeding (the post-2006 subsidies), through their effects on Boeing's pricing of the 787 and 777X, *considered collectively* with the effects of certain aeronautics R&D subsidies on Boeing's technology developments for the 787 and 777X, cause various forms of serious prejudice with respect to the A350XWB in the post-implementation period.

9.230. In Section 9.3.2.1 above, however, the Panel concludes that the European Union has failed to demonstrate the existence of the various forms of technology effects of the aeronautics R&D

[3038] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1780.
[3039] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1777.
[3040] M. Pilling, "Dream Date", *Airline Business*, 1 April 2004, (Exhibit USA-579), p. 6.
[3041] European Union's comments on the United States' response to Panel question No. 152, para. 12.
[3042] European Union's comments on the United States' response to Panel question No. 152, para. 12.
[3043] M. Pilling, "Dream Date", *Airline Business*, 1 April 2004, (Exhibit USA-579), p. 6.
[3044] Airbus had planned flight tests of the A380 in 2005 with first entry into service in 2006, however, it did not make its first A380 delivery until October 2007. C. Daily, "Boeing Commits to Building 7E7 After ANA Order", *Global News Wire*, 27 April, 2004, (Exhibit USA-578); and T. Enders, "Je n'exclus aucun recours en justice pour protéger la reputation d'Airbus", *Le Monde*, 13 October 2007, (Exhibit USA-580).

subsidies in question in respect of the 787 and 777X in the post-implementation period. The consequence of this conclusion is that the technological advancements (including the timing of delivery) of the 787 and 777X in the post-implementation period cannot be considered to be an effect of the aeronautics R&D subsidies operating through a technology causal mechanism. This means that the remaining aspect of the European Union's main serious prejudice case regarding the A350XWB that the Panel must evaluate is whether the post-2006 subsidies that are said to operate through a price causal mechanism cause the alleged forms of serious prejudice in respect of the A350XWB in the post-implementation period.

9.231. In this Section, we therefore consider whether the post-2006 subsidies, through their effects on Boeing's prices of the 787 and 777X, are a *genuine and substantial cause* of significant lost sales of the A350XWB (as well as a threat of significant lost sales), impedance and a threat of impedance of A350XWB imports (to the United States) and of exports (to certain third country markets), and significant price suppression of the A350XWB (as well as a threat of significant price suppression) in the post-implementation period.

9.232. In Section 9.2.2, we explain that we will conduct our analysis of the effects of the post-2006 subsidies that operate through a price causal mechanism by aggregating them into one of three categories: (a) tied tax subsidies, comprising the Washington State and City of Everett B&O tax rate reductions, the receipt of which is contingent on the sale of particular Boeing LCA on a per-unit basis; (b) state and local cash flow subsidies, comprising incentives provided by state and municipal authorities in Washington and South Carolina related to Boeing's LCA production activities in those jurisdictions, but which are not related to LCA production or sale on a per-unit basis; and (c) post-2006 aeronautics R&D subsidies, which the European Union argues enable Boeing to use intellectual property to continue developing technologies for future LCA without having to pay licence fees.

9.233. We therefore begin our analysis of the effects of the post-2006 subsidies by asking whether the European Union has demonstrated that the tied tax category of subsidies affected Boeing's 787 and 777X pricing and thereby affected A350XWB sales and prices in the post-implementation period, such that these subsidies are a genuine and substantial cause of any of the serious prejudice phenomena alleged by the European Union with respect to the A350XWB in the post-implementation period. We then undertake the same analysis for the state and local cash flow subsidies, and for the post-2006 aeronautics R&D subsidies.

9.3.2.2.1 The tied tax subsidies

9.234. The tied tax subsidies alleged to benefit the 787 (in respect of 787s produced in the State of Washington)[3045] and 777X are the Washington State and City of Everett B&O tax rate reductions. These B&O tax rate reductions reduce the B&O taxes in respect of revenues earned from the sales of LCA attributable to Washington State (or the City of Everett, as the case may be), lowering Boeing's taxes and thereby increasing Boeing's after-tax profits.[3046]

9.235. According to the European Union, the structure, design, and operation of the tied tax subsidies impact Boeing's LCA prices by lowering the taxes and fees paid by Boeing on the production and sale of each individual LCA, thus directly reducing the marginal unit cost of each LCA by an amount equal to the subsidy.[3047] The causal link between the subsidies and adverse effects is "confirmed and amplified" by the magnitude of the subsidies which, when taken collectively, is "large by any reasonable measure".[3048] The European Union emphasizes that the Appellate Body in the original proceeding considered that the tied tax subsidies were a genuine and substantial cause of adverse effects on the basis of their close nexus to the subsidized Boeing LCA, their design, structure and operation, their magnitude[3049], and the conditions of competition

[3045] We recall that Boeing also produces 787s in the State of South Carolina; accordingly, revenues associated with sales of 787s produced in South Carolina are not subject to B&O taxes in the State of Washington.

[3046] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1807.

[3047] European Union's first written submission, paras. 1136-1146.

[3048] European Union's first written submission, paras. 1147 and 1173; second written submission, para. 1077.

[3049] The European Union uses the term "magnitude" differently from the way the European Communities used this term in the original proceeding. In the original proceeding, the European Communities used "magnitude" to refer to the total subsidy amounts that it alleged Boeing had received between 1989 and 2006:

in the LCA industry.[3050] The European Union argues that nothing has occurred since the original proceeding to alter the Appellate Body's reasoning and conclusion.[3051]

9.236. The European Union argues generally that the impact of the U.S. subsidies on Boeing's LCA prices (including the tied tax subsidies) is concentrated on LCA sales campaigns in which the competition is very intense.[3052] According to the European Union, Airbus and Boeing, as "two rational and profit-maximising LCA manufacturers", have "no incentive to offer price concessions that go beyond what is necessary to win a deal".[3053]

9.237. The United States does not dispute that subsidies that are tied to the production and sale of particular LCA are capable of affecting Boeing's pricing behaviour.[3054] Rather, its primary argument with respect to the tied tax subsidies is that their magnitude is too small to cause adverse effects.[3055] The United States notes that the adverse effects findings with respect to the tied tax subsidies in the original proceeding included the FSC/ETI subsidies, which have since been withdrawn. The original panel's finding that the Washington State and City of Everett B&O tax rate reductions were not large enough on their own to cause adverse effects still stands, and the European Union has not demonstrated otherwise in this proceeding.

9.238. Both parties appear to accept that, as per-unit subsidies, the tied tax subsidies by their nature, are capable of affecting Boeing's pricing behaviour.[3056] The United States describes the tied tax subsidies at issue in the original proceeding (and therefore also in this proceeding) as subsidies "that did affect Boeing's marginal cost of producing current LCA alleged to be subsidized".[3057] It distinguishes the effects on pricing of tied tax subsidies from the effects on pricing of untied, non-recurring subsidies on the basis that tied tax subsidies correspond directly with sales, such that fluctuations in total sales volumes do not affect the calculus regarding the profitability of a particular sale:

> {I}n terms of effects on pricing behaviour, the more of a specific LCA a manufacturer produces, the less significant an untied non-recurring subsidy generally is on a per-aircraft basis. The significance (if any) of a tied tax subsidy does not become diluted in the same way when production volumes increase.[3058]

9.239. This is also broadly consistent with the positions of the parties in the original proceeding and the conclusion of the panel that the FSC/ETI subsidies and the B&O tax subsidies, by lowering the taxes incurred in connection with sales of LCA, have a far more direct and immediate relationship to aircraft prices and sales than other subsidies at issue in the dispute.[3059] The Appellate Body also emphasized the nature of the tied tax subsidies as tied to the production and sale of LCA on a per-unit basis in reaching the conclusion that subsidies of this nature were

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(a) allocated over time (with the addition of an "opportunity benefit" reflecting the time value of the funds to Boeing); and (b) allocated across the various models of Boeing LCA. In this proceeding, the European Union refers to "magnitude" as meaning simply the "amount" of the subsidies.

[3050] European Union's first written submission, paras. 1123-1153.

[3051] European Union's first written submission, paras. 1141-1146.

[3052] See e.g. European Union's response to Panel question No. 164, paras. 116 and 117: "{i}n this context, the European Union also recalls that the price-sensitive nature of sales involving closely competing products, the existence of large economies of scale, the role of switching cost and incumbency, as well as Boeing's exercise of market power each *facilitate Boeing's targeted use of its subsidies in highly competitive sales* to charge lower prices for its LCA than it would otherwise have charged." (emphasis added)

[3053] European Union's response to Panel question No. 164, para. 111. The European Union's argument posits that the tied tax subsidies do not affect Boeing's prices in a generalized manner, e.g. by affecting the calculus of the pricing floor below which Boeing cannot sell an aircraft without affecting the overall profitability of the LCA programme, but are accumulated for strategic use in highly price-sensitive sales campaigns.

[3054] United States' first written submission, paras. 727 and 728.

[3055] United States' first written submission, paras. 719-721; second written submission, paras. 863-865.

[3056] We note that Korea, in contrast, argues that the fact that a subsidy is ostensibly "tied" to a particular investment does not necessarily mean that the subsidy actually caused an investment that would not otherwise have occurred. Korea notes that money is fungible. In order to overcome the "presumption that money is fungible", a complaining party would need to produce extensive evidence of the recipient's financial capabilities and investment plans in the absence of the alleged subsidies that demonstrates that the investments would not otherwise have occurred. (Korea's third-party submission, paras. 26-28).

[3057] United States' comments on the European Union's response to Panel question No. 169, para. 27.

[3058] United States' first written submission, para. 728.

[3059] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1806 and 7.1807.

capable of affecting Boeing's pricing decisions with respect to the relevant LCA.[3060] As the Appellate Body explained:

> All other things being equal, a firm provided with a subsidy that is tied to production or sale enjoys the ability to lower its price while nevertheless achieving the same profit margin. In effect, the subsidy *enhances the firm's ability* to lower its prices in order to obtain a sale, notwithstanding that the outcome of any given sale, and the importance of price to that outcome, will still be dictated by the prevailing competitive conditions, including the market power and the pricing strategies of the participants, in a particular market.[3061]

9.240. However, the Appellate Body also appeared to consider that, while the tied tax subsidies provided Boeing with the ability and incentive to lower its LCA prices, the competitive dynamics of the LCA markets are such that it would not actually do so unless it faced the commercial imperative, in the particular circumstances of the sales campaign. That imperative would arise only where the LCA sales campaigns were particularly price-sensitive, in the sense that Boeing was under pressure to reduce its prices, and there were *no other non-price factors* that explain the outcome of the sales campaign:

> In this dispute, we consider that, given the nature of the tied tax subsidies, their operation over time, their magnitude, and the competitive conditions in the LCA market, Boeing had both the ability and incentive to use the tied tax subsidies to lower prices, and that there was a *substantial likelihood that this occurred* in sales campaigns that were particularly competitive and sensitive in terms of price. On that basis, *where it can be established* that Boeing was under particular pressure to reduce its prices in order to secure LCA sales in particular sales campaigns, and there are no other non-price factors that explain Boeing's success in obtaining the sale or suppressing Airbus' pricing, we can conclude that the subsidies contributed in a genuine and substantial way to the lowering of Boeing's prices.[3062]

9.241. The Appellate Body therefore considered that it would only be possible to reach a conclusion regarding the causal connection between the tied tax subsidies and Boeing's LCA pricing by examining the sales campaign evidence to determine whether, in each sales campaign, Boeing was under particular pressure to reduce its prices in order to secure the LCA sale and there were no other non-price factors that explained Boeing's success in obtaining the sale.[3063]

9.242. As this is a compliance proceeding, we consider it appropriate to follow the same approach to analysing the effects of the tied tax subsidies on Boeing's LCA pricing as taken by the Appellate Body in the original proceeding. We therefore evaluate the sales campaign evidence submitted in relation to sales campaigns won by Boeing with the 787 and/or 777X at the expense of the A350XWB, and which the European Union argues are evidence of significant lost sales of the A350XWB, as well as of impedance of A350XWB imports and exports, and significant price suppression of the A350XWB, in each case an effect of the U.S. subsidies. In doing so, we determine whether the campaigns are "price-sensitive", in the sense that Boeing appeared to be under particular pressure to reduce its prices in order to secure the sales, and there are no non-price factors that explain Boeing's success in obtaining the sale; e.g. Boeing's incumbency and a

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[3060] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1252-1260.

[3061] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1260. (emphasis added)

[3062] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1260. (emphasis added) This is confirmed by the Appellate Body's reiteration of this aspect of its reasoning regarding the effects of the tied tax subsidies on Boeing's prices, somewhat later in the Report:

> We have explained that, due to the nature of the tied tax subsidies, their operation over time, their magnitude, and the competitive conditions in the LCA market, Boeing had both the ability and the incentive to use the tied tax subsidies to lower prices, and that there was a substantial likelihood that this occurred in sales campaigns that were particularly competitive and sensitive in terms of price. We have also explained that, *where it can be established that Boeing was under particular pressure to reduce its prices in order to win an LCA sale in a particular sales campaign, and there were no other non-price factors that explain Boeing's success in obtaining the sale, we can conclude that the subsidies contributed in a genuine and substantial way to the lowering of Boeing's prices*.

(Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1271 (emphasis added))

[3063] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 1261-1265.

consequent switching cost advantage, the suitability of the aircraft for the particular customer's requirements (in terms of range, capacity and delivery availability).

9.243. Where Boeing appeared to be under particular pressure to reduce its prices in order to secure the sale, and there are no non-price factors that explain Boeing's success in obtaining the sale, we will conclude that the tied tax subsidies contributed in a genuine and substantial way to the lowering of Boeing's LCA prices. As a second step in the analysis, we will then address the United States' argument concerning the relative insignificance of the magnitudes of the tied tax subsidies by determining whether, on the basis of the evidence before us, the magnitudes were enough to "cover the margin of victory between the final net prices of Boeing and Airbus"[3064] such that the tied tax subsidies, through their effects on Boeing's prices, are a genuine and substantial cause of lost sales of the A350XWB.

The sales campaigns involving competition between the 787 and 777X and A350XWB

9.244. The European Union submits evidence for certain LCA sales campaigns involving the 787 and/or 777X and the A350XWB that occurred between 2007 and 2015, and were won, in whole or in part, by Boeing. It argues that these LCA sales campaigns are highly competitive, and instances where Boeing did in fact act on its incentive, enabled by its receipt of subsidies, to offer pricing concessions that enabled it to secure the sale at the expense of Airbus.[3065] The basic details concerning the outcomes of these sales campaigns are set forth in Table 9 and Table 10 below:

[3064] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), para. 1263.

[3065] The European Union must establish the existence of adverse effects in the post-implementation period (i.e. the period after 23 September 2012), and therefore the only LCA sales campaigns that can be evidence of the existence of significant lost sales are those that took place after the end of the implementation period. Nevertheless, we also examine the evidence related to sales campaigns that took place in the 2007-2012 period on the basis that we should examine the entirety of the evidence submitted by the parties to the extent that it may be relevant to identifying the particular pricing dynamic between Boeing and Airbus.

Table 9: Alleged lost sales of the A350XWB between 2007-2012 due to the 787

Sales campaigns alleged to demonstrate lost sales of the A350XWB due to subsidies to the 787 between 2007-2012[3066]		
Campaign	**Number of 787 orders**	**Number (if any) of A350XWB orders[3067]**
Qatar Airways 2007	30 787-8	80 A350XWB, consisting of 20 A350XWB-800 and 40 A350XWB-900, converted from Original A350, and 20 additional A350XWB-1000
British Airways 2007	24 787, consisting of 8 787-8 and 16 787-9, plus 18 options and 10 purchase rights	None
LAN Airlines 2007	26 787-8/787-9	None
ILFC 2007	52 787	None
Virgin Atlantic Airways 2007	15 787-9, plus 8 options and 20 purchase rights	None
Etihad Airways 2008 and 2011	41 787-9	12 A350XWB
United Airlines 2010	25 787-8, plus 50 options	25 A350XWB-900
United Airlines 2012 ("Follow-on")	5 787, consisting of 4 787-9 and 1 787-8	None
United Airlines 2013	20 787-10, 10 of which were an up-conversion of the 2010 order of 787-8	35 A350XWB-1000, consisting of conversion of 2010 order to 25 A350XWB-1000 and additional 10 A350XWB-1000
Air France-KLM 2011	25 787-9	25 A350XWB-900
Aeromexico 2012	6 787-9	None

The data in Table 9 above is supported by the following evidence: Qatar Airways Press Release, "Qatar Airways Orders 60 Boeing 787-8 Dreamliners And 32 Boeing 777s", 11 November 2007, (Exhibit EU-769); Airbus Press Release, "Qatar Airways confirms order for 80 A350 XWBs and adds three A380s", 18 June 2007, (Exhibit EU-771); Boeing Press Release, "Boeing and British Airways Finalize Contract for 24 787 Dreamliners", 27 December 2007, (Exhibit EU-782); Boeing Press Release, "Boeing, LAN Airlines Complete Deal for 32 787s and Four 777 Freighters", 5 November 2007, (Exhibit EU-793); Boeing Press Release, "Boeing, ILFC Announce Order for 63 Airplanes", 19 June 2007, (Exhibit EU-800); Boeing Press Release, "Boeing and Virgin Atlantic Announce 787 Order, Environmental Partnership", 24 April 2007, (Exhibit EU-807); Boeing Press Release, "Boeing, Etihad Airways Announce Twin-Aisle Order", 14 July 2008, (Exhibit EU-814); "Etihad Cancels Orders for Four 787 Dreamliners", *Aviation and Aerospace*, 4 March 2011, (Exhibit EU-825); "Etihad Cuts Dreamliner Order in Swap for Boeing 777s", *Arabian Business*, 8 March 2011, (Exhibit EU-826); Boeing Press Release, "Boeing, Etihad Airways Announce Order for 10 787-9 Dreamliners", 12 December 2011, (Exhibit EU-831); "Etihad splits massive order between Boeing, Airbus", *USA Today*, 15 July 2008, (Exhibit EU-827); Boeing Press Release, "Boeing and United Airlines Finalize 787 Order", 25 February 2010, (Exhibit EU-838); Airbus Press Release, "United Signs Firm Order for 25 A350 XWB aircraft", 10 March 2010, (Exhibit EU-839); Boeing website, Orders and Deliveries – 2012 Orders Detail, available at <http://www.boeing.com/commercial/#/orders-deliveries>, last accessed 7 August 2016, (Exhibit EU-1566); E. Russell, "United quietly upped 787 number prior to Paris order", *Flightglobal*, 1 July 2013, (Exhibit EU-1567); Boeing Press Release, "Boeing Launches New Commercial Airplane; Highlights Innovation, Efficiency and Partnerships at 2013 Paris Air Show", 20 June 2013, (Exhibit EU-1184); Boeing website, Orders and Deliveries – 2013 Net Orders, through 9 July 2013, available at <http://www.boeing.com/commercial/#/orders-deliveries>, accessed 7 August 2016, (Exhibit EU-1185);

[3066] The European Union had also challenged the Air Berlin 2007 and Lion Air 2012 twin-aisle campaigns, but does not pursue its arguments in relation to these campaigns on account of both airlines having cancelled their 787 orders. (European Union's response to Panel question No. 169, para. 328).

[3067] Certain of the campaigns cited by the European Union are "split campaigns", meaning that the customer ordered both Airbus and Boeing LCA. In many cases, the split order was a strategic decision by the airline that involved maximizing early delivery positions, and maintaining a competitive balance between the two airframe manufacturers.

United Press Release, "United is North American launch customer for Boeing 787-10", 18 June 2013, (Exhibit EU-1186); Airbus Press Release, "Airbus, United Airlines reach agreement for 35 A350-1000 aircraft", 20 June 2013, (Exhibit EU-1187); Boeing Press Release, "Boeing, Air France-KLM Finalize Order for 25 787s", 10 January 2012, (Exhibit EU-850); Airbus Press Release, "Air France-KLM confirms future with A350XWB", 19 June 2013, (Exhibit EU-1209); Airbus Press Release, "Air France-KLM to acquire up to 60 A350 XWBs", 16 September 2011, (Exhibit EU-852); and Boeing Press Release, "Boeing, Aeromexico Finalize 787 Dreamliner Order", 27 December 2012, (Exhibit EU-872).

Table 10: Alleged lost sales of the A350XWB in the post-implementation period due to the 787 and 777X

Post-implementation period sales campaigns alleged to demonstrate lost sales of the A350XWB due to subsidies to the 787 and 777X[3068]			
Campaign	**Number of 787 orders**	**Number of 777 orders**	**Number (if any) of A350XWB orders**
Singapore Airlines 2013	30 787-10X	None	30 A350XWB-900, plus 20 options
British Airways 2013	12 787-10, plus firming up options for 6 787-8/787-9	None	18 A350XWB-1000
Emirates 2013	None	150 777X, consisting of 35 777-8X and 115 777-9X, plus 50 purchase rights	None
Qatar Airways 2013	None	50 777-9X, plus 50 purchase rights	None
Cathay Pacific 2013	None	21 777-9X	None
Lufthansa 2013	None	34 777-9X, plus 30 options	25 A350XWB-900, plus 30 options
Etihad Airways 2013	30 787-10, plus 12 options and purchase rights	25 777X, consisting of 17 777-9X and 8 777-8X, plus 12 options and purchase rights	50 A350XWB, consisting of 40 A350XWB-900 and 10 A350XWB-1000
ANA 2014	14 787-9	20 777-9X	None
ANA 2015 ("Follow-on")	3 787-10	None	None
Ethiopian Airlines 2015	6 787-8	None	None

The data in Table 10 above is supported by the following evidence: Boeing Press Release, "Boeing Launches New Commercial Airplane; Highlights Innovation, Efficiency and Partnerships at 2013 Paris Air Show", 20 June 2013, (Exhibit EU-1184); Singapore Airlines Press Release, "SIA To Order US$17 Billion Worth Of Aircraft From Airbus & Boeing", 30 May 2013, (Exhibit EU-1195); Airbus Press Release, "Singapore Airlines finalises order for up to 50 more A350 XWBs", 19 June 2013, (Exhibit EU-1196); "Boeing Launches 787-10 with $30 Billion of Orders", *Reuters*, 20 June 2013, (Exhibit EU-1245); "BA Set to Order 10 Boeing 787-10s", *Reuters*, 16 June 2013, (Exhibit EU-1246); "British Airways Confirms Order for 787-10 Series", *British Airways News*, 18 June 2013, (Exhibit EU-1247); "BA Orders 18 New Airbus A350 Aircraft", *The Independent*, 23 April 2013, (Exhibit EU-1249); Emirates Press Release, "Emirates announces largest-ever aircraft order", 17 November 2013, (Exhibit EU-1317); Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders and Commitments", 17 November 2013, (Exhibit EU-1299); Qatar Airways Press Release, "Qatar Airways Announces the Purchase of 50 Boeing 777-9X", 17 November 2013, (Exhibit EU-1316); Boeing Press Release, "Boeing Launches 777X with Record-Breaking Orders, Strengthens Partnerships in the Middle East at the 2013 Dubai Airshow", 20 November 2013, (Exhibit EU-1454); Boeing Press Release, "Boeing, Qatar Airways Finalize Order for 50 777Xs", 16 July 2014, (Exhibit EU-1469); Boeing Press Release, "Boeing and Cathay Pacific Airways Announce Order for 21 777-9Xs", 20 December 2013, (Exhibit EU-1443); Cathay Pacific Press Release, "Cathay Pacific places order for 21 Boeing 777-9X aircraft – Deliveries to commence in 2021",

[3068] The 777X was launched in November 2013, so is only relevant for sales campaigns in the post-implementation period.

20 December 2013, (Exhibit EU-1444); M. Steen, "Lufthansa makes record German investment", *Financial Times*, 19 September 2013, (Exhibit EU-1493); Lufthansa Press Release, "Modern, quiet and environmentally efficient: Lufthansa Group orders 59 ultra-modern wide-body Boeing 777-9X and Airbus A350-900 aircraft", 19 September 2013, (Exhibit EU-1313); "Lufthansa Splits $19 Billion Order Between Airbus, Boeing", *Bloomberg*, 19 September 2013, (Exhibit EU-1510); Airbus Press Release, "Lufthansa, Airbus' biggest airline customer, commits to up to 55 A350s", 19 September 2013, (Exhibit EU-1494); Boeing Press Release, "Boeing, Etihad Airways Kick Off Dubai Airshow with 777X, 787-10 Orders", 17 November 2013, (Exhibit EU-1314); Etihad Airways Press Release, "Etihad Airways announces largest ever fleet order to enable accelerated growth strategy", 17 November 2013, (Exhibit EU-1315); Airbus Press Release, "Etihad Airways orders 50 A350 XWB, 36 A320neo and one A330-200F", 17 November 2013, (Exhibit EU-1548); Boeing Press Release, "Boeing Statement on ANA Widebody Airplane Selection", 27 March 2014, (Exhibit EU-1445); ANA Holdings News, "ANA Group to place record 1700 billion yen order for 70 new aircraft", 27 March 2014, (Exhibit EU-1446); Boeing Press Release, "Boeing Announces ANA's Commitment to Become Newest 787-10 Customer", 30 January 2015, (Exhibit EU-1569); and Boeing Press Release, "Boeing, Ethiopian Airlines Announce Order for Six 787 Dreamliners", 17 June 2015, (Exhibit EU-1570).

9.245. The evidence submitted in relation to the above sales campaigns includes information concerning: (a) the aircraft that were offered by Airbus and Boeing, respectively, to customers in each sales campaign; (b) the particular needs of the airline customer in terms of factors such as seating capacity, range and routes to be served, efficiency and delivery dates; and (c) the dynamics of the pricing interactions between Airbus and Boeing, on the one hand, and the airline or leasing company customer on the other, through repeated rounds of negotiations.[3069] This evidence allows the Panel to assess with a high degree of confidence the extent to which the sales campaigns were or were not particularly price-sensitive. While some of the sales campaign evidence is in the public domain (e.g. the information concerning the terms of the aircraft orders ultimately placed by the customer), a significant part of it, especially as regards the internal Airbus communications describing Airbus' sales strategies and evaluating the competing Airbus and Boeing offers, is designated as HSBI. Therefore, in the discussion that follows, we provide a non-confidential summary of our conclusions regarding the extent to which the outcomes of the individual sales campaigns appeared to turn on the price of the competing offers. Our detailed confidential analysis of the evidence pertaining to each sales campaign is set forth in an HSBI Appendix to the Report.[3070]

9.246. We conclude that there is insufficient evidence to demonstrate that any of the LCA sales campaigns involving the 787 and/or 777X and the A350XWB set forth in Table 9 and Table 10 above were price-sensitive in the sense used by the Appellate Body (i.e. where Boeing was under particular pressure to reduce its prices in order to secure LCA sales in particular sales campaigns, and there were no other non-price factors that explain Boeing's success in obtaining the sale).

9.247. Indeed, while pricing was discussed in certain of the sales campaigns, other factors featured more prominently in the airline customers' evaluations of the suitability of the competing offers as well as in the evidence on record explaining the reasons why the airline customer chose to order Boeing aircraft over the competing Airbus offering. In the majority of the LCA sales campaigns, a critical factor was the airline customers' preference for the delivery availability of the Boeing aircraft over the competing Airbus aircraft, in light of the airlines' particular fleet replacement requirements as well as Airbus' delivery delays.[3071] The choice of engine manufacturer

[3069] The exception is with respect the Ethiopian Airlines 2015 campaign. The European Union argues that this sales campaign constitutes a significant lost sale of the A350XWB (European Union's response to Panel question No. 169, paras. 326 and 327), but does not submit any evidence regarding the details of this sales campaign. Indeed, the only evidence submitted by the European Union in connection with this sales campaign is a Boeing press release announcing the order for six 787s. There is no evidence before the Panel that Airbus even participated in a competition to offer alternative Airbus aircraft in this sales campaign. The European Union argues that this order "also" results in the threat of further significant lost sales having materialized (European Union's response to Panel question No. 169, para. 326 and fn 592, referring to its first written submission, para. 1342). This paragraph of the European Union's first written submission is part of the European Union's "parallel" argument, wherein it describes the threat of significant lost sales arising out of the 2005 Ethiopian Airlines lost sale of the Original A350 as arising from the possibility that Ethiopian Airlines may continue to retain options and purchase rights which "flow" from the 2005 order. However, there is no evidence before the Panel that the 2015 Ethiopian Airlines order arose out of an exercise of options or purchase rights relating to its 2005 order.

[3070] See HSBI Appendix (Appendix 2).

[3071] See HSBI Appendix (Appendix 2) paras. 10, 22, 29, 39, 48, 60, 76-79, 89, and 111. In the case of one "split order", the airline customer's needs could not be met by one aircraft manufacturer, meaning that neither Airbus nor Boeing would have been awarded the whole order. (See HSBI Appendix (Appendix 2), para. 89).

was another major factor in many campaigns.[3072] In some cases, the main factors taken into account by the airline customers included performance evaluations of the various aircraft, perceived strengths and weaknesses in performance guarantees and/or the level of confidence in the maturity of the aircraft programme.[3073] In other campaigns, the size of the aircraft, given the airlines' planned range and capacity needs, also featured as a decisive factor.[3074] Incumbency was a vital factor in some cases, with the airline customer either striving for the advantages generated by fleet commonality, or being averse to the risks brought on by fleet diversity.[3075] We conclude that in each case there are factors other than price that explain why Airbus either did not win the sale, or in the case of the sales campaigns that involved "split orders", i.e. where the customer ordered a number of Airbus and Boeing aircraft, why there is no basis to conclude that Boeing's pricing resulted in the customer awarding a greater portion of the order to Boeing (and thus a lesser portion to Airbus) than would otherwise have been the case.[3076]

9.248. Our review of the sales campaign evidence is also consistent with other evidence suggesting that the competing models of Airbus and Boeing wide-body, twin-aisle LCA are less substitutable, and therefore that the outcomes of sales campaigns involving these aircraft will depend to a greater extent on non-price factors. Airlines will generally purchase a particular LCA model for the purpose of performing a specific route, or mission. A significant factor in determining the outcome of an LCA sales campaign therefore, is the suitability of the aircraft for a particular route or routes: the more suitable an aircraft for the routes in question, the lower its direct operating costs over time.[3077] The suitability of an aircraft to perform a particular route depends on its seating, cargo, payload and range capability, which are largely determined by an aircraft's number of seats, its MTOW and its range when at maximum passenger capacity.[3078] The closer the suitability of two aircraft for a particular route or routes, the greater their substitutability. The wide-body, twin-aisle models of Boeing (787 and 777X) and Airbus (A330 and A350XWB) display a far greater variance in terms of seating capacity, maximum take-off weight, and range than their narrow-body, single-aisle counterparts (A320neo and A320ceo, and 737 MAX and 737NG).

9.249. Our conclusion is further supported by the statement of Airbus' Executive Vice President, Strategy & Marketing, Kiran Rao, who opines that **[[HSBI]]**.[3079] It is also consistent with the conclusions drawn by the Appellate Body in the original proceeding suggesting that sales campaigns involving single-aisle LCA are likely to be more price-sensitive than those involving wide-body, twin-aisle LCA:

> {P}rice appears to have been a particularly important consideration in the 100-200 seat LCA market due to the relatively high degree of substitutability between the A320 and the 737NG, and the fact that many customers within this product market are low-cost carriers, which are particularly price-sensitive.[3080]

9.250. On the basis of the foregoing evaluation of the nature of the tied tax subsidies, the conditions of competition in the wide-body, twin-aisle LCA markets, and the evidence pertaining to sales campaigns involving the 787 and 777X and A350XWB between 2007 and 2015, we conclude that the European Union has failed to demonstrate that these campaigns were price-sensitive, in the sense that Boeing was under particular pressure to reduce its prices in order to secure LCA sales in the particular sales campaigns, and there were no other non-price factors that explain Boeing's success in obtaining the sale. While the tied tax subsidies may have given Boeing the

[3072] See HSBI Appendix (Appendix 2), paras. 29, 60, 89, 133, 149, and 158.
[3073] See HSBI Appendix (Appendix 2), paras. 10, 22, 76-79, 89, and 111.
[3074] See HSBI Appendix (Appendix 2), paras. 29, 76-79, 141, and 148.
[3075] See HSBI Appendix (Appendix 2), paras. 22, 98, and 157.
[3076] Several of the LCA sales campaigns involved split orders of both Airbus and Boeing aircraft: Qatar Airways (2007); Etihad Airways (2008, 2011 and 2013); United Airlines (2010, 2012 and 2013); Air France-KLM (2011); Singapore Airlines (2013); British Airways (2013); and Lufthansa (2013). In one of these campaigns, the resulting split order was part of a deliberate policy on the part of the airline customer to avoid becoming dependent on one manufacturer for its long-haul needs. (HSBI Appendix (Appendix 2), paras. 140 and 141).
[3077] Mourey Statement, (Exhibit EU-34) (BCI), paras. 48 and 49.
[3078] Mourey Statement, (Exhibit EU-34) (BCI), paras. 48 and 49.
[3079] Statement of K. Rao, 6 October 2015, (Exhibit EU-1668) (HSBI). It is not affected by the caveats expressed by the United States and Mr Wojick concerning the inherent limitations of NPV analyses as a tool for comparing relevant factors associated with the respective offers of Airbus and Boeing in any LCA sales campaign.
[3080] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1259.

ability and incentive to lower its LCA prices without affecting its profitability calculus, the competitive dynamics of these LCA sales campaigns are such that it did not have the *commercial imperative* to do so in order to win the sales.[3081]

9.251. Because the European Union has failed to demonstrate any effect of the tied tax subsidies on Boeing's 787 or 777X prices in the post-implementation period, the possibility of any consequent impact of those subsidies on sales and prices of the A350XWB does not arise.[3082] Accordingly, there is no basis on which the tied tax subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price causal mechanism.

9.252. **The Panel therefore finds that the European Union has failed to establish that the tied tax subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price causal mechanism.**

9.3.2.2.2 The state and local cash flow subsidies

9.253. This category of post-2006 subsidies comprises:

a. B&O tax credits for Washington State property taxes and leasehold excise taxes in connection with property where the 787 and 777X (as well as 737 families) are produced, and a property tax exemption for LCFs in South Carolina used in transporting parts for the 787 production;

b. B&O tax credits for aerospace preproduction in Washington that are alleged to affect aircraft in preproduction such as the 787 and 777X (as well as the 737 MAX);

c. sales and use tax exemptions for construction materials, fuel and computer equipment related to 787 production in Washington and South Carolina; and

d. grants related to infrastructure for 787 production facilities in South Carolina.

9.254. In Section 9.2.3.2 of this Report, we explain the nature and operation of the state and local cash flow subsidies for purposes of deciding whether and how to aggregate the various post-2006 subsidies. In particular, we explain that the receipt of these subsidies is not contingent upon per-unit production or sale of LCA.

9.255. The European Union argues that the state and local cash flow subsidies generally operate to liberate funds and thereby reduce costs that Boeing would otherwise have had to incur with its own resources. The European Union considers that Boeing is able, and has strong incentives, to use the additional cash represented by the state and local cash flow subsidies to lower prices for its LCA in competitive sales campaigns without reducing its profits.[3083] The European Union therefore regards the state and local cash flow subsidies as having the same essential cost reducing effect as the tied tax (per-unit) subsidies. They should be analysed as operating to provide Boeing with the same ability to lower its LCA prices in particular, price-sensitive LCA sales campaigns, thereby contributing to causing the same effects on Airbus' prices and sales as the tied tax subsidies. Moreover, the magnitude of the state and local cash flow subsidies "confirms and amplifies" the existing causal connection already established by the subsidies' close connection to the production of the particular Boeing aircraft and the conditions of competition in the LCA industry.[3084]

9.256. The European Union considers that the untied nature of this aggregated group of subsidies is not an obstacle to their being found to cause adverse effects, especially in light of the Appellate Body's acceptance of the proposition that subsidies that are "not directly contingent upon

[3081] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1260.
[3082] See paras. 9.116 and 9.233 above.
[3083] European Union's first written submission, para. 1156; second written submission, para. 1080.
[3084] European Union's first written submission, paras. 1173-1175.

production or sale *can* nevertheless affect pricing decisions in some circumstances".[3085] It emphasizes that, in the original proceeding, the Appellate Body found a causal link between the tax abatements related to the City of Wichita IRBs and adverse effects, and argues that, since the state and local cash flow subsidies share the same essential features as the tax abatements related to the City of Wichita IRBs, this finding should "apply" equally to the state and local cash flow subsidies at issue in this proceeding.[3086]

9.257. The European Union notes that the Appellate Body reached its conclusion regarding the tax abatements related to the City of Wichita IRBs notwithstanding that they were untied subsidies.[3087] According to the European Union, the state and local cash flow subsidies are also closely "linked" to the research, development or production of particular Boeing LCA. This "close link with production", coupled with the "cash flow-enhancing nature" and the "prevailing competitive conditions", of the state and local cash flow subsidies, which are essentially the same as those of the tax abatements related to the City of Wichita IRBs, means that the Appellate Body's reasoning applies equally to all of the state and local cash flow subsidies in this proceeding.[3088]

9.258. The United States argues that the European Union has failed to establish a causal connection between any of the state and local cash flow subsidies and the alleged adverse effects. While the European Union refers to "aggressive pricing" by Boeing in LCA sales campaigns, it fails to explain how subsidies not tied to Boeing's marginal cost of producing the relevant aircraft (including those alleged to reduce Boeing's early-stage R&D costs) would affect Boeing's pricing. Absent such a showing, any "aggressive pricing" reflects normal competition rather than the effects of subsidies.[3089] The United States argues that, given that both the European Union and United States agree that Boeing's offers in LCA sales campaigns reflect the terms that Boeing, as a profit-maximizing firm, views as necessary to win the sales campaign, the relevant question is whether, and to what extent, the alleged subsidies enabled Boeing to price as it did.[3090]

9.259. According to the United States, the European Union had two ways to show that alleged subsidies enabled Boeing to provide additional discounts substantial enough to alter the outcome of a particular campaign. First, it could have shown that, even though the sales at those prices were profit-maximizing, Boeing would have been unable to make them absent the subsidies. Second, it could have shown that sales at those prices would no longer have been profit-maximizing for Boeing in the absence of the subsidies.[3091] According to the United States, "{t}he notion that a rational, profit-maximizing firm would deviate from optimal pricing strategy to generate increased revenue (at the expense of profits) only makes sense if the firm is capital-constrained and needs short-term revenue to continue operations."[3092] The United States observes that the European Union has been very clear that it does not allege that Boeing faces capital constraints that force it to deviate from a profit-maximizing strategy. The United States further notes that the European Communities in the original proceeding had not been able to establish that Boeing was capital constrained.[3093]

9.260. Further, the United States notes that the economic model provided by the European Communities in the original proceeding, which purported to demonstrate the effects of untied subsidies on Boeing's LCA pricing behaviour, was also rejected by the original panel.[3094] While the Appellate Body in the original proceeding expressed the view that untied subsidies "may" affect Boeing's prices, the United States maintains that the European Union must actually establish that

[3085] European Union's second written submission, para. 1085 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1348 (emphasis added)).

[3086] European Union's first written submission, paras. 1169 and 1177; second written submission, paras. 1087-1089.

[3087] European Union's second written submission, para. 1087.

[3088] European Union's second written submission, paras. 1088 and 1089.

[3089] United States' comments on the European Union's response to Panel question No. 169, para. 18.

[3090] United States' comments on the European Union's response to Panel question No. 169, paras. 22 and 23.

[3091] United States' comments on the European Union's response to Panel question No. 169, para. 23.

[3092] United States' comments on the European Union's response to Panel question No. 169, para. 23. Indeed, the United States argues that economic theory dictates that where a firm needs to maximize short-term revenue, it would *lower* its prices, as raising them would have the opposite effect. Therefore, if Boeing needed cash in the short-term due to the absence of the alleged subsidies, it would charge *lower*, not higher, prices.

[3093] United States' first written submission, paras. 723 and 724; second written submission, para. 867.

[3094] United States' first written submission, paras. 723-726; second written submission, para. 867.

they do so.[3095] According to the United States, the European Union provides no causation analysis beyond the general proposition that money is fungible.[3096]

9.261. The United States considers that the Appellate Body's treatment of the effects of the tax abatements related to the City of Wichita IRBs cannot support the European Union's general theory concerning the operation of untied subsidies such as the state and local cash flow subsidies through a price causal mechanism.[3097]

The analysis of the effects of untied subsidies on Boeing's LCA pricing in the original proceeding

9.262. Certain of the state and local cash flow subsidies, such as the Washington State B&O tax credits for property taxes and for aerospace preproduction/aerospace product development, were also at issue and analysed in the original proceeding. In the original proceeding, the European Communities alleged that all of the subsidies, other than the FSC/ETI subsidies and the Washington State and City of Everett B&O tax rate reductions, similarly operated to "increase Boeing's non-operating cash flow", thereby providing Boeing with the ability to engage in "aggressive pricing" of its LCA in order to win market share from Airbus.[3098] The subsidies in this group were not "explicitly targeted to lowering Boeing's costs of production of specific LCA models".[3099] Rather, they were considered "fungible" by the European Communities, and treated as the "functional equivalent of additional cash flow available to Boeings' LCA division".[3100] The European Communities argued that, notwithstanding the fact that this category of subsidies was not directly related to Boeing's production of individual LCA, Boeing's receipt of the subsidies of the magnitudes in question, in light of the strategic incentives in the LCA market, and Boeing's financial condition, made it reasonable to infer that the subsidies did in fact affect Boeing's LCA pricing behaviour.[3101]

9.263. The European Communities' original case that subsidies that are untied, in the sense that their receipt is not contingent on production or sale of LCA on a per-unit basis, can nonetheless affect Boeing's LCA pricing behaviour, was therefore based on a combination of: (a) an econometric simulation model developed by Professor Luís Cabral concerning the effects of "development subsidies"; (b) the financial condition or economic viability of Boeing's LCA division in the absence of the subsidy amounts; (c) subsidy magnitudes; (d) the conditions of competition in the LCA market; and (e) selected individual LCA sales campaigns.[3102]

9.264. The United States in the original proceeding agreed with the European Communities that the absence of a direct link (i.e. tie) to production of a particular product is not *of itself determinative* of the outcome of the Panel's causation analysis. At the same time, in the absence of such a tie, a complaining Member would bear the burden of identifying persuasive evidence that the subsidy was used by the recipient in a way that caused the adverse effects at issue, or that, but for the subsidy, the recipient could not have competed in the market as it did.[3103]

9.265. The original panel's discussion of the econometric simulation model developed by Professor Cabral is set forth in appendix VII.F.2 of the original panel report.[3104] The original panel considered that a principal weakness of Professor Cabral's model, insofar as it purported to demonstrate that Boeing would use a significant portion of each additional dollar of untied subsidy to engage in aggressive pricing of its LCA, was that the theory appeared to be inconsistent with

[3095] United States' first written submission, para. 730 (citing Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1348 at fn 2713).
[3096] United States' first written submission, para. 722.
[3097] United States' first written submission, para. 729.
[3098] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1825.
[3099] Panel Report, *US – Large Civil Aircraft (2nd complaint*), paras. 7.1609 and 7.1827.
[3100] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1609.
[3101] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1610.
[3102] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1611.
[3103] Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1828 and fn 3786.
[3104] As the panel explains, the "Cabral Model" actually comprised two models, the "objective function model" and the "price competition model". The main purpose of the "price competition model" was to determine Boeing's allocation of subsidies between three types of "investment": (a) "aggressive pricing" due to learning curve efficiencies; (b) "aggressive pricing" due to buyer switching costs; and (c) R&D expenditures. (Panel Report, *US – Large Civil Aircraft (2nd complaint*), appendix VII.F.2, para. 30).

Boeing's actual pricing behaviour between 2001 and 2006.[3105] The original panel also expressed the view that the relationship between a reduction in Boeing's general costs *that are not part of the development costs for a particular LCA programme* (e.g. general R&D costs), and LCA prices was less direct than suggested by Professor Cabral, especially in light of the evidence as to how LCA manufacturers set their prices.[3106] The panel's conclusions regarding the Cabral model were not appealed.

9.266. The original panel also found unpersuasive the European Communities' attempt to demonstrate that, but for Boeing's receipt of the subsidies in question between 1989 and 2006, Boeing's LCA division would not have been "economically viable", in large part because the European Communities' argument rested on the proposition that Boeing had received USD 19.1 billion in subsidies over that 17 year period, while the panel found that Boeing had received a fraction of that amount.[3107] Indeed, the panel estimated that the magnitude of the subsidies that could appropriately be analysed as operating as the functional equivalent of additional cash to Boeing was only USD 550 million over that 17 year period. The panel was unpersuaded that subsidies which by their nature are not directly tied to the production or sale of products, in such comparatively small amounts, could have affected Boeing's LCA pricing in a manner that could give rise to serious prejudice.[3108]

9.267. The European Communities appealed this finding on the basis that the panel should have assessed the effects of this group of untied subsidies, either with the tied tax subsidies, as an aggregated single group, or at least by cumulating the effects of the group of untied subsidies with those of the tied tax subsidies.[3109] While the Appellate Body did not find fault with the panel's decision not to conduct an aggregated analysis of the effects of the two groups of subsidies as though they were a single subsidy, it found that the panel had erred in failing to make a *cumulative* assessment of whether the effects of the untied subsidies *complemented and supplemented* the effects that the original panel had found were caused by the tied tax subsidies.[3110]

9.268. The Appellate Body, in completing the analysis on this issue, found that with one exception, none of the untied subsidies at issue was a *genuine* cause of serious prejudice in the single-aisle market. The exception was with respect to the tax abatements related to the City of Wichita IRBs, which we find have been withdrawn by the United States.[3111] There, the Appellate Body found that because the subsidy could "not be considered trivial" in its overall magnitude and duration, and was "closely connected" to Boeing's production of the 737, it had a genuine causal connection to the serious prejudice already found to have been caused by the tied tax subsidies in the single-aisle market.[3112] With respect to the remaining untied subsidies, which were the other Washington tax subsidies that are also at issue as state and local cash flow subsidies in this proceeding, the Appellate Body found insufficient evidence that the subsidies had been used in connection with expenditures associated with the 737NG. As a result, it found there could be no *genuine* causal connection between the subsidies and serious prejudice in the single-aisle market.[3113]

The amounts of the state and local cash flow subsidies and their alleged "links" to production of particular Boeing LCA

9.269. In Section 8 of this Report, we estimate the relevant amounts of the various state and local cash flow subsidies for the 2013-2015 period, which we present in the table below, along with an estimate of the value of Boeing orders for the various LCA over that same period. We also indicate the LCA programmes to which the particular subsidies are alleged by the European Union to be "linked".

[3105] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, appendix VII.F.2, paras. 68 and 72.
[3106] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, appendix VII.F.2, para. 74 and fn 4262.
[3107] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1830 and 7.1831.
[3108] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1828 and 7.1834.
[3109] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1323.
[3110] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1287 and 1288; and Panel Report, *EC and certain member States – Large Civil Aircraft*, para. 7.1956.
[3111] See para. 8.640 above.
[3112] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1348.
[3113] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1341-1346.

Table 11: Estimated amounts of state and local cash flow subsidies 2013-2015

Subsidy	2013-2015 (USD millions)	Boeing LCA in respect of which the European Union alleges the subsidy arises	Value of Boeing orders 2013-2015[3114]
Washington State B&O tax credits for preproduction/aerospace product development	[***]	737 MAX and 787-10s and 777Xs manufactured in the State of Washington	737NG: USD 45.7 billion 737 MAX: USD 97.6 billion 787: USD 36 billion 777X: USD 63.3 billion
Washington State B&O tax credit for property taxes and leasehold excise taxes	[***]	737NG, 737 MAX, and 787s manufactured in the State of Washington	
Washington State sales and use tax exemptions for computer hardware, software, and peripherals	[***]	737NG, 737 MAX, and 787s manufactured in the State of Washington	
South Carolina payment of proceeds of USD 50 million in bond issuances	50 (lump sum)	787s manufactured in South Carolina	
South Carolina property tax exemption in respect of Boeing LCFs	25.82	787s manufactured in South Carolina	
South Carolina sales and use tax exemptions in respect of aircraft fuel, computer equipment, and construction materials	2.25	787s manufactured in South Carolina	

9.270. Unlike the tied tax subsidies, Boeing's receipt of the state and local cash flow subsidies is not contingent on the production or sale of LCA on a per-unit basis. The state and local cash flow subsidies represent the functional equivalent of additional cash to Boeing. The European Union asserts that the state and local cash flow subsidies reduce Boeing's fixed costs of production. However, it does not demonstrate that any particular subsidy affects the programme costs for any specific Boeing LCA programme, in the sense that the subsidies in question affect Boeing's production cost forecasts for an LCA programme, and thereby alter the profitability calculus of sales of those LCA at particular prices.[3115] In addition, in asserting generally that certain state and local cash flow subsidies can be considered "linked" to multiple Boeing LCA programmes (as is the case for the Washington state and local cash flow subsidies), the European Union does not explain how much of the subsidy should be considered to be allocated to each aircraft programme, based on such "link".

9.271. The Panel does not rule out the possibility that, in certain specific contexts, subsidies that reduce the fixed costs of a producer may be shown to impact prices. For example, if Boeing were facing capacity constraints (such that any additional sales would result in higher marginal costs), a subsidized expansion of production capacity could be demonstrated to allow for a reduction of

[3114] These calculations have been made using an estimated discount of 44% off the average 2012 list-price of the relevant LCA. The average 2012 list prices are set forth in Boeing list prices, (Exhibit EU-1210). The 44% discount is the discount from average 2012 list prices of Boeing LCA used in the International Trade Resources Report submitted by the European Union in connection with its calculation of the annual amounts of the Washington State B&O tax rate reduction. (See ITR Report, (Exhibit EU-25), para. 11).

[3115] See Section 9.2.2 above. Compare, for example, the European Union's response to Panel question No. 169, fn 408. The European Union has not explained, beyond generalized assertions, how the individual state and local cash flow subsidies impact Boeing's fixed costs of production *in relation to any of its LCA programmes*. We note, moreover, that the Washington State B&O tax credits for property and leasehold excise taxes and for preproduction/aerospace product development, as well as the Washington State sales and use tax exemptions for computer hardware, software, and peripherals, were all challenged in the original proceeding and argued by the European Communities to be untied subsidies which were not linked to production of particular families of Boeing LCA or to the production or sale of individual LCA. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1609 and fn 3376). The European Union does not explain why it is now appropriate to analyse these same subsidy measures as reducing Boeing's fixed costs of production of any particular LCA programme or programmes.

marginal costs, and hence prices.[3116] Nor is the situation before us one in which a subsidy enables an otherwise uncompetitive producer to remain in the market, distorting market prices by contributing to excess supply or capacity.[3117] There is no evidence before us from which the Panel can conclude that, absent the state and local cash flow subsidies, Boeing would not have engaged, or would not have been financially able to engage, in the same pricing behaviour in which it engaged.

9.272. The European Union refers to the Appellate Body's finding with respect to the tax abatements related to the City of Wichita IRBs to support the argument that, in light of the incentives that Boeing has to reduce its prices in strategic LCA sales campaigns, and the subsidy magnitudes, the untied Washington State subsidies that have a "link" to the production of the relevant Boeing LCA, can be considered to have a *genuine* causal link to Boeing's pricing of those aircraft.[3118]

9.273. The Appellate Body's finding in relation to the tax abatements related to the City of Wichita IRBs was a factual determination made in the context of completing the analysis.[3119] To interpret what the Appellate Body said in that particular context as setting forth an economic theory or legal ruling regarding the basis on which untied subsidies, through their impact on the recipient's pricing behaviour, should be considered to be a *genuine* cause of serious prejudice would, in our view, be overstretching the application of that finding. The state and local cash flow subsidies may be related in a *factual sense* to the production of certain (or all) LCA by Boeing. The subsidies generally arise from Boeing's location of its LCA manufacturing in particular places. However, the fact that the production of certain (or all) Boeing LCA in a particular location gives rise to certain subsidies, does not of itself, say anything meaningful in an *economic sense* about how Boeing would apply the notional additional cash represented by those subsidies, and more specifically, whether it would use such additional cash to lower the prices of its LCA, or how it would allocate that additional cash to lower pricing of different LCA models where the subsidies in question are "linked" in a factual sense to production of a number of LCA models.[3120]

[3116] This is assuming that learning curve efficiencies are not adversely impacted by the addition of the new capacity. Aviation industry analysts have speculated that Boeing's decision to split its 787 production between two assembly sites on opposite coasts may have adversely affected the rate at which Boeing's 787 production costs have declined. (D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 9).

[3117] The evidence before the Panel suggests that, if anything, there is greater demand for LCA in the product markets the subject of this proceeding than can currently be met. Evidence before the Panel indicates that, as of the end of July 2014, both Airbus and Boeing held record backlogs of orders for approximately 11,000 aircraft combined. The 787 was reported to be sold out through the end of the decade. Boeing was reported to have raised its prices by approximately 3.1%, which was almost twice the rate of price increases of the previous year. ("Boeing Raises Jet Prices 3.1 Per cent; 777-9X Costs Most", *Bloomberg*, 31 July 2014, (Exhibit EU-1447)). Both Airbus and Boeing were reported in late 2014 and 2015 to be considering increasing production targets for single-aisle LCA to meet anticipated demand which already exceeded capacity, with Boeing's reported backlog for the 737 family being reported as 4,008 orders as of September 2014; almost eight years of production at current rates. ("Boeing considering further boost in 737 production", *Chicago Tribune*, 17 September 2014, (Exhibit EU-1684); and "UPDATE 2 – Airbus debates new A320 output hike, suffers test glitch", *Reuters*, 28 May 2015, (Exhibit EU-1686)).

[3118] And correspondingly, that untied subsidies that have a close connection or "link" to the production of other Boeing LCA at issue in this proceeding (i.e. the 787 and 777X), can also be considered to have a *genuine* causal link to Boeing's pricing of those aircraft.

[3119] The Appellate Body found that the original panel erred in failing to consider whether the "remaining" (untied) subsidies had a genuine causal relationship with; i.e. made a "real or meaningful contribution to" the effects of the tied tax subsidies on Boeing's pricing in the 100-200 seat LCA product market, such that the remaining subsidies could be said to "complement and supplement" the effects of the tied tax subsidies and thereby also cause serious prejudice. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1328 and 1329). The Appellate Body then decided to complete the analysis. The Appellate Body has completed the analysis only in cases in which there are sufficient factual findings in the panel report or undisputed facts in the panel record to enable it to carry out the legal analysis. (See e.g. Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1143-1147). The United States had asserted that there were no such findings or undisputed facts on the record that would enable the Appellate Body to complete the analysis in this instance, and moreover, that the European Union had failed to identify any. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1332).

[3120] To take an example, although the Washington State B&O tax credits for pre-production/aerospace product development may currently be generated in respect of Boeing aircraft that are in pre-production, such as the 737 MAX, 787-10, and 777X, given the nature of this subsidy as untied, we do not consider that this necessarily provides a basis for concluding, in a manner analogous to the Appellate Body's analysis of the per-

9.274. In the original proceeding, the Appellate Body reasoned (in relation to its analysis of the tied tax subsidies) that it is rational to expect that, where a subsidy is provided on a *per-unit basis* in respect of LCA produced or sold, the manufacturer would be inclined, in the appropriate market context, to pass on all or part of that subsidy to the purchaser because it is possible to do so without sacrificing profit margins.[3121] The calculus of the extent to which untied subsidies, which relate in a less direct way to production or sales than per-unit subsidies, potentially affect the profitability of an LCA sale in light of the competitive dynamics of the LCA markets, is far less clear. We are unable to identify any economic rationale or other explanation as to why untied subsidies that may be considered factually associated with production of Boeing aircraft, whether individual aircraft models, certain models, or all models, would contribute to Boeing's ability to lower the prices of those aircraft.[3122]

9.275. The European Union does not advance an economic theory to support its argument that subsidies that reduce Boeing's fixed costs in a general sense impact its LCA prices generally or more specifically, over the short-term or over the long-term.[3123] Nor does it attempt to demonstrate that Boeing's LCA pricing would not be economically feasible absent the receipt of the state and local cash flow subsidies.[3124]

9.276. Because the European Union has failed to demonstrate any effect of the state and local cash flow subsidies on Boeing's prices of the 787 or 777X in the post-implementation period, the possibility of any consequent impact of those subsidies on sales and prices of the A350XWB does not arise.[3125] Accordingly, there is no basis on which the state and local cash flow subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price causal mechanism.

9.277. **The Panel therefore finds that the European Union has failed to establish that the state and local cash flow subsidies are a genuine and substantial cause of any of the**

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unit tied tax subsidies in the original proceeding, that Boeing would have the *ability and incentive* to use that subsidy to lower its LCA prices in relation to those aircraft models. The same analysis applies with respect to the other state and local cash flow subsidies which the European Union alleges are "linked" to the production of one or more Boeing LCA.

[3121] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1261.

[3122] We note that the Appellate Body has explained that, even where a panel considers its view to represent common sense or its own conception of economic rationality, it should at least explain the economic rationale that supports its "intuition" and moreover, should test its intuitions empirically. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 643). Indeed, accepting the European Union's arguments would, in this instance amount to "causation through association". (See Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1404). Our approach to this issue is consistent with the approach to an analogous issue taken by the Appellate Body in *EC and certain member States – Large Civil Aircraft*. In that case, the Appellate Body found that the panel's generalized finding that the R&TD subsidies enabled Airbus to develop features and aspects of its aircraft faster than would otherwise have been possible was insufficient to justify cumulating the effects of the R&TD subsidies with the "product effects" of the launch aid/member State financing subsidies in enabling Airbus to launch particular models. Rather, in order to establish the requisite *genuine* causal link, the panel should have made specific findings that technology or production processes funded by the R&TD subsidies contributed to Airbus' ability to launch and bring to market particular models of LCA. (Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1404 and 1407).

[3123] Unlike in the original proceeding, the European Union does not submit an economic model explaining how subsidies the receipt of which is not contingent on per-unit production or sale of LCA, by virtue of operating to increase Boeing's cash flow in a general sense, cause Boeing to lower its LCA prices. (Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1613).

[3124] This is a significant departure from the European Communities' case in the original proceeding, where it sought to demonstrate that Boeing's pricing and product development decisions would have been "unsustainable and financially irrational" absent Boeing's alleged receipt of the subsidies at issue. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1621, 7.1830, and 7.1831, and fn 3787). The evidence before us suggests that the 787 programme has thus far generated significant losses for Boeing. See para. 9.55 where the Panel discusses evidence that the accumulated "deferred costs" for the 787 programme are projected to peak at USD 33 billion late 2016 and that these losses are in addition to Boeing's original investment to develop the 787, which has been estimated by analysts at an *additional* USD 20 billion or more. (D. Gates, "Will 787 program ever show an overall profit? Analysts grow more sceptical", *The Seattle Times*, 17 October 2015, (Exhibit EU-1705), p. 8). However, the evidence also suggests that Boeing has thus far been able to sustain this programme due to the cash generated by its highly profitable 777 and 737 programmes. (See para. 9.55 above).

[3125] See paras. 9.116 and 9.122 above.

forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price mechanism.

9.3.2.2.3 The post-2006 aeronautics R&D subsidies

9.278. The European Union argues that the post-2006 aeronautics R&D subsidies[3126] operate to lower Boeing's pricing of current LCA, such as the 787 and 777X, because they provide Boeing with access to and use of research results and inputs that enable it to "continue maturing" technologies for application to future generations of LCA without having to pay the U.S. Government for such access and use.[3127] The European Union considers that the post-2006 aeronautics R&D subsidies operate in a manner that is "identical to the remaining state and local subsidies".[3128]

9.279. The European Union considers that the post-2006 aeronautics R&D subsidies are similar in nature to the pre-2007 aeronautics R&D subsidies in that they concern the development of LCA technologies that "Boeing has a significant economic disincentive to research on its own".[3129] However, unlike the pre-2007 aeronautics R&D subsidies, the post-2006 aeronautics R&D subsidies concern technologies that are not sufficiently mature for application to *current* Boeing LCA, and thus do not affect sales and prices of current generation Boeing LCA through a technology causal mechanism.[3130] The European Union argues that the post-2006 aeronautics R&D subsidies do affect the prices of current Boeing LCA through a price causal mechanism, however. This is because the post-2006 aeronautics R&D subsidies relieve Boeing from paying to licence the use of intellectual property in its technology development activities. The post-2006 aeronautics R&D subsidies therefore lower Boeing's costs of licensing intellectual property rights to LCA technology, and of developing that technology, in order to continue improving its products and to maintain the competitiveness of products, "enabling it to act on its incentive to pass such cost savings on to its customers in the form of lower prices for Boeing LCA".[3131]

9.280. The European Union argues that the post-2006 aeronautics R&D subsidies, operating through a price causal mechanism, enable Boeing to lower the prices of its current LCA based on the same reasoning that the Appellate Body adopted in concluding that the tax abatements related to the City of Wichita IRBs have a *genuine* causal link to, and "complemented and supplemented" the effects of the tied tax subsidies on Boeing's LCA prices in the original proceeding.[3132] The *genuine* causal link between the post-2006 aeronautics R&D subsidies and alleged present adverse effects is confirmed by the design, structure, magnitude, and operation of these subsidies, in light of the relevant conditions of competition, as well as their nexus with the subsidized Boeing LCA. This is sufficient to establish that the post-2006 aeronautics R&D subsidies affect Boeing's LCA pricing decisions, as the Appellate Body made clear that subsidies not contingent upon per-unit production or sale *may* affect prices, and given the conditions of competition, Boeing would have

[3126] Although the European Union argues that the non-flight testing portion of the FAA aeronautics R&D subsidy should be analysed as operating through a technology causal mechanism, it requests the Panel to analyse this aspect of the FAA aeronautics R&D subsidy as operating through a price causal mechanism if the Panel were to reject its technology effects arguments. (European Union's response to Panel question No. 43, fn 352).

[3127] European Union's response to Panel question No. 43, para. 280.

[3128] European Union's first written submission, paras. 1180 and 1187. See also European Union's comments on United States' response to Panel question No. 158, para. 79, where the European Union explains that the post-2006 aeronautics R&D subsidies that operate through a price causal mechanism are not, *in the short-term*, materially different from the tax abatements related to the City of Wichita IRBs.

[3129] European Union's response to Panel question No. 43, para. 280.

[3130] The post-2006 aeronautics R&D subsidies cannot be linked to particular Boeing LCA currently marketed, owing to their nature as "funding early-stage R&D intended to create technologies that do not actually appear on LCA until years or decades in the future". (European Union's response to Panel question No. 158, para. 72). Compare to European Union's second written submission, paras. 1099 and 1100 and United States' comments on the European Union's response to Panel question No. 43, paras. 239-246.

[3131] European Union's response to Panel question No. 43, para. 280. See also European Union's first written submission, para. 1187; opening statement at the meeting with the Panel, paras. 81 and 82; and closing statement at the meeting with the Panel, paras. 25 and 26.

[3132] European Union's first written submission, para. 1187: "{w}hile the City of Wichita IRBs provided benefits through tax breaks on property investment, and the aeronautics R&D subsidies here relate to funding and support for R&D, both share the salient feature that they generate or free non-operating cash flow that Boeing can use to lower LCA prices".

used the post-2006 aeronautics R&D subsidies available to it to reduce prices in competitive sales campaigns.[3133]

9.281. The United States makes a number of arguments, first with respect to the proposition that, absent the post-2006 aeronautics R&D subsidies, Boeing would have had to pay the U.S. Government to licence the intellectual property, and second, with respect to the proposition that cost savings represented by Boeing not having to pay to licence the intellectual property represent the equivalent of additional cash flow that Boeing would use to lower its current LCA prices.

9.282. The United States considers that there is no support for the European Union's argument that, absent the post-2006 aeronautics R&D subsidies, Boeing would have had to incur additional costs licensing intellectual property from the U.S. Government. According to the United States, the European Union's argument implies that, because the benefit conferred by the subsidy concerns the more favourable allocation of intellectual property rights to Boeing, the counterfactual assessment of Boeing's LCA pricing in the absence of the post-2006 aeronautics R&D subsidies should assume that Boeing would need to licence those technologies from the U.S. Government in order to carry out its LCA technology development activities. However, the nature of the research funded by the post-2006 aeronautics R&D subsidies is research that would not have been undertaken in the absence of the subsidies. Thus, in the appropriate counterfactual, the research would not have been undertaken by Boeing or by the U.S. Government and there is no basis for thinking that Boeing would pay to obtain intellectual property rights to such non-existent research.[3134] Moreover, the European Union provides no evidence that the R&D funded by the post-2006 aeronautics R&D subsidies can be expected to produce significant protectable intellectual property, or that any such protected intellectual property is likely to be needed to conduct subsequent research relevant to Boeing's LCA.[3135]

9.283. The United States also considers that, even assuming *arguendo* that the post-2006 aeronautics R&D subsidies resulted in lower intellectual property licensing fees for Boeing, the European Union fails to provide any economic theory to explain why, in a counterfactual world in which Boeing paid to licence the equivalent intellectual property, Boeing would need to raise the prices of its current LCA. First, the European Union does not address the magnitude of the licensing fees that Boeing would have had to pay absent the post-2006 aeronautics R&D subsidies, or support an estimate of the value of the putative cost savings with any evidence. Second and more fundamentally, there is no basis for concluding that, in a counterfactual world where Boeing had to pay to licence intellectual property to develop LCA technologies for application to future LCA models, it would need to raise the prices of its current LCA.[3136] Third, given the European Union's position that the post-2006 aeronautics R&D subsidies support research into technologies that are *not linked* to current Boeing LCA (i.e. the 787, 777X, 737 MAX, or 737NG)[3137], the so-called "cost savings" from not having to licence intellectual property are "untied" to the production of current LCA and therefore would not affect pricing of current Boeing LCA, unless Boeing were shown to face significant capital constraints, such that its investment and pricing behaviour would be sensitive to fluctuations in cash flows.[3138]

9.284. Finally, as regards the European Union's attempt to argue that the post-2006 aeronautics R&D subsidies complement and supplement the effects of other subsidies on Boeing's LCA prices, by analogy to the way that the Appellate Body cumulated the effects of the tax abatements related to the City of Wichita IRBs with those of the tied tax subsidies in the 100-200 seat LCA product

[3133] European Union's first written submission, paras. 1114-1116 and 1183-1190; and second written submission, paras. 1083-1091.

[3134] United States' comments on the European Union's response to Panel question No. 43, paras. 249-251. The United States adds that, if the nature of the subsidized research is such that the R&D would have been conducted by Boeing absent the post-2006 aeronautics R&D subsidies, there would be no basis for finding that the post-2006 aeronautics R&D subsidies at any point in the future could give rise to technology effects, and the European Union's position is therefore internally inconsistent. See also United States' response to Panel question No. 158, para. 45.

[3135] United States' comments on the European Union's response to Panel question No. 43, para. 252.

[3136] United States' comments on the European Union's response to Panel question No. 43, paras. 253 and 254.

[3137] Referring to European Union's response to Panel question No. 43, para. 280.

[3138] United States' comments on the European Union's response to Panel question No. 43, para. 255. The United States notes that the European Union has stated clearly that it is not attempting to show that Boeing was or is capital constrained.

market, the United States argues that the European Union has failed to establish any "link" to particular Boeing LCA.[3139] Specifically, the European Union does not explain how intellectual property licensing fees that would be required to develop a future technology for a future aircraft model are linked to the production of existing aircraft that are currently being sold.

9.285. Japan and Korea advance arguments supporting the analysis of R&D subsidies through a price causal mechanism. Japan argues that a price causal mechanism is inherent in any subsidy that has the potential to cause price-related effects, and that R&D subsidies are no exception. R&D subsidies function by enabling the recipient to lower the sales price of products incorporating the results of the subsidized research and development.[3140] Japan considers that, even assuming for the sake of argument that, with respect to the aeronautics R&D subsidies at issue in this proceeding, Boeing used the previously-subsidized technology, experience, and knowledge to further the development of new innovative technologies (the so-called "spill-over" and sleeper technology effects), this does not mean that the assessment of adverse effects can properly be based on such a technology causal mechanism.[3141] For Japan, the fact that a recipient has invented a particular technology likely reveals that it had the technological potential to do so, but could not afford to commercially, in the absence of subsidization.[3142] In this situation, the proper counterfactual in analysing adverse effects is whether the recipient, as a business entity, would have had to offer products using the technology it developed without the R&D subsidies at higher prices, rather than whether the recipient could, or could not, have invented the particular technology.[3143] Japan further observes that it is not clear what realistic steps the subsidizing government could take to remove the "technological effect" of R&D subsidies. However, if the removal of adverse effects is considered from the perspective of the price effects of R&D subsidies, it is more realistic for a subsidizing government to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement.[3144]

9.286. Korea considers that the technology causal mechanism is difficult to reconcile with the structure of the SCM Agreement and its definition of subsidies and that it is doubtful that such an analysis can properly be extended to other situations in which the parties have not accepted its use.[3145] A subsidy only exists where government action takes the form of a financial contribution. In essence, then, a subsidy always consists of extra money for the recipient. Because the essence of a subsidy is the extra money the recipient obtains, the effects of the subsidy must be measured by the effects of that money. Therefore, as a logical matter, the only direct effect of the provision of money to a recipient at lower-than-market cost is a reduction in the recipient's overall cost of financing.[3146] Korea considers that the proposed technology causal mechanism presents insuperable conceptual difficulties in cases such as this, with a product characterized by long development times that can continue to provide multiple benefits over multiple generations. As a practical matter, technological advantages gained in the past cannot be withdrawn and their effects cannot be erased. Korea fails to see how the U.S. producer in this proceeding can be expected to unlearn the knowledge it has gained over the years, while by the same token, the benefits of any continuing subsidies would not be reflected for many years, when the knowledge generated today is actually put to use. By contrast, money obtained through improper subsidies can be repaid or otherwise offset through taxes or other levies; the financial effects of a subsidy are quantifiable and remediable. The technological effects are not. Korea therefore considers that the assessment of adverse effects through a technological mechanism should be carefully circumscribed, if not entirely rejected.[3147]

9.287. The parties' arguments raise two basic issues. The first is whether the post-2006 aeronautics R&D subsidies relieve Boeing from paying to licence intellectual property in its

[3139] United States' comments on the European Union's response to Panel question No. 43, paras. 257-259.
[3140] Japan's third-party submission, paras. 10 and 11.
[3141] Japan's third-party submission, para. 12.
[3142] Japan emphasizes in this respect the positive externalities of R&D subsidies, and that R&D subsidies, by their nature, can be distinguished from those that provide a competitive advantage to inefficient enterprises. Indeed, R&D subsidies are meaningless unless the recipient has the requisite internal competencies to achieve the desired result. (Japan's third-party submission, paras. 21-23).
[3143] Japan's third-party submission, para. 14; third-party statement, paras. 24-26.
[3144] Japan's third-party submission, para. 16.
[3145] Korea's third-party submission, para. 25.
[3146] Korea's third-party submission, paras. 25-27.
[3147] Korea's third-party submission, paras. 29 and 30.

technology development activities and thus can be considered to lower Boeing's costs.[3148] The second is whether, if the Panel accepts that characterization of the operation of the subsidies, these subsidies have been demonstrated to affect Boeing's LCA pricing behaviour.

9.288. With respect to this second issue, we recall that in Section 9.3.2.2.2 above, we evaluate the European Union's argument that certain state and local cash flow subsidies provide Boeing with additional cash flow because they are linked to (and lower) Boeing's costs of researching, developing or producing LCA. We find that the European Union has failed to demonstrate that these subsidies, by virtue of operating to increase Boeing's overall cash flow, have a genuine causal link to Boeing's LCA pricing. This is because the European Union does not provide any theoretical or other basis (such as cash flow constraints) for considering that Boeing's LCA pricing behaviour would have been any different absent the subsidies. The European Union's argument regarding Boeing's incentives to apply the alleged cost savings represented by the post-2006 aeronautics R&D subsidies to lower pricing of its LCA parallels the argument it makes in this regard in relation to the state and local cash flow subsidies. This argument must therefore fail for the same reasons that we find that the European Union has failed to demonstrate that Boeing would use the additional cash flow represented by the state and local cash flow subsidies to lower its LCA prices.

9.289. It is therefore unnecessary for us to address the first issue, which is whether the post-2006 aeronautics R&D subsidies should be analysed as representing additional cash flow to Boeing on the basis that they relieve Boeing from paying to licence intellectual property in its technology development activities and thereby lower Boeing's costs. We merely observe that the vast majority of the post-2006 aeronautics R&D subsidies do not appear, on the basis of the evidence before us, to be related in any sense to the production of the particular LCA that the European Union alleges are being offered to customers at lower prices.[3149] At most, these subsidies could relate to the development technologies for potential application of *future generations of Boeing LCA*.

9.290. Because the European Union has failed to demonstrate any effect of the post-2006 aeronautics R&D subsidies on Boeing's prices of the 787 or 777X in the post-implementation period (assuming, *arguendo*, that we treat these subsidies as relieving Boeing from paying to licence intellectual property in its technology development activities, and thus as subsidies that lowered Boeings' costs, an issue we need not and do not decide), the possibility of any consequent impact of those subsidies on sales and prices of the A350XWB does not arise.[3150] Accordingly, there is no basis on which the post-2006 aeronautics R&D subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price causal mechanism.

9.291. **The Panel therefore finds that the European Union has failed to establish that the post-2006 aeronautics R&D subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period, through a price mechanism.**

[3148] Alternatively, whether for aeronautics R&D that Boeing would have undertaken in the absence of the subsidies, the full amount of the financial contributions should be treated as "cost savings" to Boeing.

[3149] For the vast majority of the post-2006 aeronautics R&D subsidies, the European Union indicates that the subsidies concern technologies that are not yet sufficiently mature for application to *current* Boeing LCA. These subsidies therefore do not bear any relation to expenditures associated with Boeing's current LCA offerings. The European Union alleges that a relatively small number of individual post-2006 aeronautics R&D subsidies are in fact related to Boeing's development of innovative technologies for current LCA offerings, i.e. the non-flight testing portion of the FAA aeronautics R&D subsidy, which the European Union requests the Panel to analyse as operating through a technology causal mechanism based on their contribution to Boeing's development of innovative technologies for current LCA offerings, specifically the 787, 737 MAX, and 777X. As regards this subsidy, the European Union argues in the alternative that it be considered to operate through a price causal mechanism.

[3150] See paras. 9.116 and 9.122 above.

9.3.2.2.4 Summary of conclusions on whether the post-2006 subsidies benefiting the 787 and 777X cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB in the post-implementation period, through a price causal mechanism

Tied tax subsidies

9.292. The Panel recalls that the Appellate Body in the original proceeding emphasized the nature of the tied tax subsidies as tied to the production and sale of LCA on a per-unit basis in reaching the conclusion that subsidies of this nature are capable of affecting Boeing's pricing decisions with respect to the relevant LCA. The Appellate Body reasoned that, given the nature of the tied tax subsidies, their operation over time, their magnitude, and the competitive conditions in the LCA markets, Boeing had the *ability and incentive to* lower its LCA prices, however it would be necessary to establish that (a) Boeing was under particular pressure to reduce its prices in order to secure LCA sales in particular sales campaigns and (b) there were no other non-price factors that explained Boeing's success in obtaining the sale, in order to conclude that the subsidies contributed in a genuine and substantial way to the lowering of Boeing's prices. The Appellate Body therefore considered that it would only be possible to reach a conclusion regarding the causal connection between the tied tax subsidies and Boeing's prices by examining the sales campaign evidence.

9.293. Following the approach of the Appellate Body to the analysis of the tied tax subsidies, the Panel has evaluated the sales campaign evidence submitted in relation to sales campaigns won by Boeing with the 787 and/or 777X at the expense of the A350XWB between 2007 and 2015 and which are argued to be evidence of significant lost sales of the A350XWB, as well as impedance of A350XWB imports and exports, and significant price suppression of the A350XWB, and threats of the foregoing, in each case an effect of the U.S. subsidies. In doing so, it sought to determine whether the campaigns are price-sensitive, in the sense that Boeing was under particular pressure to reduce its prices in order to secure LCA sales in particular sales campaigns and there were no other non-price factors that explain Boeing's success in obtaining the sale. The Panel concluded that none of the sales campaigns involving the 787 and 777X and the A350XWB were price-sensitive in the above sense, and that there were other factors that featured prominently in the customers' evaluations of the suitability of the competing offers and the objective evidence on the record explaining the reasons why the customer chose to order the Boeing aircraft over the competing Airbus offering. Accordingly, the European Union has failed to establish that the tied tax subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged by the European Union in respect of the A350XWB in the post-implementation period through a price causal mechanism.

State and local cash flow subsidies

9.294. Unlike the tied tax subsidies, Boeing's receipt of the state and local cash flow subsidies is not contingent on the production or sale of LCA on a per-unit basis. Therefore, rather than operating to directly reduce the marginal unit costs of each Boeing LCA, the state and local cash flow subsidies represent additional untied cash to Boeing. The European Union asserts that the state and local cash flow subsidies reduce Boeing's fixed costs of production. However, it does not demonstrate that any particular subsidy affects the programme costs for any specific Boeing LCA programme, in the sense that the subsidies in question affect Boeing's production cost forecasts for an LCA programme, and thereby alter the profitability calculus of sales of those LCA at particular prices.

9.295. The Panel does not consider that asserted factual "links" between the receipt of a subsidy and the production of LCA mean that the subsidies thereby have a *genuine* causal relationship to Boeing's prices, and to consequent effects on Airbus' sales and prices. The Appellate Body's finding in relation to the tax abatements related to the City of Wichita IRBs was a factual determination made in the context of completing the analysis. The Panel does not interpret what the Appellate Body said in the particular context of cumulating the effects of the tax abatements related to the City of Wichita IRBs with the effects of the tied tax subsidies in the 100-200 seat LCA product market, as part of completing the analysis, as setting forth an economic theory or legal ruling regarding the basis on which untied subsidies, through their impact on the recipient's pricing behaviour, should be considered to be a *genuine* cause of serious prejudice. Moreover, in asserting generally that certain state and local cash flow subsidies can be considered "linked" to multiple

Boeing LCA models (as is the case for the Washington state and local cash flow subsidies), the European Union does not explain how much of the subsidy should be considered to be allocated to each aircraft model, based on such "link".

9.296. The European Union does not advance an economic theory to support its argument that subsidies that reduce Boeing's fixed costs in a general sense impact its LCA prices generally or more specifically, over the short-term or over the long-term. Nor does it attempt to demonstrate that Boeing's LCA pricing would not be economically feasible absent the receipt of the state and local cash flow subsidies.[3151]

9.297. Accordingly, the European Union has failed to establish that the state and local cash flow subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged by the European Union in respect of the A350XWB in the post-implementation period through a price causal mechanism.

Post-2006 aeronautics R&D subsidies

9.298. The European Union has failed to establish that the post-2006 aeronautics R&D subsidies, assuming for purposes of argument that the post-2006 aeronautics R&D operate in the same manner as the state and local cash flow subsidies, are a genuine and substantial cause of any of the forms of serious prejudice alleged by the European Union in respect of the A350XWB in the post-implementation period through a price causal mechanism.

9.3.3 The parallel argument: Whether the original serious prejudice caused by the pre-2007 aeronautics R&D subsidies in respect of the A330 and Original A350 continues in the post-implementation period as serious prejudice to the interests of the European Union in respect of the A330 and A350XWB

9.299. In this Section, we address the European Union's parallel argument that the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8, because each of: (a) the significant price suppression of the A330 and Original A350; (b) the significant lost sales of the Original A350; and (c) the threat of displacement or impedance in the 200-300 seat LCA product market, found to exist in the 2004-2006 reference period in the original proceeding, continues to exist in the post-implementation period.

9.300. The European Union argues that the United States has failed to remove the *significant price suppression of the A330* on a number of grounds.[3152] First, some of the 2004-2006 price-suppressed orders of the A330 have yet to be delivered in the post-implementation period. Second, customers who placed orders of the A330 at suppressed prices in 2004-2006 have exercised options or purchase rights in respect of those price suppressed orders (and based on the same pricing), enabling them to buy more A330s at the same suppressed prices. Third, those same customers, after 2006, have made "follow-on orders" influenced by the same low pricing expectations that Airbus had met in 2004-2006 in respect of 17 out of 28 of the original 2004-2006 customers. In addition, the European Union argues that, after 2006, the market became conditioned to expecting lower prices for A330s and has never changed that view. In other words, the pricing expectations of all customers, not just those who benefited from price suppressed sales in 2004-2006, have been adversely affected and this phenomenon continues into the post-implementation period.[3153]

[3151] The evidence before the Panel suggests that Boeing has thus far been able to sustain the significant "deferred production costs" associated with the 787 programme due to the cash generated by its highly profitable 777 and 737 programmes. See above para. 9.55.

[3152] The European Union rejects the argument of the United States that its claim of price suppression in respect of the A330 must fail as a matter of law because of its position that the A330 is in a separate market. (European Union's second written submission, para. 1459). The European Union argues that the omission, from the second part of Article 6.3(c) of the SCM Agreement, of the requirement that the "subsidized product" and the "like product" be in the same market, means that significant price suppression, price depression, and lost sales may be established where the effects of a subsidy arise in a product market separate from the product market in which the subsidized product competes. (European Union's response to Panel question No. 40, paras. 229-250; comments on the United States' response to Panel question No. 40, paras. 233-247).

[3153] European Union's first written submission, paras. 1226-1265; second written submission, paras. 1453-1462.

9.301. The European Union bases its arguments that the United States has failed to remove the *significant price suppression of the Original A350* on what it alleges is significant price suppression of the A350XWB in the post-implementation period. In essence, the European Union argues that the significant price suppression of the Original A350 that was found to exist in 2004-2006 continues in the post-implementation period through deliveries of A350XWBs that were conversions (at suppressed prices) of orders for Original A350s that were placed in 2004-2006.[3154]

9.302. The European Union considers that the United States has failed to remove the *significant lost sales of the Original A350* because those lost sales continue in the post-implementation period as lost sales of the A350XWB through deliveries of 787 orders placed in the nine sales campaigns that the European Communities alleged were significant lost sales to Airbus over the 2004-2006 period in the original proceeding.[3155] The European Union also alleges that any options or purchase rights that were part of these orders, when "firmed up", also lead to a threat of significant lost sales. The European Union similarly treats these nine alleged lost sales of the Original A350 in the 2004-2006 period as impeded exports of the A350XWB in the post-implementation period where deliveries of the 787 from those lost sales are occurring in the post-implementation period. Accordingly, the European Union considers that the United States has failed to remove the *threat of displacement and impedance* found to exist in the original proceeding.[3156]

9.303. With respect to the alleged continuing *significant price suppression of the A330*, the United States argues that the European Union fails as a legal matter to establish one of the basic elements of a price suppression claim under Article 6.3(c) because the European Union's argument that the A330 is in a "monopoly" market for "existing technology, small wide-body aircraft that are available for near-term delivery" means that the A330 is not in the same market as any Boeing aircraft.[3157]

9.304. The United States argues that the European Union is precluded from arguing that the United States has failed to remove the *significant price suppression of the Original A350* on the basis of alleged significant price suppression of the A350XWBs currently being delivered (as a result of converted orders of Original A350s). The United States considers that the original panel rejected the argument that suppression of Original A350 prices necessarily led to suppression of A350XWB prices when the orders were converted. It also disputes that Airbus had no choice but to convert the Original A350 orders to A350XWB orders at the same price. However, even if the European Union were correct that Airbus had no choice but to convert the Original A350 orders to A350XWB at lower prices to avoid cancellation and penalty fees, this is not an effect of the pre-2007 aeronautics R&D subsidies.[3158]

9.305. As to the alleged continuing *significant lost sales of the Original A350* as significant lost sales of the A350XWB in respect of deliveries in the post-implementation period of 787s ordered out of those lost sales campaigns, the United States argues that the European Union cannot turn what were found in the original proceeding to be lost sales of the *Original A350* into lost sales of the *A350XWB* in the compliance proceeding. The United States also argues that five of the LCA sales campaigns at issue in the original proceeding cannot be the basis of lost sales claims in this proceeding because they were rejected as lost sales in the original proceeding and the European Union did not appeal those panel findings. Even if the Panel in this proceeding did "reassess" those alleged lost sales cases, it would conclude as it did in the original proceeding, that there were other factors besides the subsidies that explained the outcomes of those campaigns. Similarly, original findings based on *impedance of exports of A330 and Original A350* aircraft cannot be the basis for impedance findings regarding the A350XWB. Moreover, five of the nine sales campaigns at issue in the original proceeding were found not to be lost sales (findings the

[3154] European Union's first written submission, paras. 1277-1289; second written submission, paras. 1465-1481.

[3155] European Union's first written submission, paras. 1337-1406; second written submission, paras. 1204-1255.

[3156] European Union's first written submission, paras. 1569, 1570, 1586-1588, 1590, 1591, 1594-1597, 1602, 1604, 1605, 1608, and 1609; second written submission, paras. 1532-1550, 1554-1559, and 1567-1573.

[3157] United States' first written submission, para. 776; second written submission, para. 936.

[3158] United States' first written submission, paras. 830-831; second written submission, paras. 939-945.

European Union did not appeal) and therefore cannot support arguments of displacement of exports in this proceeding.[3159]

9.306. Canada argues that the European Union's claims regarding the continuation of adverse effects in the form of price suppression and lost sales should fail because it is not sufficient for the European Union to establish that current and future deliveries are related to orders placed during the original reference period. Rather, the European Union must establish that these Boeing deliveries and their negative effects on Airbus (lost sales and price suppression) are attributable to the presence of subsidies at the end of the implementation period. The European Union fails to conduct a proper counterfactual analysis to establish that the situation would have been different in the absence of the subsidies at the end of the implementation period.[3160]

9.307. We note that an important element of the European Union's arguments that the United States has not removed the effects of the past serious prejudice in respect of the A330 and Original A350, because that serious prejudice continues in the post-implementation period, is the idea that serious prejudice *continues to exist until the relevant LCA is delivered*. In support of this view, the European Union relies on the original panel's observation that the phenomena of price suppression and lost sales do not begin and end at the time an LCA is ordered but continue up to and including the time at which the aircraft is delivered (or not delivered):

> In the Panel's view, the phenomena of "price suppression" and "lost sales" do not begin and end at the time at which an LCA is ordered. Rather, given the particularities of LCA production and sale, these forms of serious prejudice should be understood to begin at the time at which an LCA order is obtained (or an order is lost), and to continue up to and including the time at which that aircraft is delivered (or not delivered). However, the Panel considers that the ordinary meaning of the terms "imports" and "exports" in Articles 6.3(a) and (b) of the SCM Agreement, respectively, suggests that these forms of serious prejudice arise only on delivery of the aircraft to the customer.[3161]
>
> Because we regard price suppression and lost sales to exist from the time an order for LCA is made, up to and including its delivery, data pertaining to both LCA orders and to LCA deliveries will potentially be relevant to demonstrating the existence of significant price suppression and significant lost sales. As regards displacement and impedance or imports or exports, the Panel considers that the existence of these serious prejudice phenomena can only be definitely established by relevant delivery data. [3162]

9.308. We note that the relevant paragraphs of the panel report explaining the findings of significant price suppression and lost sales suffered by Airbus in the 200-300 seat LCA product market do not explicitly mention the idea that price suppression and lost sales begin at the time of an order and continue up to and including the delivery of an aircraft, which suggests that these findings were made with respect to orders only.[3163] The European Union contends that, in respect of "sales of A330 family LCA to customers that placed orders during the original 2004-2006 reference period", "{t}he original panel found that, for those sales, the significant price suppression continued from the initial order through each of the aircraft deliveries".[3164] Actually, no explicit statement to that effect appears in the panel report. The only discussion of the role of deliveries appears in the context of the panel's finding that lost sales of A330 and Original A350

[3159] United States' first written submission, paras. 845-868; second written submission, paras. 999-1034 and 1131-1186.

[3160] Canada's third-party submission, para. 41.

[3161] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1685.

[3162] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1686. (fn omitted)

[3163] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1781-7.1788.

[3164] European Union's first written submission, para. 1231 (emphasis omitted). We note that with regard to the panel's findings of significant price suppression and significant lost sales in the 100 to 200 seat LCA product market, the Appellate Body noted that it was "uncertain whether the Panel was referring to orders, or to deliveries, or whether it was referring to such orders or deliveries occurring inside or outside the reference period". (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1222).

LCA constituted evidence of a threat of displacement or impedance of exports from certain third country markets.[3165]

9.309. Moreover, the Appellate Body made findings of significant price suppression and lost sales solely based on orders without referring to deliveries. Following its reversal of the panel's findings of significant price suppression and significant lost sales in the 100 to 200 and 300 to 400 seat LCA product markets[3166], the Appellate Body proceeded to complete the analysis through an analysis of evidence related to specific sales campaigns. The Appellate Body made no reference to the role of deliveries in this regard.[3167]

9.310. Thus, it is somewhat unclear whether and, if so, how the idea that price suppression and lost sales "exist from the time an order is made, up to and including its delivery" is reflected in the actual findings of significant price suppression and lost sales made in the original proceeding. More importantly, however, we consider that the European Union's reliance on this idea as a basis for a finding that the United States has failed to take appropriate steps to remove the adverse effects reflects an interpretation of Article 7.8 that we find problematic. Moreover, we consider that certain factual arguments of the European Union in support of its claim that the particular adverse effects found to exist in the original proceeding have continued into the post-implementation period are contradicted by the evidence before us and/or inconsistent with the findings made in the original proceeding.

9.311. We consider that the European Union's approach poses the following problems with respect to the interpretation of Article 7.8 of the SCM Agreement.

9.312. First, the European Union's argument involves an assumption that the phrase "take appropriate steps to remove the adverse effects" in Article 7.8 must be interpreted to mean that a Member found to be granting or maintaining an actionable subsidy is obligated to ensure that the particular adverse effects found to exist in respect of the specific transactions during the original reference period cease to exist *in respect of those same transactions*.[3168] We doubt whether such an interpretation of "remove the adverse effects" is meaningful in a practical sense. It is not clear, for example, how it is possible in practice for a Member to take steps to ensure that significant price suppression found in relation to specific transactions during the original reference period does not continue *in respect of those same transactions* in the post-implementation period or that a significant lost sale found in the original reference period in respect of a specific transaction does not continue to constitute a lost sale *in respect of that transaction* in the post-implementation period. The European Union never explains what kind of action the United States could have taken with respect to that undelivered aircraft that would have removed the "present" adverse effects.

9.313. Second, the idea that "to take appropriate steps to remove the adverse effects" entails an obligation to ensure that adverse effects must be "removed" from the specific transactions that formed the basis for the adverse effects findings in the original proceeding is also difficult to reconcile with the prospective interpretation of Article 7.8.[3169] The European Union has explicitly endorsed such a prospective reading of Article 7.8, arguing that "{t}he removal of adverse effects does not refer to the removal of adverse effects in the past. It refers to the withdrawal of adverse effects in the sense of *ensuring that there are no adverse effects arising in the new reference period*".[3170] In our view, the European Union has not explained how the "historic" aspect of its claim of present adverse effects in relation to the A330 and the A350XWB is consistent with this prospective approach to the interpretation of Article 7.8. In our view, to interpret "to take appropriate steps to remove the adverse effects" to mean "ensuring that no adverse effects arise in the new reference period", is very different from interpreting this phrase to mean that a Member

[3165] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1791.
[3166] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1249.
[3167] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1262-1274.
[3168] See e.g. European Union's first written submission, paras. 1330 ("the United States has failed to remove the adverse effects from those 787 sales that were found in the original proceedings to be caused by the subsidies"), 1331 ("{t}he United States has failed to remove the adverse effects associated with each of these sales"), 1339 ("{b}elow, the European Union demonstrates that the United States has not removed the adverse effects related to these significant lost sales at Qantas, Ethiopian Airlines, Icelandair and Kenya Airways. These sales constitute present significant lost sales to the extent that deliveries flowing from those sales remain outstanding.")
[3169] See Section 6.3 above.
[3170] European Union's first written submission, para. 49. (emphasis added)

is obligated "to remove the adverse effects associated with each of {the} sales"[3171] that were found to be lost sales in the original proceeding.

9.314. We disagree, in this regard, with the notion that where aircraft the subject of a past order found in the original proceeding to be a lost sale are undelivered at the time of the expiry of the implementation period, this is a "present" adverse effect. The European Union appears to consider that the fact that aircraft will be delivered in the post-implementation period means that there is an "adverse effect arising in the new reference period".[3172] In our view, the fact that aircraft are undelivered after the expiry of the implementation period is not a "present" adverse effect arising in the post-implementation period but a consequence or manifestation of an event that occurred in the past. Because of the inherent relationship between orders and deliveries, we fail to see how the United States could have taken any steps with respect to outstanding deliveries without retroactively affecting the underlying orders. More generally, we consider that the European Union's "historic" case essentially attempts to show present adverse effects on the basis of phenomena that are not effects that presently arise from subsidies granted or maintained at "present" but are more accurately described as continuing manifestations or effects of past adverse effects. In our view, to interpret Article 7.8 to mean that a Member is obligated to remove the "effects of adverse effects" of subsidies granted in the past is in contradiction with the prospective interpretation of that provision.

9.315. In addition to these legal and conceptual problems, we find that the European Union's argument that the adverse effects, in the form of certain kinds of serious prejudice within the meaning of Articles 5(c) and 6.3, found to exist in the original proceeding in respect of particular transactions in the 200-300 seat LCA product market, continue into the post-implementation period, is in several respects contradicted by the evidence before us and/or inconsistent with relevant findings made in the original proceeding.

9.316. Regarding the alleged continuation of serious prejudice in the form of *significant price suppression of A330 LCA*[3173], we recall that as support for its argument that follow-on orders by airlines that had purchased A330s at significantly suppressed prices in 2004-2006 were also made at significantly supressed prices, the European Union relies on the average A330 pricing trend during the period 2001-2012 and on a comparison of average prices of follow-on orders by those airlines during the period 2007-2012 with average prices of A330 orders paid by all other customers in that period.[3174]

[3171] See fn 3168 above.

[3172] The European Union states, for example, in respect of aircraft the subject of orders found to be lost sales in the original proceeding that "{t}o the extent they remain undelivered, they represent present adverse effects to the European Union in the form of significant lost sales to the EU LCA industry that the United States has failed to remove". (European Union's first written submission, para. 1342).

[3173] We do not consider that, as argued by the United States, the European Union's argument that the A330 is now in a monopoly market means that the European Union has failed to make a *prima facie* case because it has not established that the A330 is "in the same market" as any Boeing aircraft. The European Union's claim of significant price suppression in relation to the A330 is not based on the existence of current competition between the A330 and any subsidized Boeing aircraft. The European Union's case with respect to the A330 is that the 2004-2006 adverse effects experienced by the A330 have "lingered" and that the A330 continues to experience price suppression as a result. The European Union's argument is that "much of the present significant price suppression is a continuation or extension of significant price suppression that arose in the 2004-2006 period, when the products were in the same product market". (European Union's response to Panel question No. 170, para. 557). According to the internal logic of the European Union's case, the A330 may have moved into a different market from the 787 but the "lingering" effects of the original serious prejudice caused by the 787 when the A330 and the 787 were in the same market continue regardless. Therefore, because of this particular causation theory relied upon by the European Union, it is possible for the European Union's claim to be sustained even if the A330 currently exists in its own market. Thus, there is no basis to find that by asserting that the A330 is in a market of its own, the European Union has failed to make a *prima facie* case under Article 6.3(c) of the SCM Agreement.

[3174] European Union's first written submission, paras. 1242-1246. The European Union asserts that the average A330 family price trend supports the conclusion that Airbus **[***]**, even though Airbus' input costs have increased steadily over the 2005-2012 period. (European Union's first written submission, paras. 1244 and 1245). The European Union asserts that the comparison of average prices of follow-on orders with average prices of orders of A330s to other customers during the period 2007-2012 shows that average prices for the follow-on orders **[***]** and that, while average prices for both sets of customers **[***]**, average prices for follow-on orders by customers that ordered A330s in 2004-2006 **[***]** than orders by other customers. (European Union's first written submission, para. 1246).

9.317. As noted above, the European Union also argues that the pre-2007 aeronautics R&D subsidies cause significant price suppression with respect to post-2006 orders (and related deliveries) of A330s to all customers other than those that purchased A330s in the original reference period.[3175] The European Union asserts that this is supported by evidence showing that the average indexed pricing of A330 family orders **[***]** notwithstanding that Airbus made substantial investments in the A330 since 2004 to improve its performance and faced steadily rising input costs.[3176] The European Union argues that the fact that Airbus was unable to **[***]** A330 prices was the effect of the pre-2007 U.S. aeronautics R&D subsidies.[3177]

9.318. We note that the pricing data that the European Union presents in support of its argument that significant price suppression of the A330 found to exist in the original reference period has continued into the post-implementation period only covers the period up to 2012[3178] and was not updated to cover the post-implementation period. Although in October 2015 the Panel requested the European Union to update the data on which it relied to substantiate its serious prejudice case, the European Union did not update much of the data on which it relies to demonstrate that the A330 has suffered significant price suppression in the post-implementation period.[3179]

9.319. In any case, much of that data is directed to an argument that A330 prices have never recovered to their 2003 highs, and that therefore "something" is holding down A330 prices. However, it is not clear to us why Airbus could have legitimately expected A330 prices to ever "recover" to their pre-2004 levels, when the A330 was the technological market leader, given the reality that since then, the 787 and A350XWB have changed the competitive dynamics of this market. The A330 still has a place in the market and its sales still appear robust, but there is no reason to think it could command the sort of price it once did.

9.320. Finally, we note that data presented by the United States demonstrates that there is no correlation in price movements between the A330 and the 787. Specifically, **[***]**.[3180]

9.321. Thus, even setting aside the problems with the European Union's A330 price suppression arguments that arise due to the "historic" nature of its case[3181], we find that the European Union has failed to empirically demonstrate that the A330 is suffering significant price suppression in the post-implementation period.[3182]

9.322. Regarding the European Union's argument that price suppression found to exist in the original proceeding continues into the post-implementation period as *significant price suppression of the A350XWB*[3183], we are of the view that this argument is in contradiction with the fact that the price suppression that occurred in 2004-2006 was price suppression of a different aircraft, the

[3175] See para. 9.300 above.
[3176] European Union's first written submission, paras. 1247-1250.
[3177] European Union's first written submission, paras. 1252-1264.
[3178] European Union's first written submission, paras. 1245 (figures 2 and 3), 1246 (figure 4), and 1250 (figures 5 and 6).
[3179] European Union's response to Panel question Nos. 169 and 170. The European Union provided information on the post-2012 evolution of average A330 prices. However, it did not update the data presented in its first written submission concerning the discrepancy in the evolution of A330 average pricing and Airbus' input costs and the data on A330 prices in 2007-2012 in follow-on orders by customers who ordered A330s in 2004-2006 compared with A330 prices paid by new customers in that period.
[3180] United States' comments on European Union's response to Panel question Nos. 169 and 170, para. 203.
[3181] See paras. 9.311-9.314 above.
[3182] The empirical problems with the European Union's price trend data are discussed in further detail in Section 9.4.3.1.4 below in connection with the Panel's evaluation of the European Union's claims of significant price suppression of the A320neo and A320ceo. A number of the problems identified in that Section regarding the price trend data for the A320neo and A320ceo apply equally to the European Union's price trend data for the A330. First, since a claim of significant price suppression requires establishing where prices would have been in the absence of the subsidies, price trend data alone is not sufficient to demonstrate the existence of this market phenomenon; it is also necessary to present counterfactual argumentation demonstrating that, in the absence of the subsidies, prices would have been higher (see paras. 9.450 through 9.462 below for further explanation). Second, we consider that the European Union cannot rely on sales campaigns that *Boeing* won to substantiate its claims that *Airbus* LCA prices were suppressed (see 9.457 through 9.460 below for further explanation). Third, the European Union ultimately appears to repudiate its own price trend data on the basis of methodological flaws (see paras. 9.463 and 9.464 below for further explanation).
[3183] European Union's first written submission, paras. 1277-1289; second written submission, paras. 1465-1481; response to Panel questions Nos. 152, paras. 10 and 11, and 170, paras. 559-563.

Original A350[3184] and that the original panel rejected the European Union's argument that the price suppression of the Original A350 would necessarily lead to price suppression of the A350XWB when the orders were converted.[3185]

9.323. We consider that the European Union's argument that the serious prejudice, in the form of significant lost sales found to exist in the original reference period, continues into the post-implementation period as *significant lost sales of A350XWB* is inconsistent with the findings made in the original proceeding in that, first, the original panel made findings of significant lost sales in respect of the A330 and Original A350, not the A350XWB and, second, the European Union relies on several sales campaigns in respect of which no findings of significant lost sales were actually made in the original proceeding.

9.324. First, the original panel found, with respect to four sales campaigns, that, but for the effects of aeronautics R&D subsidies that had contributed in a genuine and substantial way to Boeing's development of technologies for the 787, "Airbus would have made additional sales of the A330 and Original A350 over the same period, and to that extent, would not have suffered significant lost sales in the 200-300 seat wide-body LCA product market, within the meaning of Article 6.3(c) of the SCM Agreement".[3186] Thus, the relevant findings of lost sales made in the original proceeding pertained to the A330 and Original A350.

9.325. The European Union argues in this proceeding that the United States has failed to "remove{} the adverse effects related to these significant lost sales at Qantas, Ethiopian Airlines, Icelandair and Kenya Airways" because "{t}hese sales constitute present significant lost sales to the extent that deliveries flowing from those sales remain outstanding".[3187] The European Union makes this argument as support for its claim that "the US subsidies benefiting Boeing's 787 family LCA presently cause present adverse effects, in the form of significant lost sales of A350XWB family LCA".[3188] In other words, the European Union effectively argues that the significant lost sales that it alleges have continued to exist at present because the aircraft remain undelivered are significant lost sales of the A350XWB rather than of the A330 and A350 in respect of which the findings of significant lost sales were made in the original proceeding. The European Union does not request the Panel to make a finding of present adverse effects in the form of significant lost sales to the A330 and Original A350. In our view, the European Union has not provided a convincing explanation as to why "it is irrelevant whether or not the 787 orders found to be lost sales in the original reference period are lost sales for the A350XWB, rather than the A330 or Original A350".[3189] The lost sales, which according to the European Union's theory that lost sales continue until the aircraft are delivered, the United States failed to remove as a result of the fact that the deliveries of the Boeing 787 remained outstanding at the expiry of the implementation period, were lost sales of A330 and Original A350 aircraft. There is no logical basis to now treat those lost sales as lost sales of A350XWB LCA. We do not see how the fact that the 787 and the

[3184] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1792.
[3185] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1793.
[3186] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1794; see also para. 7.1786. The Appellate Body discussed this panel finding at paragraphs 1056-1063 of its report.
[3187] European Union's first written submission, para. 1339.
[3188] European Union's first written submission, para. 1329.
[3189] European Union's second written submission, para. 1207:

> However, for the US failure to remove the adverse effects, it is irrelevant whether or not the 787 orders found to be lost sales in the original reference period are lost sales for the A350XWB, rather than the A330 or Original A350. Instead, when the subsidies caused the airlines to order these 787 aircraft under conditions of competition *contemporaneous with the original reference period*, these orders represented lost sales to the A330 or Original A350, as these were the Airbus aircraft that competed with the 787 in the same product market at that point in time. That the 787 competes in the same product market with the A350XWB under *present* conditions of competition does *not* alter the fact that, under conditions of competition *contemporaneous* with the original reference period, the original panel and the Appellate Body found that Airbus suffered lost A330 and Original A350 sales to the 787. With its argument, the United States ignores the findings in the original proceedings, which served as the basis for the DSB's recommendations and rulings.

(emphasis original)
See also European Union's second written submission, para. 1209.

A350XWB now compete in the same product market[3190] can alter the fact that at the time the 787 sales were made, they caused lost sales of the A330 and Original A350, not the A350XWB, which had not even been launched at that time.

9.326. Therefore, even assuming that, in light of the panel's observation that lost sales "continue up to and including the time at which that aircraft is delivered", sales of Boeing 787 that were found to be lost sales in respect of Airbus LCA in the original proceeding should be considered to give rise to present serious prejudice where the aircraft have not been delivered, there is no basis to find any such present serious prejudice in relation to the A350XWB.

9.327. Second, the European Union relies on the notion that adverse effects in the form of significant lost sales continue where the aircraft remain undelivered not only with regard to the sales campaigns that resulted in findings of lost sales but also in relation to certain sales campaigns in respect of which the Panel in the original proceeding found that the aeronautics R&D subsidies at issue were not a cause of lost sales to Airbus.[3191] The original panel found that in ten sales campaigns[3192], including the five sales campaigns that the European Union treats as "additional significant lost sales in the original reference period"[3193], "factors other than the performance characteristics of the 787 over the A330 or Original A350, and the 2008 delivery date for the 787, played a significant part in the Boeing sale".[3194]

9.328. The European Union submits with respect to these additional lost sales that the claim it presented in the original proceeding "remains unresolved". While the Appellate Body found that the original panel erred in not cumulating the price effects of the B&O tax rate reductions with the technology effects of the aeronautics R&D subsidies in causing significant lost sales[3195] and also clarified the causation standard in a way that implies that the non-subsidy factors identified by the original panel as having contributed to the 787 sales at issue cannot be the basis for vitiating a genuine and substantial causal link[3196], the Appellate Body found itself unable to complete the analysis.[3197] The European Union argues for each of these additional sales that "to the extent deliveries remain outstanding, these 787 sales constitute present significant lost sales, and that the US subsidies are a genuine and substantial cause thereof", including follow-on orders and option exercises resulting from those sales.[3198]

9.329. We consider that the European Union is factually incorrect when it argues that the matter was left unresolved because the Appellate Body did not complete the analysis.[3199] Indeed, as noted by the United States[3200], these sales campaigns were not left unresolved: the panel's finding in the original proceeding that these sales campaigns were not lost sales attributable to the subsidies was not appealed. The Appellate Body found that the original panel erred in assuming that different causal mechanisms precluded cumulation of two aggregated groups of subsidies. However, contrary to the European Union's assertion, the Appellate Body did not find that subsidies with a technology and price causal mechanism should be cumulated. The Appellate Body did not attempt to complete the analysis because the European Union did not request it to do so.[3201] Since no findings of lost sales were made in the original proceeding in respect of the five

[3190] European Union's second written submission, para. 1209.
[3191] European Union's first written submission, paras. 1345-1406.
[3192] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1786 and fn 3724.
[3193] European Union's first written submission, para. 1345. Specifically, the European Union's argument concerns the following sales campaigns: (a) All Nippon Airways (2004, 2009 and 2012); (b) Japan Airlines (2005, 2007 and 2012); (c) Air Canada (2005 and 2007); (d) Continental Airlines (2004, 2006 and 2007); and (e) Northwest Airlines (2005). Thus, in most of these cases, the European Union includes both the orders at issue in the original proceeding and follow-on orders.
[3194] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1786 and fn 3725.
[3195] European Union's first written submission, paras. 1347-1349 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1321).
[3196] European Union's first written submission, paras. 1350 and 1351 (referring to Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 913).
[3197] European Union's first written submission, paras. 1349 and 1351.
[3198] European Union's first written submission, para. 1352.
[3199] European Union's first written submission, paras. 1345, 1349, and 1351; second written submission, para. 1212.
[3200] United States' second written submission, paras. 1005-1012.
[3201] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1321: "{b}y closing its mind to such an approach, 'owing to the very different way' in which the two groups of subsidies operate and their 'entirely distinct causal mechanisms', the Panel failed to give full consideration to the possibility of cumulating

sales campaigns that the European Union treats as "additional lost sales in the original reference period", the question of whether any lost sales have continued into the post-implementation period on the grounds that the aircraft at issue have not been delivered does not arise.

9.330. In sum, the nine sales campaigns considered in the original proceeding upon which the European Union relies in this proceeding to support its argument that adverse effects in the form of lost sales found in the original proceeding continue with respect to the A350XWB include four sales campaigns in which findings of lost sales were made in respect of a product other than the A350XWB and five sales campaigns in which no finding of lost sale was made at all.[3202]

9.331. Finally, in support of its argument that the serious prejudice found to exist in the original proceeding continues at present as serious prejudice in respect of the A350XWB, the European Union also asserts that the United States has failed to remove the threat of displacement from the Australian market because there continue to be outstanding deliveries of 787 family LCA to Qantas under the order that formed the basis for this finding in the original proceeding.[3203] First, we have explained above that we find that this type of argument is problematic in terms of the underlying interpretation of Article 7.8. Second, we note that the original panel based its finding of a threat of displacement on a sales campaign involving the Original A350.[3204] There is no basis to treat this now as a finding of a threat of displacement in respect of the A350XWB. As in the case of the European Union's argument that serious prejudice in the form of lost sales found to exist in the original proceeding in respect of the A330 and Original A350 continues as serious prejudice in respect of the A350XWB, we consider that the European Union does not offer a convincing reason to explain why a particular form of serious prejudice found to exist during the original reference period in respect of a particular aircraft should now be considered to continue to exist as a form of serious prejudice in respect of a different aircraft.

9.332. **We reject the European Union's argument that certain past serious prejudice of the pre-2007 aeronautics R&D subsidies continue into the post-implementation period as present serious prejudice in relation to the A330 and A350XWB. This is because: (a) the European Union's reliance on the role of deliveries of aircraft in the post-implementation period as evidence of a continuation of serious prejudice (and more generally its theory that Article 7.8 applies to continuing effects of past adverse effects) is inconsistent with a prospective interpretation of Article 7.8 and leads to results that we consider to be illogical; and (b) the European Union's arguments are unsupported by the evidence and/or in contradiction with the findings made in the original proceeding.**

9.3.4 Summary of findings on whether subsidies benefiting the 787 and 777X cause serious prejudice to the interests of the European Union in respect of the A350XWB and A330 in the post-implementation period

9.333. As regards the European Union's main case; i.e. whether the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies, operating through a technology causal mechanism, combined with the other post-2006 subsidies operating through a price causal mechanism, cause serious prejudice to the interests of the European Union in respect of the A350XWB in the post-implementation period, we find as follows:

a. The European Union has failed to demonstrate the existence of original technology effects of the pre-2007 aeronautics R&D subsidies, or of so-called spill-over technology effects or sleeper technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 787-9/10 or 777X, in the post-implementation period.

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the effects of these two groups of subsidies. We therefore *find* that the Panel erred in failing to consider whether the price effects of the B&O tax rate reductions complement and supplement the technology effects of the aeronautics R&D subsidies in causing significant lost sales and significant price suppression, and a threat of displacement and impedance, in the 200-300 seat LCA product market. The European Union does not request us to complete the analysis on this issue." (emphasis original, fn omitted)

[3202] For these reasons, we consider that these nine sales campaigns also cannot support the European Union's argument that the lost sales found in the original proceeding constitute evidence of (threat of) impedance of exports of A350XWB.

[3203] European Union's first written submission, para. 1569.

[3204] For the finding of the original panel, see Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1791.

b. The European Union has failed to demonstrate the existence of so-called new technology effects of certain post-2006 aeronautics R&D subsidies in respect of the 787-9/10 or 777X in the post-implementation period.

c. The European Union has failed to demonstrate any effect of the tied tax subsidies, the state and local cash flow subsidies, or the post-2006 aeronautics R&D subsidies on Boeing's 787 or 777X pricing in the post-implementation period.

d. Because the European Union has failed to demonstrate any effect of the pre-2007 aeronautics R&D subsidies, or of certain post-2006 aeronautics R&D subsidies, on Boeing's product development in respect of the 787 or 777X in the post-implementation period, there is no basis on which these subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period through a technology causal mechanism. By the same token, because the European Union has failed to demonstrate any effect of the post-2006 subsidies (tied tax subsidies, state and local cash flow subsidies and aeronautics R&D subsidies) on Boeing's 787 or 777X prices in the post-implementation period, the possibility of any consequent impact of those subsidies on sales and prices of the A350XWB does not arise, and there is no basis on which those subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A350XWB in the post-implementation period through a price causal mechanism.

9.334. We also find, with respect to the European Union's parallel argument, that the European Union has also failed to establish that certain forms of past serious prejudice, which were the effects of the pre-2007 aeronautics R&D subsidies, continue into the post-implementation period as present serious prejudice in respect of the A330 and A350XWB.

9.335. **The European Union has therefore failed to establish that subsidies benefiting the 787 and 777X cause serious prejudice to its interests, within the meaning of Articles 5(c) and 6.3, in respect of the A350XWB and A330 in the post-implementation period.**

9.4 Whether subsidies benefiting the 737 MAX and 737NG cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A320neo and A320ceo in the post-implementation period

9.4.1 Introduction

9.336. In this Section we evaluate the European Union's case that the United States grants or maintains subsidies to Boeing benefiting the 737 MAX and 737NG, which cause present adverse effects in the form of certain kinds of serious prejudice to the European Union's interests in respect of the A320neo and A320ceo, respectively, in the post-implementation period. The European Union has divided its discussion of the effects of the U.S. subsidies benefiting the 737 MAX and adversely affecting the A320neo, and of the effects of the U.S. subsidies benefiting the 737NG and adversely affecting the A320ceo, on the basis that the narrow-body, single-aisle LCA product market actually consists of two product markets: the market for new technology single-aisle LCA (comprising the 737 MAX and A320neo) and the market for existing technology LCA (comprising the 737NG and the A320ceo). For reasons we explain in paragraphs 9.35 through 9.40 above, we disagree with the European Union's proposed market delineation and instead treat the new technology A320neo and 737 MAX as competing in the same product market for narrow-body, single-aisle aircraft as the existing technology A320ceo and 737NG.

9.337. As previously explained, the European Union for the most part presents its arguments as to how certain aeronautics R&D subsidies operate through a technology causal mechanism, and how the majority of post-2006 subsidies operate through a price causal mechanism, on a horizontal basis; i.e. based on the nature of the particular subsidy or subsidy groups at issue, rather than the particular Boeing LCA said to be subsidized by the various subsidies in combination.[3205] Accordingly, in Section VII.E of its first written submission, the European Union

[3205] See e.g. European Union's first written submission, section VII.E (Technology Causal Mechanism) and section VII.F (The U.S. Subsidies Cause Adverse Effects Through a Price Causal Mechanism), dealing in a

purports to establish a "genuine" and "substantial" causal link between certain aeronautics R&D subsidies and "present adverse effects through a technology effects causal mechanism".[3206] In Section VII.F of its first written submission, the European Union purports to establish a "genuine" and "substantial" causal link between the majority of the post-2006 subsidies and present adverse effects through a price causal mechanism.[3207]

9.338. In Section VII.I of its first written submission, dealing with the effects of the subsidies benefiting the 737 MAX on the A320neo, the European Union presents its case that the effects of: (a) certain aeronautics R&D subsidies which improve the quality and accelerate the launch and delivery positions of the 737 MAX LCA family aircraft (the technology causal mechanism); and (b) the majority of the post-2006 subsidies which enable Boeing to lower its 737 MAX prices (the price causal mechanism), *collectively*, are a *genuine and substantial* cause of: significant lost sales (and a threat of significant lost sales) of the A320neo; significant price suppression (and a threat of significant price suppression) of the A320neo; impedance and a threat of impedance of the A320neo in the U.S. market and a number of third country markets.[3208]

9.339. In Section VII.J of its first written submission, dealing with the effects of the subsidies benefiting the 737NG on the A320ceo, the European Union presents its case that the effects of the majority of the post-2006 subsidies which enable Boeing to lower its 737NG prices (the price causal mechanism) are a *genuine and substantial* cause of: significant lost sales (and a threat of significant lost sales) of the A320ceo; significant price suppression of the A320ceo; displacement, impedance and a threat of thereof of the A320ceo in the U.S. market and a number of third country markets.[3209]

9.340. The European Union's serious prejudice allegations concerning the effects of the subsidies benefiting the 737 MAX and 737NG on the A320neo and A320ceo, respectively, are as follows:

a. Significant lost sales, within the meaning of Article 6.3(c) of the SCM Agreement, and a threat thereof.[3210]

b. Impedance of imports of the A320neo and A320ceo to the United States, within the meaning of Article 6.3(a) of the SCM Agreement, and a threat thereof.[3211]

c. Impedance and/or displacement of exports of the A320neo and A320ceo, within the meaning of Article 6.3(b) of the SCM Agreement, to the third-country markets of Australia[3212], Brazil[3213], Canada[3214], Iceland[3215], Indonesia[3216], Malaysia[3217], Mexico[3218],

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horizontal fashion with the arguments concerning the technology causal mechanism and price causal mechanism, compared to section VII.H (Effects of U.S. Subsidies Benefiting the 787 and 777X on the A330 and A350XWB), section VII.I (Effects of U.S. Subsidies Benefiting the 737 MAX on the A320neo), and section VII.J (Effects of the U.S. Subsidies Benefiting the 737NG on the A320ceo), dealing with the collective effects of all of the subsidies benefiting the various Boeing aircraft on the competing Airbus aircraft.

[3206] See European Union's first written submission, para. 1205.

[3207] See European Union's first written submission, para. 1223.

[3208] European Union's first written submission, paras. 1616 and 1617.

[3209] European Union's first written submission, paras. 1840 and 1841.

[3210] As evidenced by a number of LCA sales campaigns involving the 737 MAX in competition with the A320neo occurring between 2007 and 2015 and involving the 737NG in competition with the A320ceo. The relevant sales campaigns and aircraft are set forth in Section 9.4.3.1.1 below.

[3211] As evidenced by certain sales campaigns alleged to be significant lost sales of the A320neo and A320ceo, respectively, and involving a U.S. customer. The relevant sales campaigns are American Airlines 2011, Southwest Airlines 2011 and 2013, Delta Airlines 2011 and United Airlines 2012 and 2013. As regards the impedance, and threat thereof, of imports with respect to the A320ceo, the European Union argues that, in a duopoly environment, "rough parity in the distribution of market shares between the duopolists would be expected", while the effect of the U.S. subsidies is that the vast majority of present and future deliveries of existing technology single-aisle LCA will be 737NG family aircraft. (European Union's first written submission, paras. 1903-1905). The European Union provides data concerning orders to date and deliveries due in the United States for the 737NG and A320ceo. (See European Union's response to Panel question No. 169, para. 509).

[3212] Displacement of exports of the 320ceo. (European Union's first written submission, paras. 1908-1910; second written submission, paras. 1959-1961; response to Panel question No. 169, para. 511).

[3213] Threat of impedance of exports of the A320neo: European Union's first written submission, paras. 1831 and 1832; second written submission, paras. 1850-1852; and response to Panel question No. 169, para. 493. The European Union adds that the GOL (2012) campaign won by the 737 MAX is a lost sale of the

Norway[3219], Russia[3220], Singapore[3221], and the United Arab Emirates, and a threat thereof.[3222]

d. Significant price suppression of the A320neo and A320ceo and a threat thereof.[3223]

A320neo due to the U.S. subsidies and is further evidence of the existence of a threat of impedance of exports of the A320neo in the Brazilian market. In its first written submission, the European Union also argued that the Brazilian market is a significantly large geographical market for new technology, single-aisle LCA and that in a duopoly environment, "rough parity in the distribution of market shares between the duopolists would be expected". (European Union's first written submission, para. 1831). Threat of displacement of exports of the A320ceo: European Union's first written submission, paras. 1911 and 1912.

[3214] Threat of impedance of exports of the A320neo: European Union's response to Panel question No. 169, para. 494. The European Union adds that the Air Canada (2013) campaign won by the 737 MAX is a lost sale of the A320neo due to the U.S. subsidies and is further evidence of the existence of a threat of impedance of exports of the A320neo in the Canadian market. (European Union's response to Panel question No. 169, para. 495). Impedance and threat of impedance of the A320ceo: European Union's first written submission, paras. 1913-1914; second written submission, paras. 1953-1954; and response to Panel question No. 169, paras. 512 and 513.

[3215] Threat of impedance of exports of the A320neo: European Union's first written submission, para. 1834; second written submission, paras. 1853-1855; and response to Panel question No. 169, para. 498.

[3216] Threat of impedance of exports of the A320neo: European Union's first written submission, para. 1835; second written submission, paras. 1856-1858; and response to Panel question No. 169, para. 499. The European Union adds that the Lion Air (2012) campaign won by the 737 MAX is a lost sale of the A320neo due to the U.S. subsidies and is further evidence of the existence of a threat of impedance of exports of the A320neo in the Indonesian market. (European Union's response to Panel question No. 169, para. 500). Displacement, impedance and threat of impedance of the A320ceo: European Union's first written submission, paras. 1915-1920; second written submission, paras. 1955-1958; and response to Panel question No. 169, paras. 514-516. The European Union refers to Lion Air's 2012 sales campaign, which it alleges is a lost sale of the A320ceo due to the U.S. subsidies as a further illustration that Airbus would have achieved greater future deliveries in the Indonesian existing technology single-aisle market absent the U.S. subsidies.

[3217] Displacement of exports of the A320ceo, and threat thereof: European Union's first written submission, paras. 1921 and 1922; second written submission, paras. 1953-1954; response to Panel question No. 169, paras. 517-519.

[3218] Threat of impedance of exports of the A320neo: European Union's first written submission, para. 1836; second written submission, paras. 1859-1861; and response to Panel question No. 169, para. 501.

[3219] Threat of impedance of exports of the A320neo: European Union's first written submission, para. 1837; second written submission, paras. 1862-1864; and response to Panel question No. 169, para. 502. The European Union adds that the portion of the Norwegian Air Shuttle (2012) campaign won by the 737 MAX is a lost sale of the A320neo due to the U.S. subsidies and is further evidence of the existence of a threat of impedance of exports of the A320neo in the Norwegian new technology single-aisle market. (European Union's response to Panel question No. 169, para. 502). Impedance and threat of impedance of exports of the A320ceo: European Union's first written submission, paras. 1923 and 1924; second written submission, paras. 1953 and 1954; and response to Panel question No. 169, paras. 520 and 521. The European Union refers to Norwegian Air Shuttle's 2012 sales campaign, which it alleges is a lost sale of the A320ceo due to the U.S. subsidies as a further illustration that Airbus would have achieved greater future deliveries in the Norwegian existing technology single-aisle market absent the U.S. subsidies.

[3220] Displacement and threat of displacement of exports of the A320ceo: European Union's first written submission, paras. 1925 and 1926; second written submission, paras. 1953 and 1954; and response to Panel question No. 169, paras. 522 and 523.

[3221] Threat of impedance of exports of the A320neo: European Union's first written submission, para. 1838; second written submission, paras. 1865-1867; and response to Panel question No. 169, para. 503. The European Union adds that the Silk Air (2012 and 2015) campaigns won by the 737 MAX are lost sales of the A320neo due to the U.S. subsidies and further evidence of the existence of a threat of impedance of exports of the A320neo to the Singaporean market. (European Union's response to Panel question No. 169, para. 504). Displacement and impedance of exports of the A320ceo (and threats thereof): European Union's first written submission, paras. 1927 and 1928; second written submission, paras. 1955-1958; and response to Panel question No. 169, paras. 524 and 525. The European Union refers to Silk Air's 2012 sales campaign, which it alleges is a lost sale of the A320ceo due to the U.S. subsidies as a further illustration that Airbus would have achieved greater future deliveries in the Singaporean existing technology single-aisle market absent the U.S. subsidies.

[3222] Threat of impedance of exports of the A320neo: European Union's response to Panel question No. 169, paras. 349-374 and 505. The European Union adds that the Fly Dubai (2013) campaign won by the 737 MAX is a lost sale of the A320neo due to the U.S. subsidies and is further evidence of the existence of a threat of impedance of exports of the A320neo in the United Arab Emirates market. Displacement, impedance (and threats thereof) of exports of the A320ceo: European Union's first written submission, paras. 1929-1932; second written submission, paras. 1953-1954; and response to Panel question No. 169, paras. 526-528. The European Union refers to Fly Dubai's 2008 and 2014 sales campaigns, which it alleges resulted in lost sales of the A320ceo due to the U.S. subsidies as a further illustration that Airbus would have achieved greater future deliveries in the United Arab Emirates existing technology single-aisle market absent the U.S. subsidies.

9.341. The Panel adopts a unitary approach to establishing causation, under which prices, sales, market share, and other indicators of competitive harm are not assessed in isolation, but rather as part of an integrated causation analysis.[3224] Our analysis is counterfactual in nature. We ask whether, but for the effects of the various subsidies, Airbus' sales, prices and market share would be higher. We will analyse the effects of the subsidies in two related phases: First, we examine the effects, if any, of the relevant category of subsidies on *Boeing's product development and pricing* of the 737 MAX and *pricing* of the 737NG; and second, we examine whether any such effects of the subsidies in question on Boeing's product development and prices have the alleged impact on A320neo and A320ceo sales and prices in the post-implementation period, such that these subsidies constitute a genuine and substantial cause of the particular forms of serious prejudice alleged by the European Union with respect to the A320neo and A320ceo.

9.342. In Section 9.4.2 we address whether the European Union has established that certain aeronautics R&D subsidies benefiting the 737 MAX cause serious prejudice with respect to the A320neo in the post-implementation period through a technology causal mechanism. In Section 9.4.3, we evaluate the European Union's arguments that the post-2006 subsidies benefiting the 737 MAX and 737NG cause serious prejudice with respect to the A320neo and A320ceo in the post-implementation period through a price causal mechanism.

9.4.2 Whether certain aeronautics R&D subsidies benefiting the 737 MAX cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A320neo in the post-implementation period, through a technology causal mechanism

9.343. As explained in Section 9.3.2.1.2, the European Union argues that one of the ways in which the pre-2007 aeronautics R&D subsidies continue to cause significant competitive harm to the European Union's LCA-related interests in the post-implementation period is through spill-over technology effects resulting from the application of the "subsidized 787 technologies" to Boeing's more recent aircraft developments, including the 737 MAX.[3225] Additionally, the European Union argues that certain post-2006 aeronautics R&D subsidies have given rise to new technology effects in that they have enabled Boeing to develop new technologies for its more recent aircraft developments, including the 737 MAX.[3226]

9.4.2.1 Spill-over technology effects of the pre-2007 aeronautics R&D subsidies

9.344. The European Union argues that Boeing's participation in the original NASA and DOD programmes enabled Boeing to incorporate larger, more fuel-efficient engines, enhanced aerodynamics, and modern flight controls onto the 737 MAX as inspired by the 787's design. Overall, the European Union asserts that the technologies applied to the 737 MAX represent a 13% fuel-burn savings over the 737NG.[3227] Without the contribution of the pre-2007 aeronautics R&D subsidies, Boeing would have been unable to develop the proprietary technology to launch the 737 MAX in August 2011 and promise first deliveries in 2017.[3228]

9.345. The European Union submits that Boeing's *incorporation of larger engines on the 737 MAX* is "one of the quintessential technology changes – and selling points – of the 737 MAX" and has contributed "a significant part" of the fuel burn advantage of the aircraft.[3229] The European Union

[3223] As evidenced by certain pricing and market share data for the A320neo and A320ceo as well as certain of the sales campaigns alleged to be significant lost sales and which are said to demonstrate a pattern of pricing behaviour in which Airbus was forced to lower its own prices in reaction to Boeing's aggressive pricing. (European Union's first written submission, paras. 1808-1810).

[3224] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1658.

[3225] European Union's first written submission, para. 984.

[3226] European Union's first written submission, para. 986.

[3227] European Union's first written submission, para. 1621.

[3228] European Union's first written submission, para. 1621. See also European Union's first written submission, paras. 1038-1060 and 1620; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 23-42 and 55-61.

[3229] European Union's first written submission, para. 993. The European Union submits that its argument is not directly related to the new engines, but instead, concerns Boeing's ability to integrate the engines through close coupling of the engine nacelles and through the use of CFD codes. It considers that Boeing's role as an integrator of different technologies was key in researching designing and developing the close coupling of the engines to the 787 wing. (European Union's second written submission, para. 1596).

alleges that Boeing's engine integration design on the 737 MAX was enabled by: (a) the close coupling of the engines to the wings, using new nacelles and new pylons, which Boeing had developed previously for the 787; and (b) CFD codes that were developed and enhanced under several original NASA aeronautics R&D programmes (HSR, AST, HPCC, and R&T Base).[3230] The minimal ground clearance inherent in the 737 design means that, absent the innovative engine integration design on the 737 MAX, Boeing would not have been able to apply the larger diameter CFM LEAP engines to the 737 MAX without either building a new wing for the 737 MAX or otherwise devising its own engine integration. Both alternatives would have been more expensive and involved greater risk.[3231]

9.346. The European Union contends that Boeing was able to make changes to the *aerodynamic shape of the overall aircraft using knowledge of CFD codes* developed under the pre-2007 aeronautics R&D subsidies. This includes the incorporation of a "787-style tail cone" for the conical tail cone of the 737 MAX that reduces drag by 1%. Finally, the European Union contends that Boeing was able to develop a partial fly-by-wire system on the 737 MAX incorporating manoeuvre and gust load alleviation based on Boeing's experience in introducing load alleviation systems on the 787.[3232] The European Union submits that assertions that there were no spill-over effects from the original pre-2007 aeronautics R&D subsidies affecting the 787 to the design of the 737 MAX tail cone and fly-by-wire spoilers are contradicted by Boeing statements made outside this dispute.[3233]

9.347. The United States argues that the acceleration effect of the pre-2007 aeronautics R&D subsidies was relatively short-lived, and to the extent there is any technological continuity leading to spill-over onto newer Boeing LCA such as the 737 MAX, the launch of the 787 in 2006 would have left ample time for Boeing to adapt technologies to the 737 MAX well before its actual launch.[3234] As regards the alleged technological connections between the 787 technologies and those developed for the 737 MAX, the United States makes a number of arguments in response to the European Union's assertions.

9.348. The United States argues that the 737 MAX "primarily involve{s}" improved engine technology, which is outside the scope of this dispute.[3235] Although the European Union attempts to link Boeing's engine integration design for the 737 MAX to the 787, Boeing's primary reference points for the 737 MAX engine installation were in fact production configurations for the 737NG and to a lesser degree the 777, along with earlier work **[***]**[3236] The United States explains that, starting in **[***]**, Boeing considered that improvements in engine technology had advanced to the point where a re-engined 737 might be viable, and began intensive product development studies and testing. This included wind tunnel tests at Boeing's Transonic Wind Tunnel in Seattle to

[3230] More specifically, the European Union alleges that, based on research conducted under the NASA Subsonic Fixed Wing Project on the "Multi-Objective Optimization of a Turbofan for an Advanced, Single-Aisle Transport", Boeing was able to develop a technical solution to close couple the engine nacelles (i.e. the outer casing of the engine) to the wing, allowing the engines to be located higher up and more forward relative to the wing leading edge, based on the use of advanced computational fluid dynamics (CFD) codes to determine optimal engine size and configuration.

[3231] European Union's first written submission, para. 1624; and Airbus Engineer's Statement, (Exhibit EU-31) (BCI), paras. 99 and 134.

[3232] The European Union submits that the 737 MAX's fly-by-wire system is based on Boeing's experience developing a more electric architecture for the 787. (European Union's first written submission, para. 1622). See also European Union's response to Panel question No. 165, paras. 139-141; and Boeing Presentation #18, (Exhibit EU-1680) (HSBI). This feature will specifically enable Boeing to reduce airframe weight, due to lower sustained structural loads, thereby allowing higher permissible airplane gross weights for take-off and landing and increasing payload range capability. (European Union's response to Panel question No. 165, para. 140 (referring to Boeing Presentation #18, (Exhibit EU-1680) (HSBI))).

[3233] European Union's second written submission, paras. 1598-1601; Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 111.

[3234] See United States' first written submission, paras. 3, 682, 703-711, 735-738, and 782-799; United States' second written submission, paras. 732-739, 743-849, 881-904, and 1187-1204; response to Panel question Nos. 45, 46, 47, 151, 152, 153, 156, 157, and 165; and comments on European Union's response to Panel question Nos. 45, 46, 47, 151, 152, 153, 156, 157, and 165.

[3235] United States' first written submission, para. 968. The United States submits this is "the same engine technology" as features on A320neo update. See also United States' first written submission, para. 972 and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 44.

[3236] United States' first written submission, para. 980 (citing Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 54).

evaluate engine installation configurations.[3237] Boeing concluded that, since **[***]**, Boeing would be able to make commitments for the 737 MAX to American Airlines in July 2011.[3238] As for the European Union's allegations regarding the contribution of CFD codes to the 737 MAX engine integration design, the United States argues, based on the statement of the Boeing engineers, that Boeing's would have replicated in six months its experience with CFD codes from its work under the various NASA aeronautics R&D programmes.[3239] Finally, the United States considers that while statements by the European Union that the chevron technology for the 787 is the same or similar to that of the 737 MAX **[***]**, the two types of chevrons are **[***]**.[3240]

9.349. The United States argues that the European Union's arguments regarding the alleged spill-over effects of the design of the conical tail cone for the 787 on the 737 MAX tail cone are based on "superficial similarity"[3241]. The two designs are only broadly similar in the sense that they are both conical.[3242] The Boeing engineers explain that, while the 737NG represented a hybrid between cone and blade, for the 737 MAX, Boeing returned to the conical shape. This was part of improvements to the aft body design to improve the steadiness of air flow and eliminate the need for vortex generators on the tail. The basis for the final 737 MAX tail cone design was **[***]**. That basis for the design used the **[***[3243]]**[3244] Overall, even if the 787 did not exist, Boeing would have designed the 737 MAX tail cone as it is, in the same timeframe.[3245]

9.350. The United States argues that the fly-by-wire system on the 737 MAX "is very different from that of the 787, in terms of its extent, its systems architecture, and its suppliers".[3246] It is partial, applied on **[***]**, rather than all of the aircraft's spoilers. The allocation of spoiler pairs on the 737 MAX is the same as the 737NG, involving **[***]** for airplane control and **[***]** as speed brakes for ground operations. The control architecture for the 737 MAX's fly-by-wire spoilers is most similar to the control architecture applied to the fly-by-wire spoilers on the 767 and the 757.[3247] The actuators are supplied by **[***]**. The United States argues that the 787 uses a different, digital fly-by-wire system on all spoilers, with actuators supplied by Moog. The 787 system also includes a vertical gust suppression droop spoiler that is not on the 737 MAX. If the 787 did not exist, Boeing would still have designed the 737 MAX fly-by-wire system exactly as it is.[3248]

9.351. As we have previously explained in the context of our evaluation of the European Union's arguments regarding the alleged spill-over technology effects of the pre-2007 aeronautics R&D subsidies to the technological developments of the 787-9/10 and the 777X, the European Union's spill-over technology effects theory raises two issues. The first is whether, conceptually, the original technology effects of the pre-2007 aeronautics R&D subsidies could have "spilled-over" to other aircraft, bearing in mind that these effects pertain to the acceleration of Boeing's development of 787-related technologies and not to the existence, as such, of those technologies. If so, the second issue is whether any of the alleged technologies identified by the European Union in relation to the 737 MAX are related or linked to the 787 technologies such that the latter bear a meaningful technological connection to the former.

[3237] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 44. See also United States' first written submission, paras. 980 and 972; and Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 54.

[3238] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 47.

[3239] United States' second written submission, para. 1188; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 30.

[3240] United States' second written submission, paras. 788 and 1191-1192; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 56; Boeing Engineers' Reply, (Exhibit USA-359) (BCI), para. 33.

[3241] United States' first written submission, para. 982.

[3242] United States' second written submission, paras. 791 and 1197; Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 37 and 38.

[3243] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 58.

[3244] United States' second written submission, paras. 791 and 1197; Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 37 and 38.

[3245] Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 58.

[3246] United States' first written submission, para. 984 (referring to Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 58).

[3247] United States' second written submission, paras. 789 and 1199; Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 34 and 35; and comments on European Union's response to Panel question No. 165, para. 169.

[3248] United States' first written submission, para. 984 (referring to Boeing Engineers' Statement, (Exhibit USA-283) (BCI), para. 58).

9.352. As previously noted, the causation finding in the original proceeding was that the pre-2007 aeronautics R&D subsidies *accelerated* the development by Boeing of the 787 technologies. The relevant question before us is therefore whether, owing to that acceleration, any alleged so-called spill-over technologies in relation to the 737 MAX also came into existence earlier than would otherwise be the case, enabling an earlier than otherwise launch of this aircraft.

9.353. We conclude in Section 9.3.2.1.1 above, in our evaluation of the European Union's arguments regarding the continuation of the alleged "original technology effects" of the pre-2007 aeronautics R&D subsidies, that the European Union fails to demonstrate that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 after the end of the implementation period in September 2012. We note that the end of the implementation period is more than eight years after Boeing actually launched the 787 in 2004, and is ten or more years after when Boeing began pre-launch R&D for the development of the 787 following its decision to develop a replacement for the 767. At the point in time of an unsubsidized 787 launch, Boeing would have undertaken all of the R&D necessary to launch 787 that the pre-2007 aeronautics R&D subsidies had enabled it to undertake at an accelerated rate.

9.354. We find above that, although it is more difficult for us to confidently predict exactly when Boeing would have been able to launch the 787 absent the pre-2007 aeronautics R&D subsidies, Boeing would have done so well before (i.e. at least several years before) the end of the implementation period.[3249] In our view, it is not unrealistic to believe that Boeing would have been in a position to have launched the 737 MAX before the end of the implementation period. The European Union has not provided credible evidence that the 787 technologies that an unsubsidized Boeing would have developed could not have been adapted to the 737 MAX in sufficient time to enable its respective launch in August 2011. We recall in this respect our earlier observation that the European Union misconstrues the findings from the original proceeding as to the effects of the pre-2007 aeronautics R&D subsidies.[3250]

9.355. Accordingly, we conclude that the European Union has failed to demonstrate the existence of so-called spill-over technology effects of the pre-2007 aeronautics R&D subsidies in respect of the 737 MAX in the post-implementation period .[3251]

9.4.2.2 New technology effects of certain post-2006 aeronautics R&D subsidies

9.356. We recall that the European Union points to a relatively small number of individual post-2006 aeronautics R&D subsidies which it argues operate through a technology causal mechanism (rather than a price causal mechanism) to contribute to "Boeing's development of innovative technologies for its current aircraft", such as the 737 MAX.[3252] In this Section of the Report, we evaluate the European Union's arguments regarding these post-2006 aeronautics R&D subsidies that are said to operate through a technology causal mechanism to affect the development of technologies for the 737 MAX and thereby cause serious prejudice to the European Union's interests in the post-implementation period.

9.357. The European Union argues that Boeing's participation in: (a) NASA's ERA Project, and the Subsonic Fixed Wing Project under NASA's Fundamental Aeronautics Program; (b) the DOD KC-46 Next Generation Aerial Refueling Aircraft program element; and (c) the ecoDemonstrator programme pursuant to the Boeing CLEEN Agreement enabled Boeing's development of

[3249] See para. 9.176 above.

[3250] As previously explained, the causation finding in the original proceeding was that the pre-2007 aeronautics R&D subsidies *accelerated* the development by Boeing of the 787 technologies; they did not create those 787 technologies. The knowledge and experience gained through the pre-2007 aeronautics R&D subsidies were not the effect of the subsidies *per se*. This finding therefore provides no basis for the argument that the pre-2007 aeronautics R&D subsidies provided the advantage each time a technology is put into use by Boeing, unless the European Union could have established that, by the end of the implementation period, Boeing would still not have developed the 787 technologies and launched the 787, a proposition which we rejected on the evidence before us.

[3251] In light of this conclusion, we need not address the second question, which is whether any of the alleged technologies identified by the European Union in relation to the 737 MAX are in some way related or linked to those on the 787.

[3252] European Union's first written submission, para. 979.

technologies for the 737 MAX (as well as for the 787-9/10 and 777X, discussed in Section 9.3.2.1.4), thereby contributing to adverse effects caused through that aircraft.[3253]

9.358. The European Union alleges that Boeing conducted research under NASA's Subsonic Fixed Wing Project on the "Multi-Objective Optimization of a Turbofan for an Advanced Single-Aisle Transport", to identify a design solution for incorporating larger engines on a next-generation single-aisle aircraft that helped Boeing determine the configuration for the 737 MAX.[3254] In addition, the European Union submits that Boeing learned how to integrate large format multifunction primary displays into the legacy architecture of the 737 MAX cockpit through participation in the DOD KC-46, Next Generation Aerial Refueling Aircraft program element, specifically related to the 767-2C.[3255] Finally, the European Union argues that Boeing has tested and validated various technologies related to the development of the 737 MAX as part of the 2012 ecoDemonstrator 737-800 flight test bed, including adaptive trailing edges and variable area fan nozzle (VAFN) technology that could contribute to additional fuel burn savings of 2% and reduce take-off noise as well as Boeing-proprietary winglet technology.[3256]

9.359. The United States denies that Boeing conducted research under the "Multi-Objective Optimization of a Turbofan for an Advanced, Single-Aisle Transport". Rather, the document on which the European Union relies for its assertions regarding the contribution of the NASA Subsonic Fixed Wing Project on the "Multi-Objective Optimization of a Turbofan for an Advanced, Single-Aisle Transport" argument is a "*NASA study by NASA employees* Jeffrey Berton and Mark Guynn, which used public data on Boeing's 737NG aircraft".[3257]

9.360. The United States further argues that the DOD KC-46 Next Generation Aerial Refueling Aircraft program element is outside the scope of this proceeding and therefore warrants no further consideration. The United States also denies that the KC-46 Next Generation Aerial Refueling Aircraft program element contributed to Boeing's ability to incorporate multifunction primary displays in the 737 MAX. While it is true that the 737 MAX primary displays are derived from the displays developed for the 787, this was done by Boeing and its supplier Rockwell Collins without any U.S. Government funding. Although both the 737 MAX and 767-derivative KC-46 primary displays are derived from those on the 787, there was no transfer of technology or learning from the KC-46 displays to those on the 737 MAX.[3258] The 737 MAX and KC-46 displays are different devices; the KC-46 displays are designed to interact with military night vision systems, while those on the 737 MAX are not. The United States submits that Boeing has updated the legacy architecture of the 737 and 767 "numerous times" over the years and there is no legacy architecture display integration challenge in common between the two aircraft.[3259] Contrary to the European Union's argument, the flow of technology is from civil to military, with the display technology from the 787 being incorporated into the KC-46.

[3253] The European Union argues that, should the Panel disagree that any of these alleged post-2006 aeronautics R&D subsidies operate, at present, through a technology causal pathway, they should in the alternative be understood to operate through a price causal pathway. (See European Union's response to Panel question No. 43, fn 352).

[3254] European Union's first written submission, paras. 1095 and 1096; Airbus Engineer's Statement, (Exhibit EU-31) (BCI), section IV.B.1 (referring to J. J. Berton and M. D. Guynn, NASA, *Multi-Objective optimization of a Turbofan for an advanced, single-aisle transport*, (April 2012), (Exhibit EU-666), p. 22).

[3255] European Union's first written submission, paras. 1095-1099 and 1623; Airbus Engineer's Statement, (Exhibit EU-31) (BCI), section IV; and Airbus Engineers' Response, (Exhibit EU-1014) (BCI), para. 104. (fn omitted)

[3256] European Union's first written submission, paras. 1090-1094; Airbus Engineer's Statement, (Exhibit EU-31) (BCI), section IV; and C. Wilsey and R. Stoker, "Continuous Lower Energy, Emissions and Noise (CLEEN) Technologies Development – Boeing Program Overview", Presentation at the CLEEN Consortium Public Session, 27 October 2010, (Exhibit EU-665), p. 6

[3257] See United States' first written submission, para. 976 *(*referring to J. J. Berton and M. D. Guynn, NASA, *Multi-Objective optimization of a Turbofan for an advanced, single-aisle transport* (April 2012), (Exhibit EU-666)) (emphasis original). See also Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 49 and 50 ("{s}cientists preparing documents of this nature usually thank other scientists who have reviewed their work or provided other input. The absence of any Boeing employees from the acknowledgement page of the NASA study confirms that Boeing played no role in that project").

[3258] Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 39 and 40.

[3259] United States' second written submission, para. 1195 (referring to Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 39 and 40).

9.361. The United States acknowledges that FAA CLEEN funding under the Boeing CLEEN Agreement was used for preparation of the aircraft/instrumentation specific to CLEEN test requirements, operation, fuel and support of the aircraft during 51.5 hours of dedicated adaptive trailing edge flight testing based in Glasgow, Montana, and subsequently, an apportioned percentage was used on post-test refurbishment costs of the aircraft to make it suitable for commercial operation with American Airlines. However, it submits that Boeing's proprietary adaptive trailing wing edge technology **[***]**.[3260] The United States argues that testing for Boeing's proprietary VAFN technology, multi-spar winglet design, and deployment of RFID devices was not conducted pursuant to the Boeing CLEEN Agreement on the 737-800 ecoDemonstrator test bed, but was funded at Boeing's own expense. In cases where technologies are tested on the 737-800 ecoDemonstrator test bed, the United States submits that great care is employed to segregate CLEEN costs from ecoDemonstrator costs. At most, it is possible that the Boeing CLEEN Agreement funded a small portion of the fuel cost incurred for a given technology. In this regard, only a small amount of FAA CLEEN funding may be allocated to testing of VAFN technology or RFID devices. It is unreasonable to suggest that a possible fuel cost contribution had a meaningful impact on Boeing's testing of these technologies, let alone on Boeing's ability to develop the 737 MAX. In any case, the Boeing CLEEN Agreement was not a source of funding of fuel costs for testing of the multi-spar winglet that the 737 MAX design incorporates, as the winglet was not even installed on the test aircraft during the CLEEN phase of flight testing in Glasgow, Montana. In addition, the United States also emphasizes that VAFN technology **[***]**.[3261]

9.362. We begin by addressing the European Union's argument that knowledge and experience gained under the Multi-Objective Optimization of a Turbofan for an Advanced, Single-Aisle Transport aspect of NASA's Subsonic Fixed Wing Project helped Boeing in its decision to integrate larger engines on the 737 MAX and proceed with the overall 737 MAX design as opposed to a clean sheet replacement design. While the European Union submits a copy of the results of the NASA research effort, it does not identify how Boeing participated in this effort, or indeed whether this participation occurred through a NASA procurement contract or other agreement funded under any of the challenged NASA aeronautics R&D programmes.[3262] Nor does the European Union provide evidence of the contribution of the study to Boeing's decision to incorporate the relevant technologies onto the 737 MAX, or of the extent to which this project contributed towards an earlier launch of the 737 MAX or a launch that would otherwise not have been possible. The Airbus engineers concede that "{t}he choice {to proceed with the 737 MAX design} was certainly not based on the result of this study alone".[3263] On the basis of the evidence before us, we are not persuaded that Boeing was directly involved in the research in question, or even that the research contributed to the development of the relevant 737 MAX technologies or to enabling an earlier launch of the 737 MAX.

9.363. We next address the European Union's allegations that Boeing's participation in the KC-46, Next Generation Aerial Refueling Aircraft program element enabled Boeing to integrate large format multifunction primary displays into the legacy architecture of the 737 MAX cockpit. We recall that in Section 7.3.3.3, we have ruled that the KC-46 New Generation Aerial Refueling Aircraft program element is outside the scope of the compliance proceeding. We therefore do not further consider the European Union's argument regarding the implications of Boeing's participation in this program element for Boeing's development of the legacy architecture of the 737 MAX cockpit.

9.364. Finally, we turn to the European Union's allegations concerning Boeing's participation in the FAA CLEEN Program through the Boeing CLEEN Agreement in respect of the 737 MAX. The European Union alleges that Boeing tested variable area fan nozzles and adaptive trailing edges

[3260] United States' second written submission, para. 1203; and Boeing Engineers' Reply, (Exhibit USA-359) (BCI), para. 43.

[3261] United States' second written submission, para. 1203. See also United States' first written submission, para. 989; second written submission, paras. 1201, and 1202; Boeing Engineers' Statement, (Exhibit USA-283) (BCI), paras. 64-68; and Boeing Engineers' Reply, (Exhibit USA-359) (BCI), paras. 44-47.

[3262] J. J. Berton and M. D. Guynn, NASA, *Multi-Objective optimization of a Turbofan for an advanced, single-aisle transport*, (April 2012), (Exhibit EU-666).

[3263] Airbus Engineer's Statement, (Exhibit EU-31)(BCI), para. 136.

under the 2012 ecoDemonstrator 737-800 test bed, and that these technologies both appear on the 737 MAX.[3264]

9.365. In Section 9.3.2.1.4 above, we reject the European Union's argument that Boeing's participation in the FAA CLEEN Program, through the Boeing CLEEN Agreement, created or accelerated the creation of RFID technology or HLFC technologies for use on the 787-9/10 or 777X. In reaching this conclusion, we distinguished the types of early-stage, high-risk R&D at issue in the original proceeding from the type of testing and validation of technologies that are already in a late stage of development, which takes place under Boeing's ecoDemonstrator programme. As we explain in paragraphs 9.205 and 9.206 above, we are not persuaded that Boeing would not have undertaken the testing and validation work on its own, absent its work under the Boeing CLEEN Agreement.

9.366. Therefore we are similarly not persuaded that Boeing's participation in the FAA CLEEN Program through the Boeing CLEEN Agreement materially helped Boeing to undertake R&D in relation to the alleged technologies that now feature on the 737 MAX, that it would not otherwise have undertaken, or to achieve the same gains that it would not otherwise have achieved within essentially the same time-frame. Rather, if anything, Boeing's participation in a cost-sharing arrangement such as the Boeing CLEEN Agreement merely somewhat lower the cost at which it was able to undertake research it would have undertaken in any case. We therefore conclude that the European Union has failed to demonstrate that Boeing's participation in the FAA CLEEN Program, through the Boeing CLEEN Agreement, created or accelerated the development and creation of the variable area fan nozzles and adaptive trailing edges that are alleged to feature on the 737 MAX. The European Union has therefore failed to demonstrate the existence of new technology effects of the particular post-2006 aeronautics R&D subsidies in respect of the 737 MAX in the post-implementation period.[3265]

9.4.2.3 Summary of conclusions on whether certain aeronautics R&D subsidies benefiting the 737 MAX cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A320neo in the post-implementation period, through a technology causal mechanism

9.367. In this Section, we evaluate the European Union's arguments that the pre-2007 aeronautics R&D subsidies, through their effects on Boeing's development of 787 technologies, have "spilled over" to affect the technological development of the 737 MAX and the timing of its launch (the spill-over technology effects), and that certain post-2006 aeronautics R&D subsidies have led Boeing to develop other technologies which also affect this aircraft's technological development and the timing of its launch (the new technology effects).

9.368. As regards the *spill-over technology effects* of the pre-2007 aeronautics R&D subsidies, we refer to the original panel's finding that the effect of the pre-2007 aeronautics R&D subsidies was to *accelerate* Boeing's development of the 787 technologies (rather than to create technologies that would not otherwise exist), and our conclusion in Section 9.3.2.1.1, that the European Union has failed to demonstrate that, absent the pre-2007 aeronautics R&D subsidies, Boeing would have launched the 787 after the end of the implementation period in September 2012. We explain that, owing to this finding, the onus is on the European Union to demonstrate that, absent the acceleration effect of the pre-2007 aeronautics R&D subsidies on Boeing's development of 787 technologies, Boeing would not have had sufficient time to further develop technologies that would have enabled it to launch the 737 MAX in 2011. We conclude that the European Union has not provided credible evidence that, absent the pre-2007 aeronautics R&D subsidies, the 787 technologies that Boeing would have developed could not have been adapted and further developed for the 737 MAX in sufficient time to enable Boeing to launch the 737 MAX in

[3264] Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 121. See also Airbus Engineer's Statement, (Exhibit EU-31) (BCI), para. 16 (referring to Boeing, Fact Sheet, "The Suite of Technologies on the ecoDemonstrator Tests New Ways to Reduce Fuel Consumption and Community Noise", June 2012, (Exhibit EU-262)).

[3265] Given the European Union's request that if we reject its arguments that the particular, identified post-2006 aeronautics R&D subsidies operate through a technology causal mechanism, we consider in the alternative whether they should be analysed as operating through a price causal mechanism, we will address whether these particular, identified post-2006 aeronautics R&D subsidies operate through a price causal mechanism in Section 9.4.3.3 below.

August 2011. This is sufficient to enable the Panel to reject the European Union's argument regarding spill-over technology effects in relation to the 737 MAX without addressing whether there is in any case a sufficient technological link between the 787 technologies and the features of the 737 MAX that the European Union alleges are derived from the 787 technologies.

9.369. As regards the *new technology effects* of certain post-2006 aeronautics R&D subsidies, we explain that there are three such subsidies that are alleged to have affected Boeing's development of certain technologies for the 737 MAX: (a) NASA's ERA Project and the Subsonic Fixed Wing Project under NASA's Fundamental Aeronautics Program; (b) the DOD KC-46, Next Generation Aerial Refueling Aircraft program element; and (c) the ecoDemonstrator programme pursuant to the Boeing CLEEN Agreement.

9.370. We reject the arguments regarding the *NASA aeronautics R&D programmes* above because they are based on results of a study published by NASA, without any indication of whether Boeing participated in the study in question, and if so, how and through which instruments. There is also no evidence as to the degree to which the study in question contributed to solving the technological problems or to Boeing's decision to incorporate the relevant technologies onto the 737 MAX. We reject the arguments regarding the *DOD KC-46, Next Generation Aerial Refueling Aircraft program element* because the KC-46, Next Generation Aerial Refueling Aircraft program element is outside the scope of the proceeding. Finally, we decline to analyse the *Boeing CLEEN Agreement* as contributing to Boeing's development of technologies for the 737 MAX because the nature of the R&D performed is testing, validation and refinement of late-stage technologies. Unlike the R&D that Boeing performed under the pre-2007 aeronautics R&D subsidies, the R&D performed by Boeing under the Boeing CLEEN Agreement is R&D that Boeing would otherwise (and could otherwise) have performed itself. As the Boeing CLEEN Agreement is a cost-sharing arrangement, we consider the material contribution of that subsidy is to lower Boeing's costs of undertaking late stage testing and validation work. We will therefore consider whether, analysed as operating through a price causal mechanism, this post-2006 aeronautics R&D subsidy can be said to affect Boeing's LCA prices.

9.371. Finally, in Section 9.3.2.1.4, we reject the European Union's argument that research Boeing conducted under NASA's Subsonic Fixed Wing Project related to the development of PRSEUS composite materials or Boeing's research and testing of VAFN, RFID devices, adaptive trailing wing edge technology or a modified winglet can give rise to "future technology effects" that could constitute a threat of serious prejudice, within the meaning of Article 5(c) and footnote 13 and Article 6.3 of the SCM Agreement. This finding is similarly relevant to our assessment here.

9.372. In conclusion, we reject the European Union's arguments concerning the existence of various alleged technology effects of the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies in respect of the 737 MAX in the post-implementation period.

9.373. Because the European Union has failed to demonstrate any effects of the pre-2007 aeronautics R&D subsidies, or of the particular, identified post-2006 aeronautics R&D subsidies, on Boeing's product development in respect of the 737 MAX in the post-implementation period, the possibility of any consequent impact of those subsidies on sales and prices of the A320neo does not arise.[3266] Accordingly, there is no basis on which the pre-2007 aeronautics R&D subsidies or the particular, identified post-2006 aeronautics R&D subsidies can be found to be a genuine and substantial cause of any of the forms of serious prejudice alleged in respect of the A320neo in the post-implementation period, through a technology causal mechanism.

9.4.3 Whether the post-2006 subsidies benefiting the 737 MAX and 737NG cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A320neo and A320ceo in the post-implementation period, through a price causal mechanism

9.374. The European Union argues that certain unwithdrawn subsidies that the United States grants and maintains since the end of the reference period in the original proceeding (the post-2006 subsidies), through their effects on Boeing's pricing of the 737 MAX in certain price-sensitive LCA sales campaigns, *considered collectively* with the effects of certain aeronautics R&D subsidies on Boeing's technology developments for the 737 MAX, cause various forms of

[3266] See para. 9.341 above.

serious prejudice with respect to the A320neo in the post-implementation period. It further argues that the post-2006 subsidies, through their effects on Boeing's pricing of the 737NG in certain price-sensitive LCA sales campaigns, cause various forms of serious prejudice with respect to the A320ceo in the post-implementation period.

9.375. In Section 9.4.2 above, the Panel concludes that the European Union has failed to demonstrate the first part of its serious prejudice argument in relation to the 737 MAX and A320neo; namely, that the various aeronautics R&D subsidies affected Boeing's development of technologies for the 737 MAX in the post-implementation period. The consequence of this conclusion is that the technological advancements (including the timing of delivery) of the 737 MAX cannot be considered to be an effect of the subsidies.

9.376. This means that the remaining element of the European Union's serious prejudice case regarding the A320neo that we must address is whether the post-2006 subsidies have enabled Boeing to lower the prices of the 737 MAX in certain highly competitive LCA sales campaigns, thereby causing serious prejudice with respect to the A320neo in the post-implementation period. We note that the European Union also argues that the post-2006 subsidies have enabled Boeing to lower the prices of the *737NG* only in certain highly competitive LCA sales campaigns, thereby causing serious prejudice with respect to the *A320ceo* in the post-implementation period. Given our finding that the 737 MAX, 737NG, A320neo and A320ceo compete in one LCA product market for narrow-body, single-aisle LCA, we will consider whether the post-2006 subsidies, through their effects on Boeing's prices of the 737 MAX and 737NG, are a genuine and substantial cause of significant lost sales of the A320neo and A320ceo, of impedance as well as displacement of A320neo and A320ceo imports (to the United States) and exports (to certain third country markets), and of significant price suppression of the A320neo and A320ceo, and threats of all of the foregoing, in the post-implementation period.

9.377. In Section 9.2.3, we explain that we shall conduct our analysis of the effects of the post-2006 subsidies that operate through a price causal mechanism by aggregating them into one of three categories: (a) tied tax subsidies, comprising the Washington State and City of Everett B&O tax rate reductions, the receipt of which is contingent on the sale of particular Boeing LCA on a per-unit basis; (b) state and local cash flow subsidies, comprising incentives provided by state and municipal authorities in Washington and South Carolina related to Boeing's LCA production activities in those jurisdictions, but which are not related to LCA production on a per-unit basis; and (c) post-2006 aeronautics R&D subsidies, which the European Union argues enable Boeing to use intellectual property to continue developing technologies for future LCA without having to pay licence fees.

9.4.3.1 The Washington State B&O tax rate reduction

9.378. The subsidy within the tied tax subsidies aggregated category that is alleged to benefit the 737 MAX and 737NG is the Washington State B&O tax rate reduction. This subsidy reduces the state B&O taxes applicable to the revenues earned from the sale of 737 MAX and 737NG aircraft, lowering Boeing's taxes and thereby increasing Boeing's after-tax profits.[3267]

9.379. We have previously explained the parties' general arguments as to the nature and operation of the tied tax category of post-2006 subsidies in connection with our analysis of the effects of these subsidies on Boeing's 787 and 777X prices in the wide-body, twin-aisle LCA markets.[3268] In Section 9.3.2.2.1 of this Report we explained the approach taken by the Appellate Body to determining whether the FSC/ETI subsidies and Washington State B&O tax rate reduction in the original proceeding, given their nature as tied tax subsidies, the dynamics of price competition between Boeing and Airbus in a duopolistic market, and the way that the tied tax subsidies are said to be applied by Boeing to lower prices in certain price-sensitive sales campaigns, contributed in a genuine and substantial way to the lowering of Boeing's prices.[3269] Based on this approach, we then proceeded to evaluate the sales campaign evidence to determine whether any of the sales campaigns involving wide-body, twin-aisle aircraft were price-sensitive, in the sense that Boeing appeared to be under particular pressure to reduce its prices in order to secure the sales, and whether there were any non-price factors that explained Boeing's success in

[3267] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1806.
[3268] See paras. 9.235 through 9.237 above.
[3269] See paras. 9.239 through 9.241 above.

obtaining the sale; e.g. Boeing's incumbency and a consequent switching cost advantage, the suitability of the aircraft for the particular customer's requirements (in terms of range, capacity and delivery availability). Had we concluded that Boeing appeared to be under particular pressure to reduce its prices in order to secure the sales, and that there were no non-price factors that explained Boeing's success in obtaining the sale, we would have concluded that the tied tax subsidies contributed in a genuine and substantial way to the lowering of Boeing's LCA prices in the wide-body, twin-aisle LCA markets. As a second step in the analysis, we would then have addressed the United States' argument concerning the relative insignificance of the magnitudes by determining whether, on the basis of the evidence before us, the magnitudes of the tied tax subsidies were enough to "cover the margin of victory between the final net prices of Boeing and Airbus"[3270] such that the tied tax subsidies, through their effects on Boeing's prices, are a genuine and substantial cause of lost sales of the A350XWB.

9.380. We will follow the same approach in analysing the effects of the Washington State B&O tax rate reduction on Boeing's 737 MAX and 737NG prices in so-called price-sensitive sales campaigns, and their consequent effect on A320neo and A320ceo sales. We therefore begin by examining the sales campaign evidence involving the 737 MAX and 737NG on the one hand, and the A320neo and A320ceo, on the other, to determine whether, in any of these campaigns, Boeing appeared to be under particular pressure to reduce its prices in order to secure the sales, and whether there were no non-price factors that explained Boeing's success in obtaining the sale.

9.4.3.1.1 The sales campaigns involving competition between the 737 MAX and A320neo and the 737NG and A320ceo

9.381. The European Union submits evidence concerning certain LCA sales campaigns involving the 737 MAX and A320neo, and the 737NG and A320ceo, between 2007 and 2015 which it argues are highly competitive, and instances where Boeing did in fact act on its incentive, enabled by the receipt of subsidies, to offer pricing concessions that enabled it to secure the sales at the expense of Airbus. The main details concerning these sales campaigns are set forth in Table 12 below[3271]:

[3270] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1263.

[3271] The year following the name of the airline customer designates the date of the order, although in some cases much of the sales campaign activity may have taken place in the preceding year. For this reason, the years of the sales campaigns as designated by the Panel may differ in certain cases from the years of those campaigns as indicated in the European Union's submissions, which appear generally to refer to the year in which the sales campaign was conducted.

Table 12: Alleged lost sales of the A320neo and A320ceo in the post-implementation period due to the 737 MAX and 737NG

Sales campaigns alleged to demonstrate lost sales of both the A320neo and the A320ceo due to the 737 MAX and the 737NG[3272]			
Campaign	**Number of 737NG orders**	**Number of 737 MAX orders**	**A320neo /A320ceo[3273]**
American Airlines 2011	100, plus 40 options	100, plus 60 options	260 single-aisle aircraft
Southwest Airlines 2011	58	150	None
Southwest Airlines 2013 ("Follow-on")	5	50	None
Avolon 2012	10	15	20 (A320neo)
Norwegian Air Shuttle 2012	22	100	100 (A320neo)
United Airlines 2012 and 2013	64, of which 50 in 2012 and 14 in 2013	100	None
SilkAir 2012	23	31	None
Lion Air 2012	29	201	174 (A320neo) 60 (A320ceo)
Fly Dubai 2014	11	75, plus 25 purchase rights	None
Sales campaigns alleged to demonstrate lost sales of the A320neo due to the 737 MAX			
Campaign	**Number of 737NG orders**	**Number of 737 MAX orders**	**A320neo/A320ceo**
GOL 2012	None	60	None
Avolon 2014 ("Follow-on")	None	5	None
Aviation Capital Group 2012	None	60	30 (A320neo)
Aeromexico 2012	None	60	None
Icelandair 2013	None	16	None
TUI Travel 2013	None	60, plus 90 options	None
Air Canada 2013	None	61, plus 18 options and 30 purchase rights	None
Monarch Airlines 2014	None	30, plus 15 options	None
SilkAir 2015 ("Follow-on")	None	6[3274]	None

[3272] The European Union had also challenged the Air Lease Corp 2012 and GECAS 2012 single-aisle campaigns, but does not pursue its arguments in relation to these campaigns on account of both airlines having subsequently announced a number of Airbus orders. (European Union's response to Panel question No. 169, para. 408).

[3273] Certain of the campaigns cited by the European Union are "split campaigns" in that the customer divided the order across both Airbus and Boeing.

[3274] We note that the European Union argues that this "follow-on" order consisted of *seven* 737 MAX aircraft. However, the evidence presented by the European Union only shows an order for *six* 737s, without specifying whether the aircraft concerned are 737 MAX or NG. (European Union's response to Panel question No. 169, para. 407, and table at para. 329; and Boeing website, Orders and Deliveries – 2015 Net Orders, through 22 September 2015, available at <http://www.boeing.com/commercial/#/orders-deliveries>, accessed 8 August 2016, (Exhibit EU-1568)).

Sales campaigns alleged to demonstrate lost sales of the A320ceo due to the 737NG			
Campaign	**Number of 737NG orders**	**Number of 737 MAX orders**	**A320neo/A320ceo**
Fly Dubai 2008	50	None	None
Delta Airlines 2011	100	None	None

The data in Table 12 above is supported by the following evidence: Boeing Press Release, "Boeing and American Airlines Agree on Order for up to 300 Airplanes", 20 July 2011, (Exhibit EU-883); "American Airlines Deal Seen as Win for Airbus, Bad Omen for Boeing", *Ascend Advisory*, 21 July 2011, (Exhibit EU-886); "Boeing Orders Likely to Survive American Bankruptcy", *Seattle Times*, 29 November 2011, (Exhibit EU-891); Boeing Press Release, "Boeing 737 MAX Logs First Firm Order from Launch Customer Southwest Airlines", 13 December 2011, (Exhibit EU-896); Boeing website, Orders and deliveries – 2013 Orders Detail, available at <http://www.boeing.com/commercial/#/orders-deliveries>, last accessed 8 August 2016, (Exhibit EU-1647); Boeing Press Release, "Boeing Announces Historic 737 Order for United Airlines", 12 July 2012, (Exhibit EU-912); Boeing website, Orders and Deliveries – 2013 Net Orders, through 9 July 2013, available at <http://www.boeing.com/commercial/#/orders-deliveries>, last accessed 7 August 2016, (Exhibit EU-1185); Boeing website, Orders and Deliveries – 2013 Orders Detail, through June 2013, available at <http://www.boeing.com/commercial/#/orders-deliveries>, accessed 8 August 2016, (Exhibit EU-1151); Boeing Press Release, "Boeing Statement on SilkAir Commitment to order 737s", 3 August 2012, (Exhibit EU-922); Boeing website, Orders and Deliveries – Customer Summary SilkAir, through February 2013, available at <http://www.boeing.com/commercial/#/orders-deliveries>, accessed 8 August 2016, (Exhibit EU-923); Boeing Press Release, "Boeing, Lion Air Finalize Historic Order for up to 380 737s", 14 February 2012, (Exhibit EU-961); Airbus Press Release, "Lion Air orders 234 A320 Family aircraft", 18 March 2013, (Exhibit EU-962); Boeing Press Release, "Boeing, flydubai Finalize Order for 75 737 MAXs", 6 January 2014, (Exhibit EU-1598); Boeing Press Release, "Boeing, GOL Announce order for 60 737 MAX Airplanes", 1 October 2012, (Exhibit EU-940); Boeing Press Release, "Boeing and Norwegian Announce Order for 100 737 MAX; 22 Next-Generation 737s", 25 January 2012, (Exhibit EU-944); Airbus Press Release, "Norwegian firms up order for 100 Airbus A320neo", 8 June 2012, (Exhibit EU-948); Boeing Press Release, "Boeing, Avolon Announce Commitment for 737 MAXs and Next-Generation 737s", 11 July 2012, (Exhibit EU-965); Boeing website, Orders and Deliveries – Customer Summary Avolon, through February 2013, available at <http://www.boeing.com/commercial/#/orders-deliveries>, last accessed 8 August 2016, (Exhibit EU-966); Airbus Press Release, "Avolon increases initial NEO commitment by signing order for 20", 10 January 2013, (Exhibit EU-967); Boeing Press Release, "Boeing, Avolon Announce Commitment for 787 Dreamliners, Additional 737 MAXs", 14 July 2014, (Exhibit EU-1646); Boeing Press Release, "Boeing, Aeromexico Finalize Order for 737 MAX 8s and 9s", 6 November 2012, (Exhibit EU-871); Boeing Press Release, "Boeing, Icelandair Finalize Order for 16 737 MAX Airplanes", 13 February 2013, (Exhibit EU-988); "TUI Travel to Buy 60 Boeing 737 MAX Aircraft", *BBC News*, 31 May 2013, (Exhibit EU-1217); C. Buyck, "TUI Travel Firms Up Boeing 737 MAX Order", *Aviation Week*, 17 June 2013, (Exhibit EU-1218); Air Canada Press Release, "Air Canada Selects Boeing 737 MAX to Renew Mainline Narrowbody Fleet", 11 December 2013, (Exhibit EU-1571); Boeing Press Release, "Boeing Statement on Air Canada 737 MAX Commitment", 11 December 2013, (Exhibit EU-1572); Boeing Press Release, "Boeing, Air Canada Finalize Order for 61 737 MAXs", 1 April 2014, (Exhibit EU-1573); Boeing Press Release, "Monarch Airlines Finalize Order for 30 787 MAX 8s", 31 October 2014, (Exhibit EU-1624); Boeing Press Release, "Monarch Airlines Selects Boeing as Preferred Bidder for Fleet Replacement", 14 July 2014, (Exhibit EU-1625); Boeing website, Orders and Deliveries – 2015 Net Orders, through 22 September 2015, available at <http://www.boeing.com/commercial/#/orders-deliveries>, accessed 8 August 2016, (Exhibit EU-1568); Boeing Press Release, "Boeing, Fly Dubai Announce Next-Generation 737 Order", 14 July 2008, (Exhibit EU-1008); and Delta Press Release, "Delta Announces Order for 100 Boeing 737-900ER Aircraft", 25 August 2011, (Exhibit EU-1001).

9.382. The evidence submitted in relation to the above sales campaigns includes information concerning: (a) the aircraft that were offered by Airbus and Boeing, respectively, to customers in each sales campaign; (b) the particular needs of the airline customer in terms of factors such as seating capacity, range and routes to be served, efficiency and delivery dates; and (c) the dynamics of the pricing interactions between Airbus and Boeing, on the one hand, and the airline customer or leasing company on the other, through repeated rounds of negotiations. This evidence allows the Panel to assess with a high degree of confidence the extent to which the sales campaigns were or were not particularly price-sensitive. While some of the sales campaign evidence is in the public domain (e.g. the information concerning the terms of the aircraft orders ultimately placed by the customer), a significant part of it, especially as regards the internal Airbus communications describing Airbus' sales strategies and evaluating the competing Airbus and Boeing offers, is designated as HSBI. Therefore, in the discussion that follows, we provide a non-confidential summary of our conclusions regarding the extent to which the outcomes of the individual sales campaigns appeared to turn on the price of the competing offers. Our detailed

analysis of the evidence pertaining to each sales campaign is set forth in an HSBI Appendix to the Report.[3275]

9.383. We conclude, based on our evaluation of the sales campaign evidence concerning the A320neo and A320ceo, that in five sales campaigns between 2007 and 2015, Boeing appeared to be under particular pressure to reduce its prices in order to secure the sale, and there were no non-price factors that explain Boeing's success in obtaining the sale.[3276] While pricing was discussed in certain of the other single-aisle sales campaigns, Boeing does not appear to have been under particular pressure to reduce its prices in order to secure these sales, and there were non-price factors that explain Boeing's success in obtaining the orders, or in the case of split orders, the portion of the orders that it obtained. In the majority of these LCA sales campaigns, a critical factor was Boeing's status as the incumbent aircraft supplier.[3277] Another critical factor in many of these campaigns was the airline customer's preference for the delivery availability of the Boeing aircraft over the competing Airbus aircraft.[3278] The size and timing of certain airline customers' fleet replacement needs also featured as a decisive factor in some campaigns, meaning that some orders could simply not be met by a single manufacturer and therefore necessarily resulted in split orders.[3279] In other campaigns, vital factors included the technical performance of competing aircraft.[3280] We conclude that in each of these other sales campaigns there were other factors that explain why Airbus either did not win the sale, or in the case of the sales campaigns that involved split orders, why there was no basis to conclude that Boeing's pricing resulted in the customer awarding a greater portion of the order to Boeing (and thus a lesser portion to Airbus) than would otherwise have been the case.[3281]

9.384. Accordingly, based on the reasoning of the Appellate Body when analysing the effects of the FSC/ETI subsidies on Boeing's prices in the original proceeding, we conclude that the Washington State B&O tax rate reduction contributed in a genuine and substantial way to the lowering of Boeing's prices of narrow-body, single-aisle LCA in five LCA sales campaigns between 2007 and 2015.

9.385. As the European Union has demonstrated that the Washington State B&O tax rate reduction affected Boeing's pricing behaviour with respect to the 737 MAX and 737NG in five price-sensitive sales campaigns between 2007 and 2015, we will next consider whether, on the basis of the evidence before us, the magnitudes of the Washington State B&O tax rate reduction were enough to "cover the margin of victory between the final net prices of Boeing and Airbus"[3282] such that this subsidy, through its effects on Boeing's prices, is a genuine and substantial cause of lost sales of the A320neo and A320ceo.

9.4.3.1.2 Whether the Washington State B&O tax rate reduction is a genuine and substantial cause of significant lost sales of the A320neo and A320ceo in the post-implementation period

9.386. The principal argument that the United States makes is that the magnitudes of the tied tax subsidies are too small to cause adverse effects.[3283] The United States emphasizes that, in the original proceeding, the Washington State and City of Everett B&O tax rate reductions were found to cause adverse effects only when aggregated with FSC/ETI subsidies. It considers that, now that the FSC/ETI subsidies are not relevant to the analysis, the B&O tax rate reductions are too small to cause the alleged market phenomena and therefore cannot support a conclusion that they are a genuine and substantial cause of such phenomena.[3284]

[3275] See HSBI Appendix (Appendix 2).
[3276] Fly Dubai 2008, Delta 2011, Icelandair 2013, Air Canada 2013, and Fly Dubai 2014.
[3277] See HSBI Appendix (Appendix 2), paras. 179, 187, 194, 210, 216, 222, 237, 243, and 257.
[3278] See HSBI Appendix (Appendix 2), paras. 194, 200, 216, and 237.
[3279] See HSBI Appendix (Appendix 2), paras. 179 and 222.
[3280] See HSBI Appendix (Appendix 2), paras. 216 and 257.
[3281] Several of the single-aisle LCA sales campaigns involved split orders of both Airbus and Boeing aircraft: American Airlines (2011), Norwegian Air Shuttle (2012), Lion Air (2012), Avolon (2012 and 2014), and Aviation Capital Group (2012).
[3282] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1263.
[3283] United States' first written submission, paras. 719-721; second written submission, paras. 863-865.
[3284] To recall, in the original proceeding the FSC/ETI subsidies amounted to USD 435 million between 2004 and 2006. The Washington State and City of Everett B&O tax rate reductions amounted to USD 13.8 and

9.387. We do not agree with the United States that, simply because the amounts of the Washington State B&O tax rate reduction were considered too small to cause adverse effects on their own in 2004-2006, far greater amounts of this subsidy in the 2013-2015 period are similarly incapable of causing adverse effects after the end of the implementation period.

9.388. The amount of the FSC/ETI subsidies, which were found in the original proceeding to have caused adverse effects, was USD 435 million over a 2004-2006 reference period. The combined amounts of the Washington State and City of Everett B&O tax rate reductions over the same three year period was USD 16 million.[3285] Although the FSC/ETI subsidies are no longer relevant to the analysis, the amounts of the Washington State B&O tax rate reduction have increased significantly from the amounts that were found to exist in the 2004-2006 reference period in the original proceeding.[3286] We estimate the total amount of the Washington State B&O tax rate reduction to be approximately USD 325 million over the equivalent three year period 2013 - 2015.[3287]

9.389. In its first written submission in this proceeding, the United States estimates the average annual amounts of the tied tax subsidies between 2007 and 2012, divided by the number of relevant Boeing aircraft (787, 737 MAX, and 737NG) implicated in the sales campaigns between 2007 and 2012 that the European Union alleges are evidence of significant lost sales.[3288] This results in a per-aircraft rate of subsidisation of USD **[***]** for each 737 MAX and 737NG involved in the allegedly price-sensitive LCA sales campaigns submitted by the European Union as evidence of significant lost sales of the A320neo and A320ceo.[3289] The United States compares these per-aircraft subsidization rates to average list prices of the 737 MAX and 737NG, as well as average actual prices of the Boeing LCA in sales campaigns subject to the Panel's request for information pursuant to Article 13 of the DSU.[3290] These comparisons are presented in Table 13 below. Owing to the fact that the average actual prices are HSBI, the Panel has calculated estimated average actual prices, based on an assumed average discount off list prices, in order to provide a sense of those average actual prices.

USD 2.2 million respectively, over the same period. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1811).

[3285] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1811.

[3286] Section 8.2.7.2.2 above.

[3287] See para. 8.670 above.

[3288] The subsidy amounts used by the United States in this calculation are based on its own estimates, which as explained in Section 8.2.7.2.2.1, are somewhat **[***]** the Panel's estimates (although not significantly so).The number of aircraft alleged to be lost sales of the A350XWB, A320neo and A320ceo between 2007 and 2012 is 1,830. The United States says that its allocation of the annual tax savings from the B&O tax rate reductions over 305 aircraft per year is conservative because it is based on the assumption that Boeing would only use the tied tax subsidies to lower LCA prices in the sales campaigns that the European Union alleges to be lost sales in this proceeding, rather than all sales campaigns that Boeing won over this period. (United States' first written submission, paras. 821 and 822).

[3289] Compilation of Number of Boeing Aircraft Sold in Alleged Lost Sales Campaigns and Related Calculations, (Exhibit USA-295) (HSBI). The United States' methodology determines the average annual amount of the Washington State (and where applicable, City of Everett) B&O tax rate reductions between 2007 and 2012. It then determines the number of sales of the 787 and 737 (both MAX and NG) between 2007 and 2012, and determines the average number of sales of each plane per year in the sales campaigns challenged by the European Union. It divides the annual amount of the Washington State B&O tax rate reduction by the number of sales of the 787, 737 MAX, and 737NG, and the annual amount City of Everett B&O tax rate reduction by the number of sales of the 787. This is to take into account that the Washington State B&O tax rate reduction applies to both the 787 and the 737 families of LCA.

[3290] United States' response to Panel question No. 164, paras. 69-77. For the sales campaigns subject to the Panel's request for information pursuant to Article 13 of the DSU, see annex 1 to the Panel's request to the United States for information pursuant to Article 13 of the DSU, dated 18 December 2012.

Table 13: Comparisons of per-aircraft rates of subsidization with per aircraft prices

LCA model	Per-aircraft rate of subsidisation[3291] USD	Average 2012 list price[3292] USD	Average actual 2012 price[3293] USD	Estimated average actual price[3294] USD
787	**[***]**	225 million	**[[**HSBI**]]**	126 million
737 MAX	**[***]**	96.6 million	**[[**HSBI**]]**	54.1 million
737NG[3295]	**[***]**	86.2 million	**[[**HSBI**]]**	48.3 million

9.390. The United States concludes that the per-aircraft rates of subsidization are dwarfed by the actual prices of the aircraft in question, demonstrating that the tied tax subsidies could not possibly have caused the adverse effects alleged by the European Union.[3296]

9.391. In the original proceeding, the Appellate Body discussed how the magnitudes of the tied tax subsidies should be taken into account in assessing their impact on Boeing's prices:

> Depending on the circumstances of each case, an assessment of whether subsidy amounts are significant should not necessarily be limited to a mere inquiry into *what* those amounts are, either in absolute or per-unit terms. Rather, such an analysis may be situated within a larger inquiry that could, for instance, entail viewing these amounts against considerations such as the size of the market as a whole, the size of the subsidy recipient, the per-unit price of the subsidised product, the price elasticity of demand, and, depending on the market structure, the extent to which a subsidy recipient is able to set its own prices in the market, and the extent to which rivals are able or prompted to react to each other's pricing within that market structure.[3297]

9.392. We therefore briefly set forth the evidence before the Panel pertaining to the factors identified by the Appellate Body as being potentially relevant to an assessment of the magnitudes of subsidies and their impact on Boeing's prices. Narrow-body, single-aisle LCA represented in the vicinity of USD 61.9 billion, 63.4 billion and 18 billion in sales, based on the Panel's approximation of order values, in the 2013-2015 period.[3298] Boeing's Commercial Airplanes segment[3299] reported

[3291] United States' first written submission, paras. 820-824.

[3292] United States' response to Panel question No. 164 (citing European Union's first written submission, paras. 894, 898, and 923). The United States calculates the average list price of the 737 MAX, 737NG, and 787 by averaging the 2012 list price across each family's size variations.

[3293] United States' response to Panel question No. 164, paras. 69-76. These are the average actual prices paid in sales campaigns subject to the Panel's Article 13 request (see annex 1 to the Panel's request to the United States for Information pursuant to Article 13 of the DSU, dated 18 December 2012).

[3294] This calculation was made using an estimated discount of 44% off the average 2012 list-price of the relevant LCA. The 44% discount is the average discount from 2012 list prices of Boeing LCA estimated in the International Trade Resources Report submitted by the European Union in connection with its calculation of the annual amounts of the Washington State B&O tax rate reduction. (See ITR Report, (Exhibit EU-25), para. 11).

[3295] The United States appears to have made an error in calculating the 2012 average list price of the 737NG. It states that the average list price of the 737NG is USD 96.6 million, which is the same as the average list price for the 737 MAX. The correct 2012 average list price for the 737NG, based on the figures that the United States cites from the European Union's first written submission, is USD 86.2 million. (See United States' response to Panel question No. 164 (citing European Union's first written submission, para. 894)).

[3296] United States' first written submission, paras. 819-824; response to Panel question No. 164, paras. 69-79; and comments on the European Union's response to Panel question No. 164, paras. 146-155.

[3297] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1193. (emphasis original)

[3298] These approximate order values were obtained by multiplying estimates of actual prices for the 737 MAX and 737NG by the number of orders of each LCA model between 2013 and 2015, reported in the Ascend data base submitted by the European Union. (See Ascend data base, Orders, data request as of 29 September 2015, (Exhibit EU-1658)). The estimated actual prices of USD 54.1 million and USD 48.3 million for the 737 MAX and 737NG, respectively, were obtained by applying a 44% discount rate to their 2012 average list prices. The estimated discount rate of 44% is from the International Trade Resources Report submitted by the European Union. (See ITR Report, (Exhibit EU-25)).

[3299] Boeing's activities are organized into five principal segments, of which "Commercial Airplanes" is one. The other segments are the three Defense, Space & Security segments (Boeing Military Aircraft, Network & Space Systems and Global Services & Support), and Boeing Capital. Boeing's Commercial Airplanes segment occupies floor space for manufacturing, warehousing, engineering, and other productive uses in Greater Seattle (the State of Washington), Greater Charleston (South Carolina), Portland (Oregon), Greater Los Angeles

revenues of approximately USD 49 billion, 53 billion and 60 billion in 2012, 2013, and 2014, respectively.[3300] Its reported R&D expenses over the same period were approximately USD 2 billion, 1.8 billion and 1.8 billion, respectively.[3301] As already noted in Table 13 above, the estimated actual per-unit prices of a 737 MAX and 737NG (based on 2012 average list prices of USD 96.6 million and USD 86.2 million, respectively) were approximately USD 54.1 million and USD 48.3 million.

9.393. We have calculated the number and estimated value of Boeing 737 MAX and 737NG orders (as well as the number and estimated value of 787, 777, and 777X orders) from 2013-2015, as set forth in Table 14 below.

Table 14: Number and estimated value of orders of Boeing LCA 2013-2015[3302]

	Number and value of orders in 2013	Number and value of orders in 2014	Number and value of orders to September 2015[3303]
777	55 orders	63 orders	34 orders
	USD 8.7 billion	USD 10 billion	USD 5.4 billion
777X	66 orders	220 orders	20 orders
	USD 13.7 billion	USD 45.5 billion	USD 4.1 billion
787	183 orders	50 orders	52 orders
	USD 23.1 billion	USD 6.3 billion	USD 6.6 billion
737 MAX	699 orders	900 orders	206 orders
	USD 37.8 billion	USD 48.7 billion	USD 11.1 billion
737NG	498 orders	305 orders	143 orders
	USD 24.1 billion	USD 14.7 billion	USD 6.9 billion
Total value of orders	**USD 107.4 billion**	**USD 125.2 billion**	**USD 34.1 billion**

9.394. We recall that the estimated total amount of the Washington State B&O tax rate reduction is approximately USD 325 million over the equivalent three year period 2013 - 2015.[3304] It appears that the ratios of subsidy to order value are not unlike those before the panel in the original proceeding.[3305] Of the figures in the original proceeding, the Appellate Body stated that, while it was possible to observe "at a high level of generalization" that the annual value of Boeing's sales is "many orders of magnitude greater than the annual value of the subsidies", this alone is not

(California), Greater Salt Lake City (Utah), Australia, and Canada. (Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A: Boeing's Annual Report on Form 10-K for the fiscal year ended 31 December 2014, p. 16).

[3300] Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A: Boeing's Annual Report on Form 10-K for the fiscal year ended 31 December 2014, item 6, Selected Financial Data.

[3301] Subsidies to Boeing's LCA Division (2013-2014 Update), (Exhibit EU-1451), annex A: Boeing's Annual Report on Form 10-K for the fiscal year ended 31 December 2014, p. 23.

[3302] As explained in fn 3298 above, the estimated value of the orders each year is calculated by multiplying the number of orders of each LCA model by an estimate of the actual price of that LCA model (as opposed to list prices). The estimate of the actual price of each LCA model is obtained by applying a 44% discount rate to the average 2012 list price of each model. The estimated discount rate of 44% is obtained from the International Trade Resources Report submitted by the European Union. (See ITR Report, (Exhibit EU-25)). The number of orders of each LCA model per year is based on the Ascend data base submitted by the European Union. (See Ascend data base, Orders, data request as of 29 September 2015, (Exhibit EU-1658)).

[3303] Includes orders until September 2015. (See Ascend data base, Orders, data request as of 29 September 2015, (Exhibit EU-1658)).

[3304] See para. 8.670 above.

[3305] See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1814 and 7.1815.

indicative of the significance of the subsidy amounts.[3306] According to the Appellate Body, this is because "even relatively small subsidies may have significant effects, depending on the nature of the subsidies, and the circumstances in which those subsidies are received, including the relevant market structure and conditions of competition in that market."[3307]

9.395. The Panel sought to determine whether a price reduction enabled by a relatively small subsidy could nevertheless have determined the outcome of a price-sensitive sales campaign. Accordingly, in its third set of questions to the parties, the Panel asked both parties to provide some indication of the magnitude of difference in Airbus and Boeing LCA pricing that had determined the outcomes of any of the highly competitive LCA sales campaigns that the European Union had identified as evidence of Airbus lost sales in this proceeding.

9.396. In response, the United States points to two types of evidence on the record that it considers useful in making this determination. The first involves the magnitudes of price movements in the sales campaigns, based on information such as price lists and the initial and final offer data in the sales campaign evidence.[3308] For sales campaigns involving single-aisle aircraft, the United States refers to HSBI evidence for select single-aisle campaigns where Boeing's final offer involved increases in direct price discounts in the range of USD **[[HSBI]]**.[3309] According to the United States, the scale of such direct price discounts arising through the course of negotiations in a campaign shows that the amounts of Washington State B&O tax rate reduction are too small to plausibly be a genuine and substantial cause of significant lost sales. The second type of evidence involves the European Union's calculations of the differences between Boeing's net aircraft prices and its appraised values, which the European Union had submitted as an objective indicator of low pricing by Boeing given the difficulty of assessing net aircraft prices in a non-transparent market context.[3310] The United States argues that, although the European Union's calculations are flawed, the magnitude of the differences, which for single-aisle aircraft average in the vicinity of USD **[[HSBI]]**, also reveals the relative insignificance of the Washington State B&O tax rate reduction amounts.[3311]

9.397. The European Union considers that airframe list prices and discounts from list prices are irrelevant as indicators of whether the subsidy magnitudes could have affected the outcomes of the sales campaigns because published list prices are well known to be wholly unreliable guides to the prices that customers actually pay.[3312] The levels of additional price discounts between initial and final offers are no more illuminating, because LCA manufacturers understand that a sales campaign will involve several rounds of bidding, requiring improved offers, and they therefore factor the expectation of this strategic interaction into their initial offers.[3313] The European Union similarly considers that differences between Boeing's net prices and its appraised values say nothing about the relative value between Boeing and Airbus offers, which is the relevant metric that drives customers' purchasing decisions.[3314]

9.398. The European Union also argues that differences in actual pricing of LCA are not meaningful in and of themselves because the "net prices" of Airbus and Boeing LCA offers obscure price differences that arise from differences between the competing but nevertheless "non-identical" aircraft in terms of their size and range, per-trip and per-seat operating costs and timing of their availability, all of which must be assessed against the specific requirements of a customer and that customer's cost of capital, among other factors.[3315] To overcome this lack of

[3306] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1254.
[3307] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1254. The Panel also acknowledges Canada's argument that the fact that the effects of subsidies will likely vary depending on their relative magnitude as compared to prices, production costs, overall size of the market or sales of a company in the market holds true, in particular, in the case of a small subsidy. According to Canada, while a small subsidy may have an effect on prices (depending on its nature, the circumstances of its provision, market structure and conditions of competition), a panel must provide a reasoned and adequate explanation if it so concludes. (Canada's third-party submission, paras. 50-53).
[3308] United States' response to Panel question No. 164, para. 68.
[3309] United States' response to Panel question No. 164, paras. 75 and 76.
[3310] See European Union's comments on the United States' response to Panel question No. 164, para. 144.
[3311] United States' response to Panel question No. 164, paras. 78 and 79.
[3312] European Union's comments on the United States' response to Panel question No. 164, para. 143.
[3313] European Union's comments on the United States' response to Panel question No. 164, para. 143.
[3314] European Union's comments on the United States' response to Panel question No. 164, para. 144.
[3315] European Union's response to Panel question No. 164, para. 108.

comparability of prices offered by Airbus and Boeing for their competing LCA, customers account for non-price factors through NPV assessments for the respective offers.[3316] The European Union argues that the differences in NPVs between the respective offers of Airbus and Boeing in particular sales campaigns are a "reliable surrogate" for the information concerning the differences in sales campaign pricing requested by the Panel.[3317]

9.399. The European Union does not, however, provide an indication of the differences in customers' NPV assessments of the respective Airbus and Boeing offers for any individual sales campaigns before the Panel. Rather, it submits a statement by Kiran Rao, Airbus' Executive Vice President Strategy and Marketing.[3318] Mr Rao states that **[[HSBI]]**. The European Union then presents a calculation of its allegations of the *total amounts of all measures alleged to be specific subsidies in this proceeding* from 2007 through 2014 (including its estimates of the amounts of the "financial contributions" provided through the post-2006 NASA aeronautics R&D measures based on the "top-down" methodology discussed in Section 8.2.2.6) compared to Boeing's total annual *deliveries* of aircraft between 2007 and 2014. The European Union's calculations result in generalized per-aircraft subsidy amounts of USD 1.95 million, 1.93 million, and 1.86 million for 2012, 2013, and 2014, respectively, which the European Union argues exceeds the NPV difference discussed by Mr Rao. On the basis of this comparison, the European Union asserts that the "per-aircraft" amount of all of the subsidies significantly exceeds the typical difference in value between the respective Airbus and Boeing offers in "closely fought and very competitive sales campaigns".[3319]

9.400. We agree with the European Union that an analysis of the degree of magnitudes of price movements in sales campaigns, or of the differences between Boeing's net prices and appraised values, however measured, is of limited assistance in assessing whether a comparatively small subsidy may make a difference to the outcome of a sales campaign. While we are mindful of the limits to which customers' NPV analyses of competing offers can be relied upon, we consider that this information could at least provide some indication of the potential for a comparatively small price reduction to determine the outcome of a sales campaign.

9.401. However, we do not accept the European Union's estimates of per-aircraft subsidy amounts, because they are based on significantly flawed estimates of the amounts of the subsidies. First, the amount estimate on which the European Union bases its per-aircraft subsidy calculations covers not only the annual amounts of the tied tax subsidies benefiting the relevant Boeing aircraft, but the alleged annual amounts of all post-2006 measures challenged by the European Union, which it aggregates together into one single annual subsidy amount that is then allocated over the number of Boeing LCA delivered in that year. Second, the European Union's total amount estimate includes amount estimates for measures that we find are not specific subsidies, and amount estimates for subsidies which we have rejected as not being an appropriate measure of the amount of the subsidy, or otherwise not being the best evidence.[3320]

9.402. If the Panel replicates the United States' methodology for calculating the per-aircraft rates of subsidization in 2007-2012 for the 2013-2015 period, based on our estimates of the amounts of the Washington State B&O tax rate reduction in 2013-2015 and the aircraft involved in the price-sensitive sales campaigns that occurred in the post-implementation period, we arrive at a per-

[3316] As explained earlier in para. 9.21 when evaluating competing offers, airline and leasing company customers *quantify the projected economic value of the aircraft to that customer over a defined period of time*, taking into account price as well as various non-price factors such as delivery availability, fuel efficiency, performance guarantees or financing assistance to arrive at a "net present value" (NPV) represented by each aircraft manufacturer's offer. (Mourey Statement, (Exhibit EU-34) (BCI), paras. 44-61).

[3317] European Union's response to Panel question No. 164, para. 108. The United States responds that the European Union overstates the importance of NPV differences by treating them as determinative in sales campaigns. According to the United States, NPV analysis is an important tool, but it is understood by customers to be sensitive to inputs and assumptions that are uncertain or subjective. For this reason, small differences in NPV between two offers would likely be viewed as immaterial by customers, and other factors would determine the outcome of the sale. (United States' comments on European Union's response to Panel question No. 164, para. 118). The United States provides a more detailed explanation of the specific limitations of NPV analyses in paras. 119-129 and in the Statement of J. Wojick, Senior Vice President, Global Sales & Marketing, Boeing Commercial Airplanes, (Exhibit USA-600) (HSBI).

[3318] Statement of K. Rao, 6 October 2015, (Exhibit EU-1668) (HSBI). Mr Rao has responsibility for pricing and the competitive positioning of Airbus products.

[3319] European Union's response to Panel question No. 164, paras. 114 and 115.

[3320] See Section 8.3 above.

aircraft rate of subsidization of approximately USD 1.99 million per 737 MAX and 737NG.[3321] This amount *does* exceed the NPV difference that the evidence before us suggests can be determinative of the outcomes of sales campaigns involving single-aisle aircraft, as well as what we are reasonably able to infer regarding the differences in final net prices for the price-sensitive sales campaigns in the post-implementation period, based on our analysis of the sales campaign evidence.

9.403. While the sales campaign evidence does not provide direct evidence of the net prices of the final Boeing and Airbus offers, the parties do allege approximate differences in net prices between the competing Airbus and Boeing offers for some of the sales campaigns.[3322] There is HSBI evidence from the sales campaign that led to the Fly Dubai 2014 order from which it is possible to infer that the difference between Boeing and Airbus final net prices was in the vicinity of **[[HSBI]]**.[3323] There is also evidence from the Air Canada 2013 campaign regarding the magnitudes of the incremental proposals made by Airbus in the concluding stages of the campaign that suggests that Airbus thought it was close enough to Boeing on price that relatively small improvements on price could affect the outcome of the campaign.[3324] The evidence from the sales campaigns in respect of the Icelandair 2013 order could suggest a somewhat larger price differential than appears from the evidence in the Fly Dubai and Air Canada campaigns, however, this is somewhat contradicted by other evidence that Airbus' final offer for both the A320neo and A320ceo was **[[HSBI]]**, which suggests that at the final stage, Airbus had closed the gap.[3325] We also recall the evidence submitted by the European Union, which the United States does not appear to contradict, that in certain price-sensitive sales campaigns involving single-aisle LCA, the NPV differences can be as small as **[[HSBI]]**.[3326] The HSBI evidence from the Fly Dubai 2008 and Delta 2011 campaigns suggests that the difference in net prices in those campaigns were approximately **[[HSBI]]**[3327] and **[[HSBI]]**[3328] which indicates that the magnitudes of the Washington State B&O tax rate reduction were capable of enabling at least a portion of Boeing's pricing advantage, contributing in substantial part to its winning those campaigns.

9.404. We are therefore satisfied that the Washington State B&O tax rate reduction, through the effects on Boeing's pricing, contributed in a genuine and substantial way to determining the outcome of price-sensitive sales campaigns involving the 737 MAX and 737NG and the A320neo and A320ceo in the Fly Dubai 2014, Air Canada 2013 and Icelandair 2013 campaigns.[3329] Accordingly, we consider that the effects of the Washington State B&O tax rate reduction were lost sales of the A320neo and A320ceo in the Fly Dubai, Air Canada, and Icelandair sales campaigns in the 2013-2015 period.[3330]

[3321] Applying the United States' methodology, the Panel divides the total amount of the Washington State B&O tax rate reduction for 2013-2015, based on the Panel's estimate (USD 325 million) for an average of USD 108.3 million per year, by an average of 54.3 single-aisle aircraft orders per year for 2013-2015 (calculated from the total of 11 737NGs and 152 737 MAX ordered from the Fly Dubai 2014, Air Canada 2013 and Icelandair 2013 campaigns, divided by three), to arrive at approximately USD 1.99 million (USD 1.994 million) per single-aisle aircraft ordered in price-sensitive LCA sales campaigns between 2013 and 2015.

[3322] However, neither party provides direct evidence concerning the magnitudes of difference in Boeing and Airbus pricing that had determined the outcomes of any of the sales campaigns at issue.

[3323] HSBI Appendix (Appendix 2), fn 588. Three of the five LCA sales campaigns that we find to be price-sensitive occurred in the post-implementation period: Fly Dubai 2013, Air Canada 2013 and Icelandair 2012. Although the Icelandair sales campaign took place from May 2012, the order did not occur until February 2013. (European Union's first written submission, para. 1788).

[3324] HSBI Appendix (Appendix 2), para. 264.

[3325] HSBI Appendix (Appendix 2), paras. 249 and 250.

[3326] Statement of K. Rao, 6 October 2015, (Exhibit EU-1668) (HSBI), para. 2.

[3327] HSBI Appendix (Appendix 2), para. 164.

[3328] HSBI Appendix (Appendix 2), para. 170.

[3329] Although not necessary for our findings concerning the existence of significant lost sales in the post-implementation period, we also consider that the Washington State B&O tax rate reduction was a genuine and substantial cause of lost sales of the A320ceo in the Fly Dubai 2008 and Delta Airlines 2011 sales campaigns.

[3330] The European Union further argues that U.S. subsidies benefiting the 737 MAX and 737NG cause a present threat of significant lost sales, within the meaning of Article 6.3(c) and footnote 13 of the SCM Agreement. (European Union's first written submission, paras. 1649, 1658, 1676, 1691, 1705, 1721, 1746, 1759, and 1795; second written submission, paras. 1790-1797 and 1910-1915; and response to Panel question No. 169, paras. 447-452). In support of this argument, the European Union relies on evidence of the existence of options and purchase rights negotiated in connection with the relevant orders (including evidence

9.405. Finally, we address whether these lost sales can be considered "significant". The Appellate Body has stated that something that is "significant" can be characterized as "important, notable or consequential".[3331] The Appellate Body has also expressed the view that an assessment of whether a lost sale is significant can have both quantitative and qualitative dimensions.[3332] In the original proceeding, the Appellate Body referred to the size of the orders that Boeing had won, the price-competitive nature of the sales campaigns and their strategic importance in concluding that the lost sales represented by the SALE and JAL campaigns were significant lost sales within the meaning of Article 6.3(c) of the SCM Agreement.[3333]

9.406. The Fly Dubai, Air Canada and Icelandair sales campaigns involve orders for approximately 152 737 MAX and 11 737NG aircraft. These orders are comparable in size to the SALE and JAL orders for the 737NG, which the Appellate Body considered to be significant lost sales in the original proceeding. Moreover, there is evidence that each of these campaigns was strategically important to Boeing and Airbus, for various reasons.[3334] We are satisfied that these lost sales are *significant* lost sales, within the meaning of Article 6.3(c) of the SCM Agreement.[3335]

9.407. **We find that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice in the form of significant lost sales of A320neo and A320ceo families of LCA in the post-implementation period, in respect of the sales campaigns Fly Dubai 2014, Air Canada 2013, and Icelandair 2013.**

9.4.3.1.3 Whether the Washington State B&O tax rate reduction is a genuine and substantial cause of impedance or a threat thereof, and displacement or a threat thereof, in respect of the A320neo and A320ceo in the post-implementation period

9.408. In this Section of the Report, we determine whether the Washington State B&O tax rate reduction is a genuine and substantial cause of impedance (or a threat thereof) and displacement (or a threat thereof) of A320neo and A320ceo imports to the United States, within the meaning of Article 6.3(a) of the SCM Agreement, and of A320neo and A320ceo exports to various third country markets, within the meaning of Article 6.3(b) of the SCM Agreement.

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of purchase commitments submitted by the United States in response to the Panel's request for information pursuant to Article 13 of the DSU, showing purchase commitments accompanying firm orders of Boeing LCA. (Boeing Aircraft Commitments, (Exhibit US-13-331) (HSBI)). The European Union makes this threat of significant lost sales argument in relation to the following sales campaigns that we find to evidence significant lost sales: Icelandair 2013 (European Union's first written submission, para. 1795, second written submission, para. 1777), Air Canada 2013 (European Union's response to Panel question No. 169, para. 348), and Fly Dubai 2014 (European Union's response to Panel question No. 169, para. 374). We do not consider that the mere fact that an LCA customer was additionally granted options or purchase rights is sufficient to demonstrate that lost sales in relation to these options and purchase rights are clearly foreseen and imminent, and thus give rise to a threat of significant lost sales. The Panel does not possess sufficient information about the nature of these options and purchase rights, including the conditions under which they may be exercised, to justify treating them as firm orders that are waiting to materialize. Indeed, there is evidence before us to suggest that not all options will be exercised. (See European Union's response to Panel question No. 169, para. 451). We are therefore not persuaded that the European Union has demonstrated that further significant lost sales are likely and "imminent". (Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1171). Finally, we acknowledge the European Union's argument that "follow-on" orders have occurred, which it considers to demonstrate: (a) the materialization of the threat of significant lost sales; as well as (b) the existence of a threat of further significant lost sales. (European Union's second written submission, para. 1797). However, the European Union's use of the term "follow-on" order is not necessarily synonymous with the subsequent exercise of previously acquired options or purchase rights arising out of a previous order. Rather, the European Union uses this term to encompass more broadly situations where Boeing has an incumbency advantage by virtue of a previously won LCA sales campaign. As such, the existence of "follow-on" orders is unconvincing as evidence of a threat of further significant lost sales because such "follow-on" orders in fact arise out of new LCA sales campaigns.

[3331] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1272.

[3332] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1218.

[3333] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1272.

[3334] Airbus' pricing in the Icelandair campaign, discussed at paragraphs 245-251 of the HSBI Appendix, itself suggests the importance of this sale to Airbus. The factors that explain the strategic importance of the Air Canada and Fly Dubai campaigns are discussed at paragraphs 261 and 268, respectively, of the HSBI Appendix (Appendix 2).

[3335] Although not necessary for our findings concerning the existence of significant lost sales in the post-implementation period, we also consider that the lost sales of the A320ceo in the Fly Dubai 2008 and Delta Airlines 2011 sales campaigns were *significant* lost sales, within the meaning of Article 6.3(c) of the SCM Agreement.

9.409. The European Union argues that "certain developments in Airbus' market shares and delivery volumes in various product markets" constitute a threat of impedance, within the meaning of Articles 6.3(a) and 6.3(b) (with respect to the A320neo), and displacement or impedance, or a threat thereof, within the meaning of Article 6.3(a) and 6.3(b) (with respect to the A320ceo), in each case, caused in a genuine and substantial manner by the non-withdrawn U.S. subsidies.[3336]

9.410. In respect of its claims of threat of impedance of imports of the *A320neo* to the United States and of exports to various third country markets, the European Union argues that the U.S. subsidies enable Boeing's product development and pricing decisions that result in deliveries of the 737 MAX family LCA at the expense of deliveries of Airbus' A320neo family LCA. In this respect, the European Union refers to its arguments and evidence concerning the alleged technology effects of the aeronautics R&D subsidies, which the European Union argues have enabled the advanced technology, early launch and early delivery availability of the 737 MAX, and which allegedly give that aircraft family a competitive advantage in the context of the global market for new technology, single-aisle aircraft.[3337] It also refers to its arguments and evidence concerning the effects of the post-2006 subsidies on Boeing's LCA pricing, which it argues result in an increase in Boeing's market share at Airbus' expense.[3338] The European Union asserts that "consequently", Boeing's future delivery advantage in these markets, based on present orders, is the result of U.S. subsidies.[3339]

9.411. Additionally, for certain geographic markets of substantial size, such as the Brazilian market, the European Union asserts that "rough parity in the distribution of market shares between duopolists" would be expected. It alleges that Boeing's significantly greater than 50% market share of present and future deliveries of narrow-body, single-aisle LCA in these markets, for several years, along with other evidence of causation, supports the argument that the deviation is the result of the U.S. subsidies.[3340] Finally, the European Union refers to its allegations of significant lost sales of A320neo family LCA due to U.S. subsidies benefiting the 737 MAX. It argues that, as a result of those lost sales, deliveries of A320neo family LCA will be impeded in the relevant country markets.[3341]

9.412. In respect of its claims of displacement or impedance, or threats thereof, of imports of the *A320ceo* to the United States and of exports to various third country markets, the European Union refers to its arguments and evidence concerning the effects of the post-2006 subsidies on Boeing's LCA pricing, which it argues result in an increase in Boeing's market share at Airbus' expense.[3342] The European Union also refers to certain "large volume country markets" in which Boeing has, and will continue to have, a majority of present and/or future deliveries of 737NGs over the A320ceo (United States, Canada and Indonesia). The European Union asserts that "rough parity in the distribution of market shares between duopolists" would be expected[3343] and that Boeing's delivery advantage in these markets results from Boeing's "aggressive pricing" which is enabled by the U.S. subsidies.[3344] Additionally, the European Union refers to its allegations of significant lost sales of A320ceo family LCA due to U.S. subsidies benefiting the 737NG. It argues that, as a result of those lost sales, deliveries of A320ceo family LCA are displaced or impeded, and/or there is a threat that A320ceo deliveries will be displaced or impeded in the relevant country markets.[3345]

9.413. The United States responds that, based on the Appellate Body's guidance in the original proceeding, claims of impedance should be supported by evidence of changes in the relative market shares, over a sufficiently representative period, to demonstrate clear trends.[3346] The United States argues that the market share data provided by the European Union in support of its

[3336] European Union's first written submission, paras. 1823 and 1893; second written submission, paras. 1837 and 1946.
[3337] European Union's first written submission, para. 1826.
[3338] European Union's first written submission, para. 1826.
[3339] European Union's first written submission, para. 1827.
[3340] European Union's first written submission, para. 1831; second written submission, para. 1840; response to Panel question No. 169, para. 537.
[3341] European Union's first written submission, para. 1828.
[3342] European Union's first written submission, para. 1898.
[3343] European Union's first written submission, paras. 1903, 1913, and 1917.
[3344] European Union's first written submission, para. 1900; second written submission, para. 1950; and response to Panel question No. 169, para. 537.
[3345] European Union's first written submission, para. 1902.
[3346] United States' first written submission, para. 1041.

claims does not establish that, absent the alleged subsidies, Boeing would have been unable to offer the 737 MAX as and when it did, or that 737 MAX or 737NG prices would be higher. The magnitudes of any alleged subsidies that could conceivably be found to affect Boeing's pricing are far too small to cause impedance.[3347]

9.414. The United States argues that the European Union's reliance on 50% market share as a "benchmark" for assessing impedance, displacement and threat thereof in large volume markets such as the Brazilian, United States, Indonesian and Canadian geographic markets, where the market participants are two duopolists, lacks any support in the SCM Agreement. In addition, the European Union has not shown that, absent the subsidies, the market shares would be 50% in any market, much less all large volume markets.[3348]

9.415. The United States also argues that the Appellate Body in the original proceeding unambiguously indicated that the mere recitation of lost sales in a market is insufficient to establish displacement, impedance, or threats thereof. The United States argues that the alleged lost sales on which the European Union bases its claims of displacement, impedance, or threats thereof are not genuinely and substantially caused by the alleged subsidies.[3349]

9.416. We begin our evaluation of the European Union's claims of impedance, displacement and threats thereof by first explaining our understanding of the phenomena of impedance and displacement, and the evidence that is relevant or necessary to support the existence of each phenomenon, based on the explanations of the Appellate Body in *EC and certain member States – Large Civil Aircraft*.

9.417. "Displacement", within the meaning of Articles 6.3(a) and 6.3(b) of the SCM Agreement, refers to an economic mechanism in which imports or exports of a like product are *replaced* by the sales of the subsidized product.[3350] Specifically, displacement connotes a "substitution effect between the subsidized product and the like product of the complaining Member" and in the context of Article 6.3(b), displacement arises where exports of the like product of the complaining Member are substituted in a third country market by exports of the subsidized product.[3351]

9.418. The existence of displacement depends upon there being a competitive relationship between the two sets of products in the market. An analysis of displacement should assess whether the phenomenon is discernible by examining trends in data relating to export volumes and market shares over an appropriately representative period.[3352] The Appellate Body's analysis in *EC and certain member States – Large Civil Aircraft* suggests that the following characteristics will normally be necessary before a panel can reach a finding of displacement under Article 6.3(b): First, at least a portion of the market share of the exports of the like product of the complaining Member must have been taken over or substituted by the subsidized product; and second, it must be possible to discern trends in volume and market share.[3353] Article 6.4 of the SCM Agreement, which applies to the phenomenon of displacement referred to in Article 6.3(b), requires that a finding of displacement be supported by evidence of changes in the relative market share in favour of the subsidized product, over a sufficiently representative period, to demonstrate "clear trends" in the development of the market concerned. A panel assessing a claim of displacement of exports would have to look at whether trends are discernible, with the identification of a trend being more accurate the larger the data set used in the analysis.[3354]

[3347] United States' second written submission, paras. 1309 and 1380.

[3348] United States' first written submission, paras. 1043 and 1085; second written submission, paras. 1313 and 1382.

[3349] United States' first written submission, paras. 1042, 1045,1046,1050, 1052,1054, 1056, 1058, 1099, and 1108; second written submission, paras. 1310,1315, 1317, 1319, 1321, 1323, 1326, 1329, and 1382.

[3350] Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, para. 1119; and *US – Large Civil Aircraft (2nd complaint)*, para. 1071.

[3351] Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, para. 1160; and *US – Large Civil Aircraft (2nd complaint)*, para. 1071.

[3352] Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, paras. 1165, 1166, and 1170; and *US – Large Civil Aircraft (2nd complaint)*, para. 1071.

[3353] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1082.

[3354] Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, paras. 1166 and 1167; and *US – Large Civil Aircraft (2nd complaint)*, para. 1081.

9.419. "Impedance" arises both in situations where the exports or imports of the like product of the complaining Member would have expanded had they not been *obstructed* or *hindered* by the subsidized product, as well as where such exports or imports did not materialize at all because production was *held back* by the subsidized product.[3355] The concept of impedance may involve a broader range of situations than displacement, and while there may be some overlap between the concepts of displacement and impedance, they are not interchangeable.[3356]

9.420. As with claims of displacement under Article 6.3(b), Article 6.4 of the SCM Agreement provides that a finding of impedance of exports under Article 6.3(b) should be supported by evidence of changes in the relative market share in favour of the subsidized product, over a sufficiently representative period to demonstrate clear trends in the development of the market concerned. However, since impedance may not be a "visible" phenomenon (unlike displacement), evidence of trends may not be dispositive, or may hold less probative value, for a finding of impedance.[3357]

9.421. The Appellate Body has explained that there are important distinctions between the phenomena of displacement, impedance and lost sales, even though the concepts may potentially overlap in that these phenomena all relate to a firm's sales.[3358] Importantly for the present claims, the Appellate Body considered that the original panel had implicitly accepted the European Communities' argument that every lost sale to Airbus in a particular country necessarily resulted in the displacement or impedance of exports of Airbus aircraft in that third-country LCA market. The Appellate Body stated that it did not agree with the implication of the panel's reasoning that the phenomena of displacement and impedance necessarily follow from a finding of significant lost sales.[3359]

9.422. The European Union seeks to demonstrate the existence of impedance, displacement and threats thereof, by reference to data showing deliveries of single-aisle LCA due in the United States and in various third-country markets over periods that extend as far as 2025. Underpinning this data are the European Union's causation arguments in support of its claims of impedance, displacement and threats thereof: (a) the combined effects of the aeronautics R&D subsidies that operate through a technology causal mechanism with those of the post-2006 subsidies that operate through a price causal mechanism, collectively, give the 737 MAX a competitive and pricing advantage over the A320neo; and (b) the effects of the post-2006 subsidies that operate through a price causal mechanism give the 737NG a pricing advantage over the A320ceo.

9.423. The European Union's approach to demonstrating the existence of impedance, displacement and threats thereof is therefore based on an implicit aggregation of all of the subsidies at issue in this proceeding into one group, and an argument that the *collective effects* of these subsidies provides an explanation for Airbus' market shares in the various geographic markets. As we explain in Section 9.2.3.4, we have aggregated various subsidies into groups depending on our analysis of their nature and operation. We do not, however, consider it appropriate to aggregate all of the subsidies into one single group and to assess their effects on Airbus' sales, market shares or prices in an integrated manner. Consistent with the approach to collective assessment of multiple subsidies articulated by the Appellate Body in the original proceeding, provided we find that one aggregated group of subsidies is a *genuine and substantial* cause of any of the alleged serious prejudice phenomena in the narrow-body, single-aisle product market, we would then consider whether to cumulate those effects with the effects of any other aggregated group of subsidies that we find to be a *genuine* cause of the same phenomena. The European Union's approach to analysing whether the U.S. subsidies benefiting the 737 MAX and the 737NG are a genuine and substantial cause of any of the Article 6.3(a) and (b) market phenomena is necessarily at odds with the Panel's conclusions as to the appropriate way to

[3355] Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, para. 1161; *US – Large Civil Aircraft (2nd complaint)*, paras. 1071 and 1086.

[3356] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1071.

[3357] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1086.

[3358] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1241. According to the Appellate Body, the assessment of displacement or impedance has a well-defined geographic focus, whereas the relevant geographic market for assessing lost sales is not similarly confined. The fact that lost sales must be "significant" implies that the assessment has both a quantitative and qualitative dimension, whereas the assessments of displacement or impedance is primarily quantitative in nature.

[3359] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1240 and 1241.

collectively assess the effects of the subsidies at issue in this proceeding, given their nature and operation.

9.424. We recall that, in analysing whether the U.S. subsidies, operating through either a technology causal mechanism or a price causal mechanism, cause any of the alleged forms of serious prejudice with respect to Airbus single-aisle aircraft in the post-implementation period, the structure of the Panel's analysis is necessarily as follows: (a) to analyse whether an aggregated group of subsidies (aggregated in accordance with our explanation in Section 9.2.3) is a *genuine and substantial* cause of any one or more of the Article 6.3 market phenomena; and (b) if so, to analyse whether any other aggregated group of subsidies is a *genuine* cause of any of the same Article 6.3 market phenomena, so that the effects of the latter aggregated group can be cumulated with those of the former.

9.425. In Section 9.4.2, we evaluate the various alleged technology effects on the 737 MAX of the pre-2007 aeronautics R&D subsidies and of certain post-2006 aeronautics R&D subsidies, and find that the European Union has not demonstrated that these technology effects arise, and thus that the effects of the subsidies in question are any of the alleged Article 6.3 market phenomena with respect to the A320neo.[3360]

9.426. In Section 9.4.3.1, we evaluate the European Union's arguments that the Washington State B&O tax rate reduction benefiting the 737 MAX and 737NG, through its effects on Boeing's pricing of narrow-body, single-aisle LCA, is a genuine and substantial cause of *significant lost sales* of Airbus narrow-body, single-aisle LCA in the post-implementation period. To recall, in Section 9.4.3.1.2, we identify five LCA sales campaigns involving the 737 MAX/737NG and A320neo/A320ceo between 2007 and 2015 which were price-sensitive in the sense that Boeing was under particular pressure to reduce its prices in order to secure the sales and there were no non-price factors that explain Boeing's success in obtaining the sale. We therefore conclude that the Washington State B&O tax rate reduction, in these sales campaigns, contributed in a *genuine and substantial* way to the lowering of Boeing's prices, and moreover, that the effects of this subsidy were three significant lost sales of Airbus narrow-body, single-aisle LCA in the post-implementation period.

9.427. Accordingly, we next analyse here, in this Section 9.4.3.1.3, whether the Washington State B&O tax rate reduction is a *genuine and substantial* cause of the *next category of Article 6.3 market phenomena alleged by the European Union*; i.e. impedance and/or displacement (and/or threats of the foregoing) of imports and/or exports of Airbus single-aisle LCA in the post-implementation period, within the meaning of Articles 6.3(a) and 6.3(b) of the SCM Agreement.[3361] To do this, we necessarily begin with our conclusion from Section 9.4.3.1.1 above, that the Washington State B&O tax rate reduction affected Boeing's pricing behaviour in five price-sensitive sales campaigns between 2007 and 2015. We also take into account our findings at the conclusion of Section 9.4.3.1.2 above that all five of those LCA sales campaigns were significant lost sales which are the effects of the Washington State B&O tax rate reduction.[3362]

9.428. The European Union has not advanced an additional causal theory to support the alleged causal link between the Washington State B&O tax rate reduction benefiting the 737 MAX and the 737NG, and the phenomena of impedance, displacement and threats thereof, beyond that advanced and discussed comprehensively in connection with our evaluation of whether this subsidy was a genuine and substantial cause of significant lost sales.[3363] To the extent that the European Union relies on lost sales in the single-aisle market (as the effects of the Washington State B&O tax rate reduction) to support its claims of impedance and displacement (including threats thereof), it can only validly do so for the geographic markets related to the sales campaigns for which we find the Washington State B&O tax rate reduction was a genuine and substantial cause of Boeing's lower prices, and of the lost sales to Airbus. For the other geographic markets, there is no basis for considering whether the effects of the Washington State B&O tax

[3360] See Section 9.4.2.3 above.

[3361] Should the Panel find that the remaining aggregated categories of subsidies benefiting the 737 MAX and 737NG; i.e. the state and local cash flow subsidies, or the post-2006 aeronautics R&D subsidies that operate through a price causal mechanism, through their effects on Boeing's pricing of those aircraft, are a genuine cause of any of the Article 6.3 market phenomena, we will then cumulate the effects of those subsidies with those of the Washington State B&O tax rate reduction.

[3362] Only three occurred in the post-implementation period.

[3363] See Sections 9.4.3.1.1 and 9.4.3.1.2 above.

rate reduction are impedance, displacement or threats thereof because it has not been established that the subsidy in question affected Boeing's prices and thus has any causal connection to Boeing's share of orders or deliveries in those markets.

9.429. The European Union does additionally argue that, for large volume markets such as Brazil, United States, Canada, and Indonesia, it can be assumed that, in the absence of one duopolist's product being subsidized, market share should be roughly 50% each.[3364] Accordingly, Boeing's significantly greater than 50% market share of present and future deliveries of narrow-body, single-aisle LCA in these markets, for several years, along with other evidence of causation, supports the argument that the deviation from rough parity is the result of the U.S. subsidies.[3365] We are not persuaded by the European Union's counterfactual argument that, in the absence of the Washington State B&O tax rate reduction, Airbus' market share in these markets would have been close to 50%.

9.430. We see no reason to assume that, due to the nature of the global LCA product markets as duopolies, LCA deliveries to certain geographic markets should be more or less evenly split between Airbus and Boeing. It is not uncommon for multiple airlines from a particular region to maintain a long-term preference for either Airbus or Boeing, due their pre-existing relationships with the manufacturer and the costs associated with switching LCA manufacturers. There is no basis to conclude that the dynamics of the LCA markets are such that for each large volume country market, Airbus and Boeing should generally each maintain a 50% share of deliveries.

9.431. Although the European Union argues that data showing trends in Airbus' and Boeing's relative shares of actual and projected LCA deliveries for the various geographic markets supports its claims of impedance and displacement and threats thereof, without a causal theory that explains how the subsidy in question affected Boeing's pricing behaviour, leading to the consequent impact on Airbus' sales, the Panel is unable to attribute the alleged impedance or displacement of Airbus' imports and exports to the effects of the Washington State B&O tax rate reduction.

9.432. We will therefore examine whether the European Union's evidence demonstrates that the effect of the Washington State B&O tax rate reduction was displacement, impedance or threats thereof for the four geographic markets for which we find Boeing and Airbus were involved in price-sensitive, single-aisle LCA sales campaigns, and therefore, for which a causal connection is established between the Washington State B&O tax rate reduction and Boeing's LCA prices.[3366] For those geographic markets, we will compare the combined market shares of the A320neo *and* the A320ceo to the combined market shares of the 737 MAX *and* the 737NG.[3367] Specifically, we will base our analysis of relative market shares on actual and projected Airbus and Boeing deliveries of single-aisle LCA over the period from 2007 to 2025.[3368]

[3364] European Union's first written submission, para. 1582.

[3365] European Union's first written submission, para. 1831; second written submission, para. 1840; and response to Panel question No. 169, para. 537.

[3366] United States (Delta Airlines 2011); United Arab Emirates (Fly Dubai 2008 and 2014); Canada (Air Canada 2013) and Iceland (Icelandair 2013). For these geographic markets, there is accordingly a causal phenomenon in which Boeing's receipt of the Washington State B&O tax rate reduction gave rise to lower than otherwise 737 MAX and 737NG prices, and lost sales of competing Airbus single-aisle aircraft.

[3367] For reasons we explain in paras. 9.35 through 9.39 we disagree with the European Union's proposed product market delineation and instead treat the existing technology A320ceo and 737NG and the new technology A320neo and 737 MAX as competing in the same product market for narrow-body, single-aisle aircraft. Our comparison of the relative market share data is based on the European Union's evidence as submitted in the Ascend data base, Deliveries made, data request as of 22 September 2015, (Exhibit EU-1660); and the Ascend data base, Deliveries due, data request as of 22 September 2015, (Exhibit EU-1659).

[3368] As the original panel explained, displacement, impedance, and threat thereof of the complaining party's *imports or exports* necessarily involves the existence of goods crossing borders. For the LCA market, in which there is often a significant time-lag between order and delivery, this means any demonstration of market share trends for the purposes of a displacement, impedance or threat thereof claim should be based on delivery data, rather than order data. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1683-7.1686). With respect to the time-period over which we evaluate the existence of market share trends, 2007 to 2025 is the time-period over which the European Union presents its market share data. We note that this period extends both prior to and beyond the reference period of 2013-2015 that we use elsewhere in our findings. We take this longer period in order to ensure, in accordance with the Appellate

9.433. We are aware that the Appellate Body has cautioned against panels mechanistically assuming that a finding of significant lost sales will of itself suffice to additionally establish the existence of impedance. We will examine the market share data submitted by the European Union in support of its claims of impedance and threat of impedance for these four geographic markets in order to determine whether, in light of the Panel's conclusions that in these markets the Washington State B&O tax rate reduction affected Boeing's prices in a manner that gave rise to significant lost sales, it is possible to identify "clear trends".

9.434. We begin with the data for the United States market, which covers claims of threat of impedance of imports of the A320neo and impedance and threat thereof of imports of the A320ceo pursuant to Article 6.3(a) of the SCM Agreement.

Table 15: U.S. single-aisle sales volume and market share data

Year	737NG	737 MAX	A320ceo	A320neo	Boeing market share	Airbus market share
2007	77	--	35	--	69%	31%
2008	91	--	34	--	73%	27%
2009	89	--	23	--	79%	21%
2010	98	--	11	--	90%	10%
2011	46	--	40	--	53%	47%
2012	96	--	32	--	75%	25%
2013	99	--	52	--	66%	34%
2014	126	--	73	--	63%	37%
2015	104	--	77	1	57%	43%
2016	109	--	75	8	57%	43%
2017	91	26	86	33	50%	50%
2018	45	86	25	71	58%	42%
2019	5	128	--	143	48%	52%
2020	--	155	--	152	50%	50%
2021	--	130	--	143	48%	52%
2022	--	113	--	56	67%	33%
2023	--	45	--	40	53%	47%
2024	--	22	--	9	71%	29%
2025	--		--	9	0%	100%
Total	**1076**	**705**	**563**	**665**	**59%**	**41%**

Source: Ascend database, Deliveries made, data request as of 22 September 2015, (Exhibit EU-1659); and Ascend database, Deliveries due, data request as of 22 September 2015, (Exhibit EU-1660).

9.435. The market share data shows that Boeing has enjoyed the majority of the market share for deliveries of single-aisle LCA in the United States between 2007 and 2016. While Boeing's share of deliveries is projected to decrease to 50% in 2017, recover to 58% in 2018 and then hover around the 50% level until 2021, it appears that Boeing has been, and overall will remain, the dominant duopolist for deliveries of single-aisle LCA in the United States' market. If anything, the trend that seems to emerge is that for the next several years until 2021, Airbus' market share will increase. We are aware that an increase in Airbus' market share does not necessarily refute the existence of impedance or threat of impedance, as the relevant question is whether, but for the subsidies at issue, Airbus' imports of single-aisle LCA to the United States would otherwise be higher than they are.

Body's guidance, that the effects of the subsidy are examined over a period of time that is long enough to discern the existence of clear trends. (Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1081 (citing Appellate Body Reports, *EC and certain member States – Large Civil Aircraft*, para. 1166; and *US – Upland Cotton*, para. 478)). This is particularly important for the European Union's threat of displacement and impedance claims, which necessarily require evidence of projected future deliveries.

9.436. However, the only Boeing sale to a U.S. customer that can be causally connected to the Washington State B&O tax rate reduction is the order of 100 737NG aircraft by Delta Airlines in 2011. The Panel was not persuaded that the Washington State B&O tax rate reduction could be causally linked to orders of Boeing single-aisle aircraft by other U.S. customers (American Airlines' 2011 order of 100 737 MAX and 100 737NG, Southwest Airlines' 2011 order of 150 737 MAX and 50 737NG and 2013 order of five 737NG, and United Airlines' 2012 order of 100 737 MAX and 50 737NG and 2013 order of 14 737NG). As explained in the HSBI Appendix and summarized in paragraph 9.383. , Boeing does not appear to have been under particular pressure to reduce its prices in those sales campaigns, and there were non-price factors that explain Boeing's success in obtaining those orders, or the portion of the order that it obtained.

9.437. Although it seems logical to us that, owing to Airbus losing the 2011 Delta Airlines sales campaign due to the effects of the Washington State B&O tax rate reduction, its imports of single-aisle LCA to the United States market will, *to that extent* be *obstructed, hindered or held back*, we are mindful that the phenomenon of impedance is not synonymous with that of lost sales. In any case, there would be little to be gained by the Panel making a finding of impedance of imports in relation solely to lost sales that are already the subject of a finding of significant lost sales.

9.438. However, in this instance, because the Delta Airlines order arose in 2011, the Delta Airlines 2011 campaign is not part of the Panel's finding of significant lost sales in the post-implementation period. The threat of impeded imports of A320ceos into the United States market that arises from that 2011 Delta Airlines lost sale does, however, arise in the post-implementation period. In these circumstances, we consider it appropriate to make a finding in relation to the threat of impedance arising from that lost sale. We therefore find that the effect of the Washington State B&O tax rate reduction is a threat of impedance of imports of Airbus single-aisle LCA into the United States market.

9.439. We next examine the market share data for each of the third-country markets of Canada, Iceland and the United Arab Emirates in relation to claims of impedance and threat thereof, and displacement and threat thereof.

Table 16: Canada single-aisle sales volume and market share data

Year	737NG	737 MAX	A320ceo	A320neo	Boeing market share	Airbus market share
2007	7	--	--	--	100%	--
2008	7	--	--	--	100%	--
2009	10	--	--	--	100%	--
2010	6	--	--	--	100%	--
2011	6	--	--	--	100%	--
2012	3	--	--	--	100%	--
2013	5	--	--	--	100%	--
2014	9	--	--	--	100%	--
2015	13	--	--	--	100%	--
2016	9	--	--	--	100%	--
2017	1	3	--	--	100%	--
2018	--	27	--	--	100%	--
2019	--	35	--	--	100%	--
2020	--	20	--	--	100%	--
2021	--	16	--	--	100%	--
2022	--	8	--	--	100%	--
2023	--	5	--	--	100%	--
2024	--	3	--	--	100%	--
2025	--	5	--	--	100%	--
Total	**76**	**122**	**--**	**--**	**100%**	**0%**

Source: Ascend data base, Deliveries made, data request as of 22 September 2015, (Exhibit EU-1659); and Ascend data base, deliveries due, data request as of 22 September 2015, (Exhibit EU-1660).

Table 17: Iceland single-aisle sales volume and market share data[3369]

Year	737NG	737 MAX	A320ceo	A320neo	Boeing market share	Airbus market share
2018	--	3	--	--	100%	--
2019	--	6	--	--	100%	--
2020	--	5	--	--	100%	--
2021	--	2	--	--	100%	--
Total	**--**	**16**	**--**	**--**	**100%**	**0%**

Source: Ascend data base, Deliveries made, data request as of 22 September 2015 (Exhibit EU-1659); and Ascend data base, deliveries due, data request as of 22 September 2015 (Exhibit EU-1660).

Table 18: United Arab Emirates: Historic and scheduled volumes and market share in 2007-2025

Year	737NG	737 MAX	A320ceo	A320neo	Boeing market share	Airbus market share
2007	--	--	3	--	0.0%	100.0%
2008	--	--	5	--	0.0%	100.0%
2009	6	--	10	--	37.5%	62.5%
2010	4	--	4	--	50.0%	50.0%
2011	11	--	8	--	57.9%	42.1%
2012	7	--	10	--	41.2%	58.8%
2013	7	--	12	--	36.8%	63.2%
2014	8	--	15	--	34.8%	65.2%
2015	9	--	13	--	40.9%	59.1%
2016	5	--	8	--	38.5%	61.5%
2017	6	5	--	--	100.0%	0.0%
2018	--	9	--	--	100.0%	0.0%
2019	--	3	--	--	100.0%	0.0%
2020	--	18	--	3	85.7%	14.3%
2021	--	17	--	7	70.8%	29.2%
2022	--	22	--	7	75.9%	24.1%
2023	--	1	--	3	25.0%	75.0%
2024	--	--	--	6	0.0%	100.0%
2025	--	--	--	--	0.0%	0.0%
Total	**63**	**75**	**80**	**26**	**56.6%**	**43.4%**

Source: Ascend data base, Deliveries made, data request as of 22 September 2015, (Exhibit EU-1659); and Ascend data base, deliveries due, data request as of 22 September 2015, (Exhibit EU-1660).

9.440. As regards the market share data for Canada and Iceland, Boeing maintains 100% of actual and projected deliveries. We note that no deliveries of single-aisle LCA were made or are scheduled to be made into the Icelandic market between 2007 and 2018 or after 2021. Moreover, the volumes of 3, 6, 5 and 2 737 MAX deliveries between 2018 and 2021 are quite low, and are similar to the volumes involved in the Kenyan third-party market for 200-300 seat LCA in the original proceeding.[3370]

[3369] No deliveries of single-aisle LCA were made or are scheduled to be made between 2007 and 2018 or after 2021.

[3370] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1073, table 5, and 1078.

9.441. The issue that arises with respect to the Canadian and Icelandic markets is whether the data is sufficient to identify clear trends as contemplated in Article 6.4. We are mindful that, in the original proceeding, the Appellate Body considered that data showing that Boeing's market share remained at 100% for all periods, and data showing sporadic and low volumes of deliveries, were insufficient to demonstrate clear trends. To recall, the panel considered that there was a threat of impedance in the third-country markets of Ethiopia, Kenya and Iceland based on data showing actual and projected future deliveries of Airbus and Boeing LCA over a period of years from the early 2000s to 2012.[3371] For these third-country markets, however, Boeing's market share remained at 100% over all of the periods considered by the panel. The data for Iceland covered only the years 2010 and 2011, with Boeing deliveries remaining stable at two per year, while the data for Kenya related to 2001, 2010, 2011 and 2012, with very small numbers of deliveries. The Appellate Body considered that this data did not represent a "clear trend". The Appellate Body also expressed reservations as to whether the data for Ethiopia, in terms of the years in which projected deliveries were recorded and the number of deliveries amounted to a "clear trend".[3372] Consequently, the Appellate Body considered the data insufficient to demonstrate clear trends of a threat of impedance as required by Article 6.4 of the SCM Agreement and the panel's findings of threat of impedance in respect of these third-country markets were reversed.[3373]

9.442. Notwithstanding our findings of lost sales of the A320neo being the effects of the Washington State B&O tax rate reduction in relation to Air Canada's order of 61 737 MAX in 2013 and Icelandair's 2013 order of 16 737 MAX, we are unable to see in the data or in the European Union's impedance and threat of impedance arguments regarding the Canadian and Icelandic single-aisle LCA markets anything that would justify us departing from the approach that the Appellate Body took to similar data (and lost sales findings), showing that Boeing enjoyed and will enjoy 100% market share at all relevant times in respect of the Kenyan, Icelandic and Ethiopian third-country markets in the original proceeding.

9.443. With respect to the United Arab Emirates, the data shows a clear trend in which Boeing's single-aisle LCA deliveries are increasing, at least from 2017 until 2022. Airbus maintained a majority of deliveries in every year from 2007 to 2016 except for one. In 2017, when deliveries of the 737 MAX are due to begin, Boeing will overtake Airbus and retain a market share of between 70 and 100% for the subsequent six years. We also find that Fly Dubai's 2008 and 2014 orders of 50 737NG and 75 737 MAX, respectively, are significant lost sales for Airbus.[3374] We conclude, based on the evidence concerning market share trends in the United Arab Emirates market and the evidence of these lost sales, that the effect of the Washington State B&O tax rate reduction is a threat of impedance in the United Arab Emirates market in the post-implementation period.

9.444. **We find that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice to the interests of the European Union in the form of a threat of impedance of imports of the A320ceo to the United States market, within the meaning of Article 6.3(a) of the SCM Agreement, and in the form of a threat of impedance of Airbus single-aisle exports to the United Arab Emirates, within the meaning of Article 6.3(b) of the SCM Agreement, in each case, in the post-implementation period.**

9.4.3.1.4 Whether the Washington State B&O tax rate reduction is a genuine and substantial cause of significant price suppression (including threat thereof) in respect of the A320neo and A320ceo in the post-implementation period

9.445. The European Union argues that the effects of the Washington State B&O tax rate reduction are significant price suppression, and threat of significant price suppression, of the A320neo and A320ceo, within the meaning of Article 6.3(c) of the SCM Agreement.

9.446. We have already found, in paragraph 9.383 above, that in five sales campaigns between 2007 and 2015, Boeing appeared to be under particular pressure to reduce its prices in order to secure the sales, and that there were no non-price factors that explain Boeing's success in

[3371] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1073, table 5.
[3372] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, para. 1087.
[3373] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1089 and 1090.
[3374] See para. 9.404 above.

obtaining the sales.[3375] Accordingly, based on the reasoning of the Appellate Body when analysing the effects of the FSC/ETI subsidies on Boeing's prices in the original proceeding, the Washington State B&O tax rate reduction contributed in a genuine and substantial way to the lowering of Boeing's prices of narrow-body, single-aisle LCA in these five LCA sales campaigns. We will now examine whether the evidence submitted by the European Union demonstrates that the effect of this impact of the Washington State B&O tax rate reduction on Boeing's 737 MAX and 737NG prices is suppression of Airbus' prices of the A320neo and A320ceo in the post-implementation period.

9.447. The European Union argues that the U.S. subsidies cause significant price suppression of the A320neo and A320ceo through a price causal mechanism because they enabled Boeing to: (a) lower the prices of the 737 MAX in competitive sales campaigns and Airbus was required to react to such low pricing by Boeing by reducing the prices at which it offered the A320neo in an attempt to maintain market share[3376]; and (b) lower the prices of the 737NG in competitive sales campaigns and Airbus was required to react to such low pricing by Boeing by reducing the prices at which it offered the A320ceo.[3377] The European Union bases its arguments concerning the existence of significant price suppression of the A320neo and A320ceo on the conditions of competition in the market for "new technology single-aisle LCA" and in the market for "existing technology single-aisle LCA", respectively.[3378] The European Union's significant price suppression claims rely on two types of evidence: (a) price trend data which purports to demonstrate that, absent the U.S subsidies, prices for the A320neo and A320ceo in the post-implementation period would be higher[3379]; and (b) certain sales campaigns that *Boeing* won, which the European Union nonetheless considers are illustrative examples of Boeing's strategy of "aggressive pricing" which adversely impacts Airbus' pricing.[3380]

9.448. The European Union presents average aggregated prices at order data and average price per seat data for A320neo family aircraft, showing that average A320neo family prices have **[***]**.[3381] As regards the A320ceo, the European Union presents average aggregated prices at order data and average price per seat data showing that A320ceo order prices have **[***]**.[3382] The European Union compares A320neo and A320ceo price movements to Airbus' changing input costs

[3375] Fly Dubai 2008, Delta 2011, Icelandair 2012, Air Canada 2013, and Fly Dubai 2014.

[3376] The European Union's claims of significant price suppression with respect to the A320neo are also based on the alleged effects of the aeronautics R&D subsidies that operate through a technology causal mechanism to enable early 737 MAX delivery slots than would otherwise have been available, see Section 9.4.2.

[3377] European Union's first written submission, paras. 1805 and 1873.

[3378] European Union's first written submission, paras. 1806, 1807, 1873, and 1883.

[3379] European Union's first written submission, paras. 1801 (for A320neo), 1876 (for A320ceo price trends); and Airbus proprietary presentation, "Price and price per seat evolution of net order intakes of A330, A320ceo, A320neo and A350XWB family LCA", Airbus proprietary presentation, 13 February 2013, (Exhibit EU-690) (BCI). The European Union presents the following diagrams: (a) A320neo net order prices from 2010-2012 plotted against Airbus' input costs to produce the A320neo, as reflected in Airbus' price escalation formula, showing that, while Airbus production costs have increased, A320neo prices have **[***]**; and (b) A320ceo net order prices plotted against Airbus' input costs to produce the A320ceo, as reflected in Airbus' price escalation formula, showing that, while Airbus production costs have increased, A320ceo prices have **[***]**.

[3380] The European Union presents seven sales campaigns involving single-aisle LCA which Boeing won, but which the European Union presents as "illustrative" of Boeing's aggressive pricing of the 737 MAX: Southwest Airlines 2011, SilkAir 2012, Aeromexico 2012, United Airlines 2012, GOL 2012, Norwegian Air Shuttle 2012, and American Airlines 2011. (See European Union's first written submission, para. 1808). In support of its significant price suppression claims with respect to the A320ceo, the European Union refers to the Delta Airlines 2011, Fly Dubai 2008, American Airlines 2011, Southwest Airlines 2011, United Airlines 2012, SilkAir 2012, and LionAir 2012 campaigns. (European Union's first written submission, para. 1887). Although the European Union updated the data on which it relies to demonstrate the existence of lost sales of the A320neo and A320ceo in the post-implementation period to include a number of single-aisle sales campaigns which occurred in 2013-2015, it does not indicate that it wishes to also rely on any of these sales campaigns as illustrating Boeing's "aggressive pricing" in relation to its claims of significant price suppression of the A320neo and A320ceo.

[3381] European Union's first written submission, para. 1802; and Airbus proprietary presentation, "Price and price per seat evolution of net order intakes of A330, A320ceo, A320neo and A350XWB family LCA", Airbus proprietary Presentation, 13 February 2013, (Exhibit EU-690) (BCI).

[3382] European Union's first written submission, paras. 1876-1882; and Airbus proprietary presentation, "Price and price per seat evolution of net order intakes of A330, A320ceo, A320neo and A350XWB family LCA", Airbus proprietary Presentation, 13 February 2013, (Exhibit EU-690) (BCI).

over time for the same period, as reflected in Airbus' price escalation formula.[3383] The European Union's position is that, because Airbus' input costs (as reflected in Airbus' price escalation formula) have increased over time, Airbus' LCA prices should have increased to a commensurate degree (and would have increased, absent the U.S. subsidies). In its response to the Panel's third set of questions, the European Union updated the pricing information underpinning its significant price suppression arguments to cover the 2013 and 2014 period.[3384] The European Union considers that this new data indicates that: (a) **[***]**; and (b) **[***]**.[3385]

9.449. The United States argues that the European Union has failed to establish significant price suppression because it does not demonstrate the requisite genuine and substantial causal link between the U.S. subsidies and Airbus' prices, under either a technology causal mechanism or a price causal mechanism.[3386] The United States also considers that the pricing data provided by the European Union is distorted and unreliable because it is aggregated for all models of the A320neo and A320ceo families. In any case, the pricing data fails to show that any impact on A320neo and A320ceo prices arises from the effects of the subsidies on, respectively, 737 MAX and 737NG prices, rather than from competition from single-aisle LCA more generally.[3387] Price trend data for the A320neo shows a **[***]**.[3388] With respect to the A320ceo, whereas 737NG prices **[***]** between 2007 and 2012, A320ceo prices **[***]**.[3389] The United States further notes that the majority of the sales campaigns that the European Union considers to evidence Boeing's "aggressive pricing" involve all-Boeing customers in which Boeing enjoyed an incumbency advantage: "{p}rying these customers away from Boeing necessarily required offering the A320neo on more attractive terms than would be the case where Boeing was not the incumbent."[3390] Moreover, Airbus' significant production rate increases for the A320ceo are an additional reason why A320ceo prices are not higher than they are.[3391]

9.450. We begin our analysis by recalling that "price suppression" refers to a situation where "prices" either are prevented or inhibited from rising (i.e. they do not increase when they otherwise would have) or they do actually increase, but the increase is less than it would otherwise have been.[3392] The Appellate Body has further noted:

> {P}rice suppression is not {a directly observable phenomenon} … price suppression concerns whether prices are less than they would otherwise have been … The identification of price suppression, therefore, presupposes a comparison of an observable factual situation (prices) with a counterfactual situation (what prices would have been) where one has to determine whether, in the absence of the subsidies (or some other controlling phenomenon), prices would have increased or would have increased more than they actually did.[3393]

[3383] European Union's first written submission, paras. 1802 and 1875. The European Union explains that pricing escalation is used by Airbus and by Boeing to reflect increased costs in the same period. An escalation formula is applied to aircraft pricing to reflect changing costs and economic conditions over time. (European Union's first written submission, para. 1802 and fn 3327). See also Panel Report, *US – Large Civil Aircraft (2nd complaint*), para. 7.1685.

[3384] European Union's response to Panel question No. 170, para. 546; "Price Evolution Net Order Intakes", Airbus Presentation, October 2015, (Exhibit EU-1669) (BCI), pp. 3 and 4. The European Union did not, however, update the information concerning Airbus' input costs based on Airbus' price escalation formula, so there is no data on the record to indicate the level of Airbus' input costs for the A320neo and A320ceo in the post-implementation period.

[3385] European Union's response to Panel question No. 170, para. 571.

[3386] United States' first written submission, paras. 1001 and 1071; second written submission, paras. 1233 and 1358; and comments on the European Union's response to Panel question Nos. 166 and 170, paras. 206-209.

[3387] United States' first written submission, paras. 1005-1008 and 1076-1077; second written submission, paras. 1233, 1358, and 1367; comments on the European Union's response to Panel question Nos. 166 and 170, paras. 211-213.

[3388] United States' comments on the European Union's response to Panel question No. 170, para. 223.

[3389] United States' comments on the European Union's response to Panel question No. 170, paras. 221 and 222.

[3390] United States' first written submission, para. 1008; second written submission, para. 1233; and comments on the European Union's response to Panel question Nos. 166 and 170, paras. 214 and 215.

[3391] United States' first written submission, para. 1077; second written submission, paras. 1368 and 1369.

[3392] Appellate Body Report, *US – Upland Cotton*, para. 423.

[3393] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 351.

9.451. A counterfactual analysis is therefore an "inescapable part" of analysing the effect of a subsidy under Article 6.3(c) of the SCM Agreement.[3394] The Panel must compare the observable factual situation of the prices for Airbus' A320neo and A320ceo with the counterfactual situation of what those prices would have been absent the Washington State B&O tax rate reduction.

9.452. In addition, Article 6.3(c) requires that the Panel determine that the effect of the subsidy in question is significant price suppression *in the same market*. As explained in Section 9.2.1, the European Union has argued its serious prejudice claims on the basis of a market delineation that places in distinct product markets existing technology aircraft such as the 737NG and A320ceo, which are less fuel efficient but available for earlier delivery, and new technology aircraft such as the 737 MAX and A320neo, which are more fuel efficient but may not be available for delivery for many years, despite the similarities in seating capacity, range, and MTOW that might otherwise exist between all of these aircraft. For reasons we explain in paragraphs 9.35 through 9.39, we disagree with the European Union's proposed market delineation and instead treat the existing technology A320ceo and 737NG and the new technology A320neo and 737 MAX as competing in the same product market for narrow-body, single-aisle aircraft. The practical implication of our delineation of one narrow-body, single-aisle product market is that we should take into account any evidence that prices for the A320ceo and 737NG (and not just the 737 MAX) exercised constraints on A320neo pricing, and prices for the A320neo and 737 MAX (and not just the 737NG) exercised constraints on A320ceo pricing.[3395]

9.453. Airbus launched the A320neo family LCA in December 2010, with first deliveries scheduled for October 2015. Some eight months later, in August 2011, Boeing launched the 737 MAX family, with first deliveries scheduled for 2017.[3396] There is evidence that Airbus priced the A320neo at a premium of USD 7-8 million over the A320ceo, which represents one half of the NPV of the 15% fuel saving that the A320neo was expected to deliver over the A320ceo and 737NG.[3397] An Airbus presentation in early 2013 declared that the A320neo had 35% more orders than the 737 MAX in the first year after its launch.[3398] As can be seen from the order data set forth in Table 19 below, Airbus gained significant market share in the single-aisle market in 2011 following the A320neo launch. This declined following Boeing's launch of the 737 MAX in the latter part of 2011. Airbus' share of the single-aisle market has increased since so that it was at 57% by 2014.

Table 19: Airbus & Boeing Single-Aisle Orders and Market Share (2007-2014)[3399]

	2007	2008	2009	2010	2011	2012	2013	2014
Airbus A320ceo/neo orders	662	436	228	450	1526	756	1303	1597
Boeing 737NG/MAX orders	707	447	177	416	579	1165	1197	1205
Grand Total	1369	883	405	866	2105	1921	2500	2802
Airbus market share	48%	49%	56%	52%	72%	39%	52%	57%
Boeing market share	52%	51%	44%	48%	28%	61%	48%	43%

9.454. The LCA markets pose particular challenges for the analysis of claims of price suppression, owing to the difficulty of identifying and measuring a "price" for LCA. As discussed in Section 9.2.2 of this Report, the price at which a particular LCA is sold can vary significantly depending on the customer and the campaign. Actual negotiated LCA prices are commercially sensitive and highly confidential. Factors such as performance guarantees, credit terms, buying back of old aircraft and other aspects of an overall transaction also make it difficult to compare in a meaningful way the prices of the same aircraft sold to different customers (or even the same customers), at different

[3394] Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 351.
[3395] The European Union appears to agree with this, noting that to the extent that any price suppression for the A320neo results from the 737NG, or for the A320ceo from the 737 MAX, these would be "non-subsidy" factors based on the structure of the European Union's arguments. (European Union's response to Panel question No. 170, para. 568).
[3396] Mourey Statement, (Exhibit EU-34) (BCI), para. 81.
[3397] S. Hamilton, "A320 NEO to have $7-8 million Price Premium", *Flight International*, 23 August 2010, (Exhibit USA-361).
[3398] F. Bregier, "Airbus Results 2012, Outlook 2013", Presentation at the Annual Press Conference, 17 January 2013, (Exhibit USA-296).
[3399] Ascend data base, Orders, data request as of 29 September 2015, (Exhibit EU-1658).

points in time.[3400] Prices for aircraft will differ for a number of reasons, including the size of the order, incumbency and "product availability issues".[3401]

9.455. In the original proceeding, the panel found that the aeronautics R&D subsidies enabled Boeing to launch the technologically advanced 787 earlier than would have otherwise been possible, and that this required Airbus to lower its A330 prices in order to compete. The "economic logic" of the impact of the aeronautics R&D subsidies, through the accelerated launch of the 787, on prices of the A330, was consistent with the trend of decreases in indexed A330 price data in the original reference period, coupled with overall trends demonstrating erosion of Airbus' market share as compared with the period prior to the launch of the 787.[3402] The panel reasoned that, absent the launch of the 787 in 2004, the A330 would have continued its pre-2004 dominant position in the 200-300 seat LCA product market for a longer period of time, and for that additional period, would have been able to command higher prices in general.[3403]

9.456. In Section 9.4.2, we reject the European Union's arguments concerning the alleged spill-over effects and new technology effects of the aeronautics R&D subsidies in relation to the 737 MAX in the post-implementation period and thus the argument that the aeronautics R&D subsidies are causally related to any of the forms of serious prejudice alleged in respect of the 737 MAX in the post-implementation period. Therefore, unlike the situation involving the 787 and A330 in the original proceeding, there is no event or factor such as the accelerated launch of a technologically advanced aircraft that is the effect of the U.S. subsidies that can clearly and rationally be expected to have a generally suppressing effect on prices of the A320neo or A320ceo.

9.457. Another difference between the significant price suppression claims of the European Communities in the original proceeding, and those made in this proceeding is that in the original proceeding, the European Communities supported its price suppression claims with evidence from sales campaigns which *Airbus* had won, at the cost of significantly reducing its A330 and Original A350 prices to offset the technological advantages of the 787.[3404] By contrast, evidence on which the European Union relies to support its significant price suppression claims in this proceeding comprises the sales campaigns that *Boeing* won; i.e. campaigns that Airbus *lost* and for which there is necessarily no Airbus LCA "price" that was suppressed. The European Union argues that these campaigns are still evidence of price suppression because they are "illustrative" of Boeing's aggressive pricing which, according to the European Union, suppresses Airbus' prices more generally.

[3400] See paras. 9.20 and 9.21 above. The global LCA market can be contrasted with international commodity markets, such as market at issue in *US – Upland Cotton*. In that case, there were discernible "world prices" for upland cotton that allowed for the use of modelling exercises to predict such prices in a counterfactual scenario. See Appellate Body Report, *US – Upland Cotton*, para. 415: "{t}he Panel found that 'the A-index can be taken to reflect a world price in the world market for upland cotton that is sufficient to form the basis for our analysis as to whether there is price suppression". See also Appellate Body Report, *US – Upland Cotton (Article 21.5 – Brazil)*, para. 357: "because the examination of price suppression necessarily involves an analysis of what would have been the case in the absence of an intervening event, modelling exercises are likely to be an important analytical tool that a panel should scrutinize".

[3401] European Union's second written submission, paras. 1493-1497; response to Panel question No. 166, paras. 147-151; and comments on the United States' response to Panel question No. 171, para. 164.

[3402] See Appellate Body Report, *US – Large Civil Aircraft (2nd complaint*), paras. 1106-1113; and Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1781-7.1785.

[3403] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1785-7.1797. The original panel's findings of price suppression in the 100-200 and 300-400 seat markets, which were not based on an event such as the launch of a competing, technologically advanced aircraft, were overturned by the Appellate Body on the basis that they were insufficiently supported by evidence on the record. The original panel in *EC and certain member States – Large Civil Aircraft*, which also considered a price suppression claim in the context of the LCA market, found that while Boeing's LCA prices were being suppressed in some way, the United States had failed to establish that this phenomenon was caused by the subsidies. This finding was made on the basis of a "bifurcated" analysis, in which the panel first addressed whether the complainant had established the existence of the market phenomena identified in Article 6.3, and then separately addressed whether the complainant had established whether the price suppression phenomenon was caused by the subsidies. This approach is in contrast to a "unitary" approach, which involves a "single, integrated analysis of both the market phenomena and the issue of whether they have been caused by the subsidies at issue". The bifurcated evaluation of the existence of Article 6.3 market phenomena has been criticised on the basis that it "may be difficult to ascertain the existence of some of the market phenomena in Article 6.3 without considering the effect of the subsidy at issue". (See Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1107).

[3404] Panel Report, *US – Large Civil Aircraft (2nd complaint)*, para. 7.1792.

9.458. We examine the sales campaigns that occurred between 2007-2012, which the European Union alleges evidence Boeing's "aggressive pricing", in the context of our evaluation of whether the Washington State B&O tax rate reduction affected Boeing's 737 MAX and 737NG prices. Of those sales campaigns, only two (the Fly Dubai 2008 and Delta 2011 campaigns, both involving the 737NG and A320ceo) are campaigns where the Panel finds that: (a) the outcomes were price-sensitive, in the sense that Boeing was under particular pressure to reduce its prices in order to secure sales and there were no other non-price factors that explain Boeing's success in obtaining the sale; and (b) the Washington State B&O tax rate reduction was causally linked to the outcome of the sale.

9.459. This means that there are many other campaigns in the single-aisle market which we have either found were not price-sensitive in the sense described above, or where the European Union itself does not allege that the campaigns were highly competitive. For example, in updating its lost sales and displacement evidence to include the most recent data and developments since 2013[3405], the European Union explains that it does *not* challenge campaigns such as an order by a group of Chinese airlines for 300 Boeing aircraft, valued at approximately USD 38 billion[3406], Ryanair's orders in 2013 for 175 737-800s (valued at USD 15.6 billion) or in 2014 for 100 737 MAX aircraft (valued at USD 11 billion).[3407] Nor does it challenge Turkish Airlines' 2013 order for 50 737MAX and 20 737-800s (valued at USD 6.9 billion).[3408] As for sales campaigns involving leasing company customers, the European Union notes that it does not challenge orders such as AerCap's 2015 order for 100 737 MAX (valued at USD 10.7 billion), SMBC Aviation Capital's order for 80 737 MAX (valued at USD 8.5 billion) or BOC Aviation's 2014 orders for 50 737 MAX and 30 737-800s (valued at USD 8.8 billion).[3409] The European Union adds that there are "many further small and large Boeing orders that remain unchallenged in these proceedings, demonstrating that the European Union's challenge is limited to a relatively small portion of Boeing's overall sales".[3410]

9.460. The European Union acknowledges that some sales campaigns are price-sensitive and some are not. It argues that Boeing uses the subsidies in the price-sensitive campaigns.[3411] We have found that this is the case in relation to a limited number of single-aisle sales campaigns that Boeing won. In this context, the fact that Boeing used subsidies to win a comparatively small number of price-sensitive campaigns does not illustrate that Boeing similarly used the subsidies in *other* single-aisle sales campaigns that *Airbus won* at prices that were consequently suppressed due to the effects of the subsidies. Had the European Union submitted evidence from sales campaigns that Airbus won, which were price-sensitive in the above sense, or had there been additional evidence that Airbus' offer prices in the sales campaigns that it lost were transmitted to affect the prices Airbus achieved in sales campaigns that it won, there would have been a basis to consider a causal link between the subsidies enabling Boeing's lower prices in price-sensitive sales campaigns, and suppression of Airbus' prices. As it stands, however, there is insufficient evidence to support the proposition that, but for the Washington State B&O tax rate reduction benefiting the 737 MAX and 737NG, A320neo and A320ceo prices obtained by *Airbus* in sales campaigns not before us in evidence, which Airbus won, would be higher than they are.

9.461. The European Union presents evidence of Airbus' cost escalation to show what Airbus' prices should have been absent the U.S. subsidies.[3412] However, in markets in which a producer can enjoy a temporary monopoly position or greater than normal profits for certain LCA models at certain points in time, it is not apparent to us why LCA prices would necessarily be expected to track escalations in the input costs of LCA manufacturers. In any case, the

[3405] European Union's response to Panel question No. 169, para. 174.

[3406] Boeing Press Release, "Boeing Hosts China President Xi Jinping, Announces Airplane Sale, Expanded Collaboration with China's Aviation Industry", 23 September 2015, (Exhibit EU-1441).

[3407] Boeing Press Release, "Boeing, Ryanair Finalize Order for 175 Next-Generation 737s", 19 June 2013, (Exhibit EU-1653); and Boeing Press Release, "Boeing, Ryanair Finalize Order for 100 737 MAX 200", 1 December 2014, (Exhibit EU-1442).

[3408] Boeing Press Release, "Boeing, Turkish Airlines Finalize Order for 50 737 MAXs, 20 Next-Generation 737s", 14 May 2013, (Exhibit EU-1654).

[3409] Boeing Press Release, "Boeing, AerCap Announce order for 100 737 MAX 8s", 16 June 2015, (Exhibit EU-1655); Boeing Press Release, "Boeing, SMBC Aviation Capital Announces Order for 80 737 MAXs", 10 November 2014, (Exhibit EU-1656); and Boeing Press Release, "Boeing, BOC Aviation Announce Order for 82 Airplanes", 25 August 2014, (Exhibit EU-1657).

[3410] European Union's response to Panel question No. 169, para. 174.

[3411] See paras. 9.52 and 9.236 above.

[3412] See fn 2723 above for an explanation of the concept of "escalation" in the context of the LCA industry.

European Union did not update the information concerning Airbus' input costs so there is no data on the record to indicate the level of Airbus' input costs for the A320neo and A320ceo in the post-implementation period.[3413]

9.462. Moreover, when Boeing indexed average order prices for the 737 MAX are graphed against Airbus A320neo and A320ceo indexed average order prices, there is a correlation between price movements of the A320neo and A320ceo, but not between those two aircraft and the 737 MAX.[3414] This suggests to us the possibility of a relationship between A320neo and A320ceo prices. However, **[***]**. Without additional information to explain **[***]**, all that we are able to deduce from this evidence is that the relationship between 737 MAX prices and prices of the A320neo and A320ceo is not apparent, and there is nothing to indicate that 737 MAX prices are suppressing A320neo prices.

9.463. More generally, the parties disagree as to the validity of price trend data presented on an LCA-family, rather than a model-specific, basis in relation to the significant price suppression claims in respect of the A320neo and A320ceo, as well as the A350XWB and A330. The United States argues that aggregated data masks the different pricing trends that may occur across differently-sized (and priced) LCA models.[3415] In its second written submission, the European Union acknowledges the limitations of aggregated family data, but argues: (a) that it is nonetheless more useful, since model-specific data is more likely to contain gaps and other flaws related to the small and uneven number of sales of individual size variations per year[3416]; and (b) the aggregated *per-seat* price trend data submitted by the European Union corrects for these limitations, since it evens out the changing mix of size variations within each LCA family.[3417] To the extent that the United States has identified trends in the pricing relationship between Boeing and Airbus LCA that contradict the European Union's argument, this is only because it is comparing Airbus and Boeing aggregated *net* price trends, rather than aggregated *per-seat* price trends.[3418]

9.464. However, in its December 2015 comments on the United States' responses to the Panel's third set of questions, the European Union argues that while per-seat price trend data is a "more meaningful proxy" for trends in aircraft prices, it too is flawed and cannot support the United States' argument that price trend data undermines the European Union's position on price suppression. The European Union refers to "limitations inherent in aggregated annual pricing data for families or individual LCA, reflecting a small number of heterogeneous sales transactions" and concludes that these limitations undermine the usefulness of the data as a true indicator of market realities in a given year, and of competitive constraints between products that the parties agree are in close competition.[3419] At the same time, however, the European Union appears to maintain its previous position that disaggregated, model-specific data is flawed, and disagrees on that basis with the United States' arguments that a comparison of disaggregated Boeing and Airbus model-specific price trend data also contradicts the European Union's price suppression argument.[3420] The European Union thus appears to repudiate not only the United States' data as providing a reliable basis for drawing conclusions about market conditions, but also its own.

[3413] This is also the case with respect to the European Union's significant price suppression claims with respect to the A350XWB and A330. To the extent that the European Union relies on an alleged absence of correlation between trends in A350XWB and A330 family prices and Airbus price escalation, the European Union does not establish this for the post-implementation period.

[3414] United States' comments on the European Union's response to Panel question Nos. 166 and 170, para. 223; Indexed Model-Specific and Family-Wide Average Pricing for 787, 777X, 737 MAX, and 737NG (2001-2014), (Exhibit USA-599) (BCI), p. 11; and "Price Evolution Net Order Intakes", Airbus Presentation, October 2015, (Exhibit EU-1669) (BCI), pp. 3 and 4.

[3415] United States' second written submission, paras. 946-949.

[3416] European Union's second written submission, paras. 1485-1489.

[3417] European Union's second written submission, para. 1488. The European Union also notes that, despite its criticisms of aggregated price trend data, the United States has itself submitted aggregated pricing data for the relevant Boeing LCA families and, unlike the European Union, has not submitted per-seat price trend data. (European Union's second written submission, paras. 1492-1497).

[3418] In its second written submission, however, the United States submits aggregated per-seat price trend data, and maintains that this too contradicts the European Union's price suppression arguments.

[3419] European Union's comments on the United States' response to Panel question No. 170, paras. 163 and 170.

[3420] European Union's comments on the United States' response to Panel question No. 171, paras. 163-171.

9.465. Finally, we provide our views on a non-attribution factor raised by the United States that we consider the European Union has failed to adequately address. It concerns the impact of competition from existing technology single-aisle LCA (i.e. the A320ceo and 737NG) on the A320neo and, conversely, the impact of new technology single-aisle LCA (i.e. the A320neo and the 737 MAX) on the prices of the A320ceo. As already noted, we treat the existing technology A320ceo and 737NG and the new technology A320neo and 737 MAX as competing in the same product market for narrow-body, single-aisle aircraft. Indeed, of the sales campaigns involving single-aisle LCA between 2007-2015 that the European Union alleges are significant lost sales to Airbus, a not insignificant number involved both existing technology and new technology LCA. It is clear to us that, especially where customers are contemplating ordering a mix of existing technology and new technology aircraft of the same size, range and MTOW, the prices of existing technology single-aisle aircraft constrain those of new technology single-aisle aircraft and vice-versa.[3421] The European Union has failed to address this factor in its arguments owing to its overly-narrow definitions of the relevant product markets.

9.466. In our view, for the reasons stated above, there is insufficient evidence to demonstrate that, but for the Washington State B&O tax rate reduction benefiting the 737 MAX and 737NG, prices of the A320neo and A320ceo, respectively, in the post-implementation period, would be higher.[3422]

9.467. **We find that the European Union has failed to establish that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice to its interests in the form of significant price suppression (including threat thereof) in respect of the A320neo or the A320ceo in the post-implementation period.**

9.4.3.2 The state and local cash flow subsidies

9.468. We next address the effects of the state and local cash flow subsidies on Boeing's prices of the 737 MAX and 737NG, and whether any such effects also contribute to the effects of the Washington State B&O tax rate reduction as a cause of serious prejudice in respect of the A320neo and A320ceo in the post-implementation period.[3423] We are mindful that, where a category of subsidies has already been found to be a *genuine and substantial* cause of serious prejudice, a panel may ascertain whether any other category of subsidies is a *genuine* cause of serious prejudice, and if so, whether the effects of the latter group of subsidies complement and supplement those of the former, and thereby also constitute a cause of serious prejudice.[3424]

9.469. Because the Panel finds that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice to Airbus narrow-body, single-aisle LCA in the post-implementation period, we will evaluate the effects of the state and local cash flow subsidies by asking: (a) whether these subsidies have a *genuine* causal connection with the relevant market effects on Airbus' narrow-body, single-aisle aircraft; and if so, (b) whether the effects of these subsidies should be *cumulated with* the effects of the Washington State B&O tax rate reduction already found for the narrow-body, single-aisle market, and found to also contribute to the relevant serious prejudice phenomena. However, if the Panel is not satisfied that the state and local cash flow subsidies have a *genuine* causal connection with the relevant market effects on

[3421] A 2013 article indicated that there A320ceos and 737NGs were being "massively discounted" owing to customer preference for the more fuel-efficient versions of the A320neo and 737 MAX that were then in development. ("Le vrai prix des avions d'Airbus et de Boeing", *Challenges*, 13 June 2013, (Exhibit EU-1709)).

[3422] The European Union also argues that, in light of the continuation of the U.S. subsidies and the unchanged conditions of competition in the relevant markets, there is a threat of further significant price suppression. (European Union's first written submission, paras. 1821 and 1891). We find, however, that the existing U.S. subsidies and conditions of competition do not give rise to significant price suppression. The European Union's threat arguments do not provide a basis for any change in circumstances that would warrant the conclusion that price suppression that does not currently exist is nevertheless clearly foreseeable and imminent.

[3423] See para. 9.253 above for a summary of the subsidies included within this category of post-2006 subsidies.

[3424] Appellate Body Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 1287 and 1288.

Airbus' narrow-body, single-aisle, aircraft, there is no basis for finding that they contribute to the relevant serious prejudice phenomena.[3425]

9.470. As previously explained, the European Union argues that the state and local cash flow subsidies generally operate to reduce costs that Boeing would otherwise have incurred with its own resources, and thereby liberate funds that Boeing can and does apply to lower LCA pricing in certain highly-competitive LCA sales campaigns. The European Union considers that Boeing is able, and has strong incentives, to use the additional cash flow represented by the state and local cash flow subsidies to lower prices for its LCA in competitive sales campaigns without reducing its profits.[3426] In Section 9.3.2.2.2, in evaluating the effects of the state and local cash flow subsidies benefiting the 787 and 777X on the A350XWB, we note that the European Union relies on the Appellate Body's finding with respect to the tax abatements related to the City of Wichita IRBs to support the argument that, in light of the incentives that Boeing has to reduce its prices in strategic LCA sales campaigns, and the subsidy magnitudes, untied subsidies such as the Washington State tax subsidies, which have a close connection, or "link" to the production of the relevant Boeing LCA, can be considered to have a *genuine* causal link to Boeing's pricing of those aircraft.[3427] For the reasons set forth in paragraphs 9.272 through 9.275 of this Report, we do not consider that the Appellate Body's finding with respect to the tax abatements related to the City of Wichita IRBs supports the European Union's argument that the state and local cash flow subsidies impact Boeing's LCA prices.

9.471. We therefore consider that the European Union has failed to demonstrate that the state and local cash flow subsidies, by virtue of operating to increase Boeing's cash flow, would be used by Boeing to lower the prices of the 737 MAX and 737NG. There is no evidence before us from which we could conclude that, absent the state and local cash flow subsidies, Boeing would have been financially unable to engage in exactly the same pricing behaviour in which it engaged.[3428] There is accordingly no basis for finding that the state and local cash flow subsidies affect Boeing's pricing behaviour, even in so-called price-sensitive sales campaigns and are thus a genuine cause of serious prejudice in relation to Airbus single-aisle LCA. Accordingly, there is no basis for cumulating the effects of these subsidies with those of the Washington State B&O tax rate reduction in the single-aisle market.

9.472. **The Panel finds that the European Union has failed to establish that the state and local cash flow subsidies are a genuine cause of any of the forms of serious prejudice alleged in respect of the A320neo or A320ceo in the post-implementation period through a price causal mechanism.**

9.4.3.3 The post-2006 aeronautics R&D subsidies

9.473. The European Union argues that the post-2006 aeronautics R&D subsidies[3429] operate to lower Boeing's pricing of current LCA, such as the 737 MAX and 737NG, because they provide Boeing with access to and use of research results and inputs that enable it to "continue maturing" technologies for application to future generations of LCA without having to pay the U.S. Government for such access and use.[3430]

[3425] In this latter situation, it would also logically follow that the state and local cash flow subsidies could not, on their own, constitute a *genuine and substantial* cause of adverse effects on Airbus' narrow-body, single-aisle aircraft.

[3426] European Union's first written submission, para. 1156; second written submission, para. 1080. See also paras. 9.255 and 9.256 above.

[3427] And correspondingly, that "untied" subsidies which have a close connection or "link" to the production of other Boeing LCA at issue in this proceeding (i.e. the 787 and 777X), can also be considered to have a *genuine* causal link to Boeing's pricing of those aircraft.

[3428] We reiterate that the European Union does not attempt to demonstrate that Boeing's LCA pricing would not be economically feasible absent the receipt of the state and local cash flow subsidies, which represents a significant departure from the European Communities' case in the original proceeding, where it sought to demonstrate that Boeing's pricing and product development decisions would have been "unsustainable and financially irrational" absent Boeing's alleged receipt of the subsidies at issue. (See Panel Report, *US – Large Civil Aircraft (2nd complaint)*, paras. 7.1621, 7.1830, and 7.1831, and fn 3787).

[3429] Other than the non-flight testing portion of the FAA aeronautics R&D subsidy above, fn 3149.

[3430] European Union's response to Panel question No. 43, para. 280.

9.474. As previously explained in Section 9.3.2.2.3 in evaluating the effects of the post-2006 aeronautics R&D subsidies benefiting the 787 and 777X on the A350XWB, the European Union considers that the post-2006 aeronautics R&D subsidies operate in a manner that is "identical to the remaining state and local subsidies".[3431] The Panel has already explained that the European Union's argument that the post-2006 aeronautics R&D subsidies enabled Boeing to lower its LCA prices would ultimately fail for the reasons that this same argument with respect to the effects of the state and local cash flow subsidies on Boeing's prices also fails.[3432]

9.475. We therefore conclude that the European Union has failed to demonstrate that the post-2006 aeronautics R&D subsidies affected Boeing's pricing behaviour with respect to the 737 MAX and 737NG. Having failed to demonstrate that these subsidies affected Boeing's pricing behaviour, there is no basis on which the subsidies can be demonstrated to have caused the various forms of serious prejudice alleged with respect to the A320neo and A320ceo.

9.476. **The Panel finds that the European Union has failed to establish that the post-2006 aeronautics R&D subsidies are a genuine cause of any of the forms of serious prejudice alleged in respect of the A320neo or A320ceo in the post-implementation period through a price causal mechanism.**

9.4.3.4 Summary of conclusions on whether the post-2006 subsidies benefiting the 737 MAX and 737NG cause serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3, in respect of the A320neo and A320ceo in the post-implementation period, through a price causal mechanism

9.4.3.4.1 Washington State B&O tax rate reduction

9.477. The Panel has concluded that the *Washington State B&O tax rate reduction*, which is the only tied tax subsidy alleged to benefit the 737 MAX and 737NG, affected Boeing's pricing behaviour in five price-sensitive LCA sales campaigns in the 2007-2012 period: Fly Dubai 2008, Delta Airlines 2011, Icelandair 2013, Air Canada 2013, and Fly Dubai 2014.[3433]

Significant lost sales

9.478. Three of the five sales campaigns that the Panel finds are price-sensitive involved orders that occurred in the post-implementation period: Fly Dubai 2014, Air Canada 2013 and Icelandair 2013. The Panel finds that the Washington State B&O tax rate reduction contributed in a *genuine and substantial* way to determining the outcomes of these campaigns. Accordingly, the effects of the Washington State B&O tax rate reduction are lost sales of the A320neo and A320ceo in the Fly Dubai 2014, Air Canada 2013 and Icelandair 2013 sales campaigns. Each of these lost sales is "significant", within the meaning of Article 6.3(c) of the SCM Agreement.

9.479. Therefore, the Panel finds that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice in the form of significant lost sales of A320neo and A320ceo families of LCA in the post-implementation period, in respect of the sales campaigns for Fly Dubai in 2014, Air Canada in 2013, and Icelandair in 2013.

Impedance, displacement (and threats thereof)

9.480. With the exceptions set forth in the next paragraph, the Panel is not satisfied that the European Union has adequately substantiated its claims of impedance, displacement, or threats thereof, of imports of Airbus single-aisle aircraft to the United States or of exports of Airbus single-aisle aircraft to various third country markets. The Panel's previous finding that the Washington State B&O tax rate reduction is a genuine and substantial cause of significant lost sales of Airbus

[3431] European Union's first written submission, para. 1187. See also European Union's comments on United States' response to panel question No. 158. Japan and Korea also advance arguments supporting the analysis of R&D subsidies through a price causal mechanism. See paras. 9.285 and 9.286 above.

[3432] See paras. 9.285 and 9.286 above.

[3433] Following the approach of the Appellate Body to determining the impact of the tied tax subsidies on Boeing's pricing behaviour in the original proceeding, LCA sales campaigns are considered price-sensitive where it is demonstrated that Boeing was under particular pressure to reduce its prices in order to secure sales and there were no other non-price factors that explain Boeing's success in obtaining the sale.

single-aisle aircraft in respect of certain price-sensitive LCA sales campaigns does not, on its own, demonstrate impedance, displacement (or threats thereof) of Airbus single-aisle imports or exports to the geographic markets associated with those customers. Moreover, there would be little to be gained by the Panel making a finding of impedance of imports or exports in relation solely to lost sales that are already the subject of a finding of significant lost sales. The Panel additionally rejects the proposition that in certain so-called "large volume" markets, it is reasonable to expect that Boeing and Airbus, as duopolists, would have approximately 50% market share each, so that significant departures from this allocation serve as additional evidence that Airbus' single-aisle imports or exports are being impeded.

9.481. The threat of impeded imports of A320ceos into the United States market that arises from the Delta Airlines 2011 lost sale, unlike the lost sale itself, arises in the post-implementation period. In these circumstances, we consider it appropriate to make a finding in relation to the threat of impedance of A320ceo imports to the United States market arising from this lost sale. Additionally, the market share data for the third-country market of the United Arab Emirates shows a clear trend in which Boeing's share of single-aisle deliveries grows at the expense of Airbus' from 2017 to 2022, reversing a pattern in which Airbus had previously mostly maintained a majority of deliveries from 2007 to 2016. Considered in combination with the Panel's findings that the Fly Dubai 2008 and 2014 sales campaigns were significant lost sales which are the effects of the Washington State B&O tax rate reduction, we conclude that the Washington State B&O tax rate reduction is also a genuine and substantial cause of a threat of impedance of Airbus' exports of single-aisle LCA to the United Arab Emirates market in the post-implementation period. We therefore find that the effects of the Washington State B&O tax rate reduction are a threat of impedance of imports of the A320ceo into the United States market and of exports of Airbus single-aisle aircraft from the United Arab Emirates market.

9.482. Therefore, the Panel finds that the Washington State B&O tax rate reduction is a genuine and substantial cause of serious prejudice to the European Union's interests, in the form of a threat of impedance of imports of the A320ceo into the United States market, and of exports of Airbus single-aisle aircraft to the United Arab Emirates market, in the post-implementation period.

Significant price suppression

9.483. The European Union has failed to demonstrate that, but for the Washington State B&O tax rate reduction, prices for the A320neo and A320ceo would be higher in the post-implementation period than they actually are. The Panel is not persuaded that the evidence that the European Union has provided regarding the divergences in movements between Airbus' single-aisle prices and its input costs (represented by Airbus' price escalation), which were not updated for the post-implementation period, or regarding the LCA sales campaigns that Boeing won, demonstrates that Airbus' single-aisle LCA prices are lower than they would otherwise be, owing to the Washington State B&O tax rate reduction. Moreover, the Panel considers that the European Union has itself cast doubt upon the reliability of the data it has presented purporting to demonstrate trends in Airbus aircraft prices. Finally, the European Union has failed to adequately address a non-attribution factor that the Panel considers could plausibly have affected prices of the A320neo and A320ceo. Therefore, the European Union has failed to establish that the Washington State B&O tax rate reduction is a genuine and substantial cause of significant price suppression of the A320neo or A320ceo, or threat thereof, in the post-implementation period, through a price causal mechanism.

9.4.3.4.2 State and local cash flow subsidies

9.484. The European Union has failed to demonstrate that the state and local cash flow subsidies, by virtue of operating to increase Boeing's overall cash flow, are a genuine cause of lower prices of the 737 MAX and 737NG, absent any showing that Boeing's LCA pricing would not be economically feasible absent the receipt of the state and local cash flow subsidies. Accordingly, there is no basis for finding that the state and local cash flow subsidies affect Boeing's pricing behaviour, even in so-called price-sensitive sales campaigns. Given that the European Union has failed to demonstrate that the state and local cash flow subsidies affect Boeing's pricing behaviour, there is no basis for cumulating the effects of these subsidies with those of the Washington State B&O tax rate reduction in the single-aisle market.

9.4.3.4.3 Post-2006 aeronautics R&D subsidies

9.485. The European Union has failed to demonstrate that the post-2006 aeronautics R&D subsidies, assuming the Panel were to accept that they operate in the same manner as the state and local cash flow subsidies, are a genuine cause of lower prices of the 737 MAX and 737NG, absent any showing that Boeing's LCA pricing would not be economically feasible absent the receipt of the state and local cash flow subsidies (and assuming for purposes of argument that the post-2006 aeronautics R&D did operate in the same manner as the state and local cash flow subsidies). Given that the European Union has failed to demonstrate that the post-2006 aeronautics R&D subsidies affect Boeing's pricing behaviour, there is no basis for cumulating the effects of these subsidies with those of the Washington State B&O tax rate reduction in the single-aisle market.

9.4.4 Summary of findings on whether subsidies benefiting the 737 MAX and 737NG cause serious prejudice to the interests of the European Union in respect of the A320neo and A320ceo in the post-implementation period

9.486. The Panel finds as follows:

a. The European Union has failed to establish that the pre-2007 aeronautics R&D subsidies and certain post-2006 aeronautics R&D subsidies are a genuine and substantial cause of any of the forms of serious prejudice alleged with respect to the A320neo in the post-implementation period, through a technology causal mechanism.

b. The Washington State B&O tax rate reduction is a *genuine and substantial* cause of serious prejudice in the form of:

   i. significant lost sales of A320neo and A320ceo families of LCA in the post-implementation period, in respect of the sales campaigns for Fly Dubai 2014, Air Canada 2013, and Icelandair 2013; and

   ii. a threat of impedance of imports of the A320ceo to the United States market, and of Airbus single-aisle exports to the United Arab Emirates market, in each case in the post-implementation period.

c. The European Union has failed to establish that the Washington State B&O tax rate reduction is a *genuine and substantial* cause of serious prejudice in the form of significant price suppression of the A320neo or A320ceo, or threat thereof, in the post-implementation period, through a price causal mechanism.

d. The European Union has failed to establish that the effects of the state and local cash flow subsidies, or of the post-2006 aeronautics R&D subsidies, are a *genuine* cause of significant lost sales of the A320neo or A320ceo, impedance or displacement of Airbus single-aisle LCA imports to the United States or of exports to third countries, or significant price suppression with respect to the A320neo or A320ceo, or threats of any of the foregoing, in the post-implementation period, through a price causal mechanism.

9.5 Overall conclusion as to whether the subsidies benefiting the 787 and 777X cause serious prejudice to the interests of the European Union in respect of the A350XWB and A330 in the post-implementation period, and whether the subsidies benefiting the 737 MAX and 737NG cause serious prejudice to the interests of the European Union in respect of the A320neo and A320ceo in the post-implementation period

9.487. The Panel concludes from its analysis in Sections 9.3 and 9.4 that:

a. The European Union has failed to establish that the subsidies granted or maintained by the United States after the end of the implementation period and benefiting the 787 and 777X; namely, the pre-2007 aeronautics R&D subsidies, the tied tax subsidies, the state and local cash flow subsidies, and the post-2006 aeronautics R&D subsidies, cause serious prejudice to the interests of the European Union, within the meaning of

Article 5(c) and 6.3 of the SCM Agreement in respect of the A350XWB and A330, in the post-implementation period.

b. The European Union has established that the Washington State B&O tax rate reduction granted or maintained by the United States after the end of the implementation period and benefiting the 737 MAX and 737NG, causes serious prejudice to the interests of the European Union, within the meaning of Articles 5(c) and 6.3 of the SCM Agreement, in the form of: (i) significant lost sales of the A320neo and A320ceo families in the post-implementation period in respect of the sales campaigns for Fly Dubai 2014, Air Canada 2013 and Icelandair 2013; and (ii) a threat of impedance of imports of the A320ceo to the United States market and of exports of Airbus single-aisle aircraft to the United Arab Emirates. In this respect, the United States has failed to take appropriate steps to remove the adverse effects, within the meaning of Article 7.8 of the SCM Agreement, and has failed to comply with the DSB recommendations and rulings in the original proceeding in this dispute.

c. The European Union has failed to establish that the pre-2007 aeronautics R&D subsidies, the state and local cash flow subsidies and the post-2006 aeronautics R&D subsidies cause serious prejudice to the interests of the European Union, within the meaning of Article 5(c) and 6.3 of the SCM Agreement, in respect of the A320neo and A320ceo, in the post-implementation period.

10 WHETHER THE UNITED STATES GRANTS OR MAINTAINS SUBSIDIES INCONSISTENT WITH ARTICLES 3.1(A) AND (B) AND 3.2 OF THE SCM AGREEMENT AND ARTICLE III:4 OF THE GATT 1994

10.1 Introduction

10.1. In this Section of the Report, the Panel evaluates the European Union's claims that after the end of the implementation period the United States grants or maintains subsidies that are inconsistent with Articles 3.1(a) and (b) and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994.[3434]

10.2. We recall that in Section 7 of this Report we make rulings that these claims are within the Panel's *terms of reference*, but that they are within the *scope of this proceeding* only with respect to certain of the measures challenged by the European Union. As a result of our ruling regarding the measures with respect to which these claims are within the scope of this proceeding, the European Union may validly make claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III:4 of the GATT 1994 in respect of the South Carolina measures that are otherwise within the Panel's terms of reference, the FAA aeronautics R&D measure, and the post-2006 NASA and DOD aeronautics R&D measures. The European Union may also validly make claims under Articles 3.1(a) and 3.2 of the SCM Agreement in respect of the FSC/ETI measures.[3435]

10.2 Whether the United States grants or maintains subsidies prohibited by Articles 3.1(a) and 3.2 of the SCM Agreement

10.2.1 Main arguments of the parties and third parties

10.3. The European Union claims that "{t}he United States is granting or maintaining subsidies contingent/conditioned in law or in fact upon actual or anticipated export, which are thus prohibited by Articles 3.1(a) and 3.2, and footnote 4, of the SCM Agreement".[3436] The

[3434] While paragraph 32 of the European Union's panel request alleges that the measures in items I.A through I.G are inconsistent with Articles III:1, III:4, and III:5 of the GATT 1994, in its first and second written submissions, the European Union's claims in relation to Article III of the GATT 1994 are limited to alleged inconsistency with Article III:4 of the GATT 1994. (See European Union's first written submission, paras. 777-788; and second written submission, paras. 851-864). The European Union therefore appears not to pursue its other claims under Article III of the GATT 1994.

[3435] See para. 7.438 above.

[3436] European Union's first written submission, para. 737.

European Union submits that: (a) the FSC/ETI measures[3437] and the South Carolina income tax apportionment method provided for in the Income Allocation and Apportionment Agreement entered into between South Carolina and Boeing as of 1 January 2012[3438] are subsidies that are "contingent/conditioned *in law* upon export"[3439]; and (b) all measures at issue in this proceeding are subsidies that are "contingent/conditioned *in fact* upon export".[3440]

10.4. The European Union argues that it has demonstrated in this proceeding that the FSC/ETI measures continue to provide subsidies to Boeing and that the United States has therefore failed to withdraw the subsidy, within the meaning of Article 7.8 of the SCM Agreement. The European Union also recalls that the original panel found that the FSC/ETI measures were export-contingent subsidies to Boeing's LCA division, prohibited under Articles 3.1(a) and 3.2 of the SCM Agreement. As the tax exemptions that continue to be provided through the FSC/ETI measures ultimately derive from precisely the same legislation that has previously been found to be contingent upon export performance, the violation of Article 3.1(a) of the SCM Agreement persists.[3441] In response to the United States' arguments that the relevant legislation has been terminated and that the United States has confirmed that Boeing has not used FSC/ETI tax benefits after 2006, the European Union argues that asserting that Boeing did not "use" the tax benefits necessarily implies that the benefit was conferred on Boeing by the relevant measures at issue, since otherwise the opportunity to "use" the benefit would never arise. The European Union thus considers that whether Boeing has "used" the FSC/ETI tax benefits after 2006 is irrelevant to the question of whether a prohibited export subsidy "exists".[3442] The European Union also reiterates its view that the United States has failed to adequately substantiate its assertion that Boeing has not used the FSC/ETI tax benefits after 2006.[3443]

10.5. With respect to the Income Allocation and Apportionment Agreement between Boeing and South Carolina, the European Union argues that, in derogation from the normal rule under South Carolina law, the apportionment method to which Boeing is entitled excludes sales of Boeing LCA delivered in South Carolina from being considered as South Carolina sales, on the condition that they are destined for export markets outside the United States, thus reducing Boeing's income tax liability. As such, the measure is contingent in law upon export performance and, as a consequence prohibited by Articles 3.1(a) and 3.2, footnote 4, and Annex I(e) of the SCM Agreement.[3444] The European Union furthermore notes that by merely arguing that there is no subsidy with respect to the income tax apportionment method because there is no financial contribution or benefit, the United States fails to respond to the European Union's argument that the measure is contingent upon export. Consequently, if the Panel agrees with the European Union that there is a subsidy, it must necessarily find that such a subsidy is contingent upon export and therefore prohibited.[3445]

10.6. In support of its claim that the United States is granting or maintaining subsidies "contingent/conditioned in fact, upon export", prohibited by Articles 3.1(a) and 3.2, and footnote 4 of the SCM Agreement, the European Union makes the following arguments. First, the United States is granting or maintaining subsidies to Boeing LCA "{a}s found in the original proceedings, and as demonstrated in section V of this submission"[3446]. Second, the evidence demonstrates that both "the ratio of actual sales of Boeing LCA" and "the ratio of anticipated sales of Boeing LCA" are skewed towards exports.[3447] Third, the subsidies at issue are geared to induce

[3437] See Section 8.2.5 above.
[3438] See Section 8.2.8.9 above.
[3439] European Union's first written submission, section VI.A.2(a). (emphasis original)
[3440] European Union's first written submission, section VI.A.2(b). (emphasis original)
[3441] European Union's first written submission, paras. 743-746; second written submission, paras. 794-796.
[3442] European Union's second written submission, paras. 797 and 798 (referring to United States' first written submission, para. 678).
[3443] European Union's second written submission, paras. 799-801.
[3444] European Union's first written submission, paras. 749 and 750; second written submission, paras. 804-806.
[3445] European Union's second written submission, para. 807 (referring to United States' first written submission, para. 677).
[3446] European Union's first written submission, para. 751.
[3447] European Union's first written submission, paras. 752-756; second written submission, paras. 811-817; Summary of Actual Boeing LCA Export Sales as a Percentage of Total Sales, (Exhibit EU-563); Summary of Anticipated Boeing LCA Export Sales as a Percentage of Total Sales, and Supporting Boeing

or incentivize the skewing of Boeing LCA sales towards exports because the United States favours exports and conditions Boeing's behaviour by encouraging and directing Boeing to favour exports and by rewarding Boeing when it complies.[3448] In support of its position, the European Union submits an exhibit containing what it describes as "a series of representative examples of statements attributable to the United States or Boeing and extracted from the documents relating to the subsidies, which statements refer expressly to exports, or a proxy for exports".[3449] According to the European Union, these statements speak to the structure, design, and operation of the subsidies, and are in the nature both of encouragement and direction going forward, as well as of reward for past export performance.[3450] Fourth, the skewing of Boeing's LCA sales towards exports is not reflective of the conditions of supply and demand that would exist in the absence of the subsidies. This is because it would be highly implausible that the behaviour of the United States and Boeing has had no impact on the distribution of sales between the domestic and export markets. Absent the subsidies, the share of sales accounted for by exports would necessarily be diminished in some measure. In the original proceeding a finding was made that the launch of certain aircraft would not have occurred or would have been delayed in the absence of the subsidies. This implies at a minimum that the actual and anticipated development of Boeing and its sales have been accelerated by the subsidies.[3451]

10.7. With respect to the European Union's claim that the FSC/ETI measures are subsidies contingent in law upon export performance and thus inconsistent with Articles 3.1(a) and 3.2, the United States argues that it enacted legislation terminating the FSC/ETI tax benefits and confirmed that Boeing did not use FSC/ETI tax benefits after 2006.[3452] The United States considers that the European Union's claim that the Income Allocation and Apportionment Agreement between Boeing and South Carolina is a subsidy contingent in law upon export performance and thus inconsistent with Articles 3.1(a) and 3.2 is based on a misunderstanding of South Carolina tax law. Indeed, the European Union has failed to establish a *prima facie* case that the Agreement confers a specific subsidy to Boeing, within the meaning of Article 1, let alone a subsidy that is contingent on export performance, within the meaning of Article 3.1(a).[3453] Even if the European Union could demonstrate the existence of a subsidy, it must also demonstrate that the granting of the subsidy is conditioned on export performance, which it cannot.[3454]

10.8. With respect to the European Union's claim of *de facto* export contingency under Articles 3.1(a) and 3.2, the United States argues that the European Union fails to make a *prima facie* case that the United States presently provides Boeing with subsidies prohibited under Articles 3.1(a) and 3.2 of the SCM Agreement. Indeed, the European Union fails to specify with any particularity how the alleged subsidies are in fact contingent on export performance. Instead of relying on any explicit link between export behaviour and any alleged subsidy, the European Union's position is based on the assertions that Boeing's export sales are increasing as a percentage of its total sales, and that a selection of statements, unrelated to any particular measure at issue, demonstrates that the United States has conditioned Boeing's behaviour to favour exports. These statements concerning the importance of exports to the U.S. economy are unremarkable, and certainly do not allow the United States to understand how the Kansas IRBs, for example, induce Boeing to skew sales in favour of exports.[3455]

10.9. Brazil argues that the determination of whether a subsidy is contingent in fact upon export performance should be based on an examination of the total configuration of facts surrounding the granting of a subsidy rather than only on an examination of sales ratios. The fact that a finding of

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Current Market Outlooks, (Exhibit EU-564); and Summary of Airbus Global Market Forecasts, and Corroborating Data on Anticipated Boeing LCA Export Sales, (Exhibit EU-565).

[3448] European Union's first written submission, paras. 757 and 758; second written submission, paras. 818-827; and Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies, (Exhibit EU-566).

[3449] European Union's first written submission, para. 757; and Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies, (Exhibit EU-566).

[3450] European Union's second written submission, 824-834 (referring to United States' first written submission, para. 674; and Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies, (Exhibit EU-566)).

[3451] European Union's first written submission, paras. 760 and 761.

[3452] United States' first written submission, para. 678; second written submission, para. 637.

[3453] United States' first written submission, para. 677; second written submission, para. 635.

[3454] United States' second written submission, para. 636.

[3455] United States' first written submission, para. 674; second written submission, paras. 627-630.

de facto export contingency must involve an examination of "the total configuration of the facts constituting and surrounding the granting of the subsidy, none of which is likely to be decisive in any given case" means that a comparison of sales ratios cannot be decisive or required as a necessary element of proof. Brazil considers that the Appellate Body's analysis in *EC and certain member States – Large Civil Aircraft* confirms that the evidence for demonstrating *de facto* export contingency does not require in whole or in part reliance on an analysis of sales ratios.[3456]

10.10. Canada submits that the European Union has failed to demonstrate that subsidies granted by the United States are contingent in fact upon export performance and thus in violation of Article 3.1(a) of the SCM Agreement. Canada notes that the test established by the Appellate Body for determining whether a subsidy is contingent in fact upon anticipated exportation is whether "the granting of the subsidy {is} geared to induce the promotion of future export performance by the recipient". This standard is met "when 'the subsidy is granted so as to provide an incentive to the recipient to export in a way that is not simply reflective of the conditions of supply and demand in the domestic and export markets undistorted by the granting of the subsidy'".[3457] In this context, the Appellate Body has explained that an assessment of whether the granting of a subsidy is in fact tied to anticipated exportation could be based on a comparison of the ratio of anticipated export sales to domestic sales of the subsidized product that would result from the granting of the subsidy with the ratio of export sales to domestic sales of that product in the absence of the subsidy.[3458]

10.11. In light of the guidance provided by the Appellate Body, Canada argues that the European Union has failed to demonstrate that subsidies to Boeing are in fact tied to anticipated exportation for three main reasons. First, the European Union presents charts showing export sales as a percentage of total sales but does not provide baseline data demonstrating the extent to which Boeing would be expected to export in the absence of the subsidies.[3459] Second, the European Union does not demonstrate that increased exports as a percentage of total sales are due to subsidies and not merely reflective of a change in market conditions. In fact, the evidence submitted by the European Union suggests that it is more likely a change in market conditions rather than subsidization that accounts for the increase in export sales relative to domestic sales.[3460] Third, the European Union fails to explain how the factual circumstances surrounding the granting of the subsidies support a finding of *de facto* export contingency. The statements relied upon by the European Union as evidence of a U.S. policy of favouring exports do not prove that the subsidies were geared to induce export performance.[3461]

10.12. Japan recalls that the appropriate legal standard for determining whether a subsidy is *de facto* export contingent is whether "the granting of the subsidy is geared to induce the promotion of future export performance by the recipient", which standard is met "when the subsidy is granted so as to provide an incentive to the recipient to export in a way that is not simply reflective of the conditions of supply and demand in the domestic and export markets undistorted by the granting of the subsidy". Whether a subsidy is geared to induce the promotion of future export performance "must be inferred from the total configuration of the facts constituting and surrounding the granting of the subsidy", including the design and structure of the measure, the modalities of the operation set out in the measure, and the relevant factual circumstances surrounding the granting of the subsidy that provide the context for understanding the measure's design, structure and modalities of operation.[3462] A comparison of the ratio of anticipated export sales to domestic sales of a subsidized product to the ratio of export sales and domestic sales in the absence of the subsidy may be one of the "facts constituting and surrounding the granting of the subsidy" but cannot in and of itself be determinative of whether a given subsidy is *de facto* export contingent. In this respect, Japan considers that the statements submitted by the European Union in support of its *de facto* export contingency claim do not demonstrate an

[3456] Brazil's third-party submission, paras. 72-83 (citing Appellate Body Report, *Canada – Aircraft*, para. 76).
[3457] Canada's third-party submission, para. 5 (quoting Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1044 and 1045).
[3458] Canada's third-party submission, para. 6 (quoting Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1047).
[3459] Canada's third-party submission, paras. 10-12.
[3460] Canada's third-party submission, paras. 13 and 14.
[3461] Canada's third-party submission, paras. 15 and 16.
[3462] Japan's third-party submission, paras. 28 and 29 (quoting Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1044-1047 (emphasis added by Japan)).

incentive to skew anticipated sales towards exports.[3463] Japan considers that to accept that *de facto* export contingency can be established solely on the basis of this anticipated ratio test would create legal uncertainty and make Members with small domestic markets more vulnerable to findings of *de facto* export contingency than Members with larger domestic markets.[3464]

10.2.2 Evaluation by the Panel

10.13. The issue before us is whether the United States is granting or maintaining subsidies contingent on export performance, in contravention of Articles 3.1(a) and 3.2 of the SCM Agreement.

10.14. We recall that our preliminary ruling in Section 7.6 means that the European Union may validly make claims under Articles 3.1(a) and 3.2 of the SCM Agreement only in respect of the post-2006 NASA and DOD aeronautics R&D measures, the FAA aeronautics R&D measure, the FSC/ETI measures, and the South Carolina measures that are otherwise within the Panel's terms of reference.[3465] Where we find, in Section 8 of this Report, that any measure in respect of which the European Union may validly make claims under Articles 3.1(a) and 3.2 of the SCM Agreement is not a subsidy, within the meaning of Article 1 of the SCM Agreement, there obviously is no basis for a finding that the measure is inconsistent with Article 3.1(a) as a subsidy that is contingent in law or in fact upon export performance. For example, with regard to the two measures that the European Union alleges are subsidies contingent in law upon export performance, namely the FSC/ETI measures and the South Carolina Income Allocation and Apportionment Agreement, we find, in Sections 8.2.5 and 8.2.8.9 of this Report, that these measures do not constitute subsidies to Boeing after the end of the implementation period. Since the measures are not *subsidies* to Boeing, they cannot be subsidies to Boeing *contingent in law (or in fact) upon export performance.*

10.15. Therefore, our examination in the remainder of this Section concerns any measures in respect of which the European Union's claims under Articles 3.1(a) and 3.2 of the SCM Agreement are within the scope of this proceeding and which we find to be subsidies, including subsidies not found to be specific under Articles 2.1 or 2.2.[3466]

10.16. In this respect, we recall the relevant findings made in Section 8.2 of the Report:

a. Post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements confer subsidies to Boeing that are specific, within the meaning of Article 2.1(a) of the SCM Agreement.[3467]

b. Post-2006 DOD assistance instruments confer subsidies to Boeing that are specific, within the meaning of Article 2.1(a) of the SCM Agreement.[3468]

c. The Boeing CLEEN Agreement involves subsidies to Boeing that are specific, within the meaning of Article 2.1(a) of the SCM Agreement.[3469]

d. The direct transfer of funds by South Carolina to Boeing to compensate Boeing for a portion of the costs to construct the Gemini facilities is a subsidy to Boeing. The subsidy is specific, within the meaning of Article 2.1(c), insofar as the transfer involved funds generated by the issuance of air hub bonds. The subsidy is not specific, within the meaning of Article 2.1, insofar as the transfer involved funds generated by the issuance of economic development bonds.[3470]

[3463] Japan's third-party submission, paras. 31 and 32.
[3464] Japan's third-party submission, paras. 35-37.
[3465] See para. 7.438 above.
[3466] Article 2.3 of the SCM Agreement provides that "{a}ny subsidy falling under the provisions of Article 3 shall be deemed to be specific". A subsidy not found to be specific under Articles 2.1 or 2.2 can be found to be specific (and thereby be subject to the provisions of Part III or V of the SCM Agreement pursuant to Article 1.2), if it is a prohibited subsidy, within the meaning of Article 2.3 of the SCM Agreement.
[3467] See para. 8.231 above.
[3468] See para. 8.469 above.
[3469] See para. 8.565 above.
[3470] See para. 8.850 above.

e. The Project Emerald FILOT Agreement and the Boeing FILOT Agreement constitute subsidies to Boeing but are not specific, within the meaning of Article 2.1 of the SCM Agreement.[3471]

f. The MCIP job tax credits are subsidies to Boeing but are not specific under Articles 2.1 or 2.2 of the SCM Agreement.[3472]

g. The LCF property tax exemption is a subsidy to Boeing that is specific, within the meaning of Article 2.1(c) of the SCM Agreement.[3473]

h. Sales and use tax exemptions on aircraft fuel, computer equipment, and construction materials are subsidies to Boeing that are specific, within the meaning of Article 2.1(c).[3474]

i. The Boeing workforce programme is a subsidy to Boeing but is not specific under Article 2.1(c) of the SCM Agreement.[3475]

10.17. Articles 3.1(a) and 3.2 of the SCM Agreement read as follows:

> 3.1 Except as provided in the Agreement on Agriculture, the following subsidies, within the meaning of Article 1, shall be prohibited:
>
> (a) subsidies contingent, in law or in fact{*}, whether solely or as one of several other conditions, upon export performance, including those illustrated in Annex I{*};
>
> …
>
> 3.2 A Member shall neither grant nor maintain subsidies referred to in paragraph 1.
>
> {*fn original}[4] This standard is met when the facts demonstrate that the granting of a subsidy, without having been made legally contingent upon export performance, is in fact tied to actual or anticipated exportation or export earnings. The mere fact that a subsidy is granted to enterprises which export shall not for that reason alone be considered to be an export subsidy within the meaning of this provision.
> {*fn original}[5] Measures referred to in Annex I as not constituting export subsidies shall not be prohibited under this or any other provision of this Agreement.

10.18. Article 3.1(a) of the SCM Agreement has been subject to interpretation by the Appellate Body and several panels. In particular, the Appellate Body has explained that the word "contingent" in Article 3.1(a) means "conditional" or "dependent for its existence on something else", and that the legal standard for export contingency expressed in Article 3.1(a) is the same for both *de jure* and *de facto* contingency.[3476]

10.19. With respect to the evidence required to demonstrate export contingency, the Appellate Body has found that the evidence that may demonstrate *de jure* export contingency is different from the evidence that may reveal *de facto* export contingency. *De jure* contingency "can be demonstrated on the basis of the very words of the relevant legislation, regulation or other legal instrument constituting the measure". Nonetheless, *de jure* export contingency does not have to be set out expressly, but can also be derived by "necessary implication" from the wording of a legal instrument.[3477] By contrast, the evidence needed to establish *de facto* export contingency goes beyond a legal instrument and includes a variety of factual elements concerning the granting of the subsidy in a specific case. In this respect, the Appellate Body has stated the following:

[3471] See para. 8.908 above.
[3472] See para. 8.933 above.
[3473] See para. 8.1017 above.
[3474] See para. 8.1059 above.
[3475] See para. 8.1074 above.
[3476] Appellate Body Report, *Canada – Aircraft*, paras. 166 and 167. See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1037.
[3477] Appellate Body Report, *Canada – Autos*, para. 100. See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1038.

> Proving *de facto* export contingency is a much more difficult task. There is no single legal document which will demonstrate, on its face, that a subsidy is "contingent … in fact … upon export performance". Instead, the existence of this relationship of contingency, between the subsidy and export performance, must be *inferred* from the total configuration of the facts constituting and surrounding the granting of the subsidy, none of which on its own is likely to be decisive in any given case.[3478]

The factors to be considered as part of an analysis of "the total configuration of the facts constituting and surrounding the granting of the subsidy" include the design and structure of a measure, its modalities of operation and relevant factual circumstances that provide context for an understanding of the measure's design, structure and modalities of operation.[3479]

10.20. The Appellate Body has noted that the ordinary meaning of the word "tie" in the first sentence of footnote 4 is to "limit or restrict as to … conditions". The Appellate Body has thus found that to satisfy the standard for *de facto* export contingency "a relationship of conditionality or dependence" must be demonstrated between the subsidy and "actual or anticipated exportation or export earnings".[3480] With respect to *anticipated* exportation or export earnings in particular, the Appellate Body has further observed that the meaning of the word "anticipated" in footnote 4 is "expected", and that "{w}hether exports were anticipated or 'expected' is to be gleaned from an examination of objective evidence". The Appellate Body has stressed, however, that the use of this word does not transform the standard for "contingent … in fact" into a standard that is satisfied by merely ascertaining "expectations" of exports on the part of the granting authority. The Appellate Body has explained that, although a subsidy "may well be granted in the knowledge, or with the anticipation, that exports will result", "that alone is not sufficient, because that alone is not proof that the granting of the subsidy is *tied to* the anticipation of exportation".[3481]

10.21. The Appellate Body has emphasized that "merely knowing that a recipient's sales are export-oriented does not demonstrate, without more, that the granting of a subsidy is tied to actual or anticipated exports." Rather, "the export orientation of a recipient may be taken into account as *a* relevant fact, provided that it is one of several facts which are considered and is not the only fact supporting a finding."[3482] The Appellate Body has explained that the relationship of conditionality that must be found between the granting of a subsidy and anticipated exportation in order to find that a subsidy is tied to anticipated exportation "can be established by recourse to the following test: is the granting of the subsidy geared to induce the promotion of future export performance by the recipient?".[3483] Thus:

> {T}he standard for *de facto* export contingency under Article 3.1(a) and footnote 4 of the SCM Agreement would be met when the subsidy is granted so as to provide an incentive to the recipient to export in a way that is not simply reflective of the conditions of supply and demand in the domestic and export markets undistorted by the granting of the subsidy.[3484]

10.22. The Appellate Body also observed in this connection that:

> Moreover, where relevant evidence exists, the assessment could be based on a comparison between, on the one hand, the ratio of *anticipated* export and domestic

[3478] Appellate Body Report, *Canada – Aircraft*, para. 167. See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1038. (emphasis original)
[3479] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, paras. 1046, 1050, and 1056 (quoting Appellate Body Report, *Canada – Aircraft*, para. 167).
[3480] Appellate Body Report, *Canada – Aircraft*, para. 171. See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1037.
[3481] Appellate Body Report, *Canada – Aircraft*, para. 172 (emphasis original). See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1037.
[3482] Appellate Body Report, *Canada – Aircraft*, para. 173. See also Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1039.
[3483] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1044.
[3484] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1045.

> sales of the subsidized product that would come about in consequence of the granting of the subsidy, and, on the other hand, the situation in the absence of the subsidy.[3485]

10.23. Finally, the Appellate Body, in *EC and certain member States – Large Civil Aircraft*, cautioned against undue reliance on government intent in determining whether a subsidy is *de facto* contingent on export performance:

> {W}e note that the Appellate Body and panels have, on several occasions, cautioned against undue reliance on the intent of a government behind a measure to determine the WTO-consistency of that measure. The Appellate Body has found that "the intent, stated or otherwise, of the legislators *is not conclusive*" as to whether a measure is consistent with the covered agreement. In our view, the same understanding applies in the context of a determination on export contingency, where the requisite conditionality between the subsidy and anticipated exportation under Article 3.1(a) and footnote 4 of the SCM Agreement must be established on the basis of objective evidence, rather than subjective intent. We note, however, that while the standard for *de facto* export contingency cannot be satisfied by the subjective motivation of granting government, objectively reviewable expressions of a government's policy objectives for granting a subsidy may, however, constitute relevant evidence in an inquiry into whether a subsidy is geared to induce the promotion of future export performance by the recipient.[3486]

10.24. We consider that the European Union has failed to establish that any of the measures with respect to which its claims are within the scope of this proceeding and which we find to be a subsidy is contingent in fact upon export performance.[3487] This is because the European Union does not provide an adequate analysis of "the total configuration of the facts constituting and surrounding the granting of the subsidy", including the design and structure of the measures, their modalities of operation and relevant factual circumstances that provide context for an understanding of the measures' design, structure, and modalities of operation.[3488] The generalized nature of the European Union's assertions is inconsistent with the guidance provided by the Appellate Body regarding the evidence necessary to establish the existence of a subsidy contingent in fact upon export performance. The relevant sections of the European Union's submissions do not provide any discussion of any individual measure alleged to be a subsidy contingent upon export performance. The European Union states that "{a}s found in the original proceedings, and as demonstrated in Section V of this submission, the United States is granting or maintaining subsidies to Boeing LCA"[3489] but it does not provide any factual analysis of any particular measure to show how that measure is geared to induce the promotion of future export performance. The European Union asserts that actual and anticipated sales of Boeing are skewed towards exports and that "the subsidies are geared to induce or incentivise this skewing because the United States favours exports, and conditions Boeing's behaviour by encouraging and directing Boeing to favour exports and by rewarding Boeing when it complies".[3490] However, the statements the European Union submits in support of this assertion[3491] do not address any of the measures in sufficient detail to enable an understanding of its design, structure, and modalities.

10.25. Thus, for example, the document provided by the European Union (Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies) includes the following statements relating to various NASA programmes:

> With competition from foreign competitors greatly increasing, affordable, innovative technology is critically needed to help preserve the U.S. aeronautics industry market

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[3485] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1047. (emphasis original)

[3486] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1050. (emphasis original, fns omitted)

[3487] As noted above, we find that two measures which the European Union alleges are contingent in law upon export performance are not subsidies to Boeing and therefore cannot be subsidies that are inconsistent with Article 3.1(a).

[3488] See para. 10.19 above.

[3489] European Union's first written submission, para. 751.

[3490] European Union's first written submission, p. 321, item (iv).

[3491] Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies, (Exhibit EU-566).

> share, jobs, and balance of trade. Exports in large commercial transports make a significant contribution to the U.S. balance of trade.
>
> The President, Congress and the NASA Administrator are emphasizing the value of NASA's research and technology base to U.S. industry in helping to increase industrial competitiveness, provide jobs and improve the quality of life and the balance of trade. The taxpayers' investment in NASA is an investment in the international competitiveness of U.S. industry through partnerships that build upon NASA's research and make it available to U.S. industry.
>
> Maintenance of the United States aircraft industry's market position is critical for the preservation of high paying skilled jobs, a capable industrial base, and balance of trade.
>
> Boeing is the world's largest producer of commercial transport aircraft, maintaining a market share of over 57% for the world and over 80% for the United States. This provides a large benefit to the US. economy. Approximately 75% of Boeing sales are exports, helping to reduce the US. trade deficit. Every $1 billion in US. airplane sales creates about 30,000 labor years of work, of which 87% is performed in the US.
>
> The aerospace industry is a major contributor to the balance of trade and the balance of trade has an effect on the U.S. standard of living.
>
> As mentioned earlier, NASA's aeronautics customers play major roles in the economic growth and national security of the United States. In 1994 (a year of record low performance) the aerospace industry, primarily aeronautics, generated $112 billion in sales, over $38 billion in exports, and over $25 billion in positive balance of trade.
>
> Appearing before the US House of Representatives, Wesley Harris, NASA's Associate Administrator, testified that the objective of the NASA AST Program was to provide "U.S. industry with a competitive edge to recapture market share {and} maintain a strongly positive balance of trade".
>
> By the mid-1980s, there was yet another argument for continued government support of aeronautical research: the diminishing level of U.S. industrial competitiveness in the global market … Leaders in government, industry, academia and the media all began stress that to preserve the U.S. lead in aeronautics and, indeed, the U.S. balance of trade, the country had to accord a much higher priority to aeronautical research and development.[3492]

10.26. Other statements in this document are even more general in nature. Overall, we agree with Canada's characterization of the statements in this document:

> The statements of Boeing employees and U.S. government officials merely reflect that Boeing is considered to generate high-value technology through research and development, that it is a large exporter of products making an important contribution to the United States' trade balance, that exports are important because they generate employment and that the U.S. government values Boeing's contribution as an exporter of high-technology products. These statements do not, however, prove that the subsidies were geared to induce export performance.[3493]

10.27. While the European Union asserts that these statements "also speak to the structure, design and operation of the subsidies"[3494], it fails to connect any of these statements with any particular measure and explain how they demonstrate that the measure is contingent in fact upon export performance. Instead, the European Union argues that "{t}aken as a whole, this evidence

[3492] Illustrative Statements Relating to *De Facto* Export Contingency of U.S. Subsidies, (EU-Exhibit-566), p. 4. We also note that most statements reproduced in this document that relate to NASA aeronautics R&D programmes pertain to a period well before the expiry of the implementation period in this proceeding.

[3493] Canada's third-party submission, para. 16.

[3494] European Union's first written submission, para. 757.

demonstrates a US policy of favouring exports".[3495] In our view, statements at this level of generality regarding the existence of a "US policy of favouring exports", unsubstantiated by measure-specific analysis of design, structure and modalities of operation of particular measures, cannot support a finding of *de facto* export contingency. In sum, we find that, as stated by the United States, "the EU fails to specify with any particularity how the alleged subsidies are in fact contingent on export performance".[3496]

10.28. Finally, insofar as the European Union's argument is based on data purporting to show that the ratios of Boeing's actual and anticipated export sales to total sales have increased over time, we note that the European Union fails to compare the anticipated export ratio that would come about in consequence of the granting of the subsidy with the situation in the absence of the subsidy.[3497]

10.29. For these reasons, **to the extent that we have ruled that the European Union's claims under Articles 3.1(a) and 3.2 are within the scope of this proceeding, we reject these claims as unfounded because: (a) certain measures challenged by the European Union are not subsidies provided to Boeing after the end of the implementation period; and (b) where we find that the measures at issue are subsidies provided to Boeing after the end of the implementation period, the European Union has failed to establish that any of these subsidies is contingent in fact upon export performance**.

10.3 Whether the United States grants or maintains subsidies prohibited by Articles 3.1(b) and 3.2 of the SCM Agreement

10.3.1 Main arguments of the parties and third parties

10.30. The European Union claims, with respect to all measures challenged in this proceeding, that "{t}he United States is granting or maintaining subsidies contingent/conditioned in fact upon the use of domestic over imported goods, which are thus prohibited by Articles 3.1(b) and 3.2 of the SCM Agreement".[3498] In support of this claim, the European Union makes the following arguments. First, "{a}s found in the original proceedings, and as demonstrated in Section V of this submission, the United States is granting or maintaining subsidies to Boeing".[3499] Second, pursuant to the subsidies, Boeing is to produce goods, of U.S. domestic origin, destined to be used in the manufacture of Boeing LCA, to the exclusion of imported goods.[3500] Third, pursuant to the subsidies, Boeing is to maintain employment levels in the United States that cannot be sustained without the use of U.S. domestic goods.[3501] Fourth, pursuant to the subsidies, Boeing is to locate substantial development and production activities in the United States, which necessarily implies the use of U.S. domestic goods.[3502] Finally, the United States favours the use of U.S. domestic goods and labour, and conditions Boeing's behaviour by encouraging and directing Boeing to favour U.S. domestic goods and labour, rewarding Boeing when it complies.[3503] Thus, the European Union considers that, taken as a whole, or in any permutation, the facts and evidence demonstrate that the granting or maintaining of the subsidies, without having been made legally contingent/conditional upon the use of domestic over imported goods, is nevertheless tied to the use of domestic over imported goods, and that the subsidies are thus contingent/conditioned in fact upon the use of domestic over imported goods, and are prohibited by Articles 3.1(b) and 3.2 of the SCM Agreement.[3504]

[3495] European Union's first written submission, para. 758.
[3496] United States' first written submission, para. 674. Also see Canada's third-party submission, paras. 15 and 16; and Japan's third-party submission, paras, 29 and 32.
[3497] Appellate Body Report, *EC and certain member States – Large Civil Aircraft*, para. 1047.
[3498] European Union's first written submission, para. 764.
[3499] European Union's first written submission, para. 768.
[3500] European Union's first written submission, para. 769; and Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583).
[3501] European Union's first written submission, para. 770; Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583).
[3502] European Union's first written submission, para. 771; Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583).
[3503] European Union's first written submission, para. 772; and Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583).
[3504] European Union's first written submission, para. 776.

10.31. The United States argues with respect to the European Union's claim of *de facto* contingency of all challenged subsidies under Articles 3.1(b) and 3.2 that the European Union fails to make a *prima facie* case that the United States presently provides Boeing with subsidies prohibited under Articles 3.1(b) and 3.2. Indeed, the European Union fails to identify a single measure that confers a subsidy contingent on the use of domestic over imported goods. Rather than look to the text or operation of any particular measure, the European Union offers a collection of miscellaneous statements (ranging from statements by the U.S. President to statements by low-level county and municipal officials), unrelated to any particular measure, which, according to the European Union, have conditioned Boeing's behaviour to use domestic over imported goods. These statements are unremarkable and fail to demonstrate contingency within the meaning of Article 3.1(b). At most, they suggest that Boeing makes products in the United States and employs workers there, and that some in the United States like the fact that they do.[3505]

10.32. Brazil notes that the European Union relies on the same evidence in support of its claims under Article 3.1(b) and Article III:4 of the GATT 1994 and argues that while both provisions address discriminatory conduct, they differ in scope and substantive obligations. Thus, a violation of Article 3.1(b) of the SCM Agreement does not necessarily and directly imply a violation of Article III:4 of the GATT 1994. Brazil also considers that the Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods submitted by the European Union are of limited probative value, particularly given the lack of any specific evidence relating to how each measure either is conditioned upon the use of domestic over imported goods or acts to accord less favourable treatment to imported products.[3506]

10.33. Canada argues that whereas the prohibition in Article 3.1(b) of the SCM Agreement covers situations where the granting of a subsidy is contingent on the recipient *purchasing* domestic over imported goods, the European Union's position in this proceeding improperly expands the scope of Article 3.1(b) to cover subsidies contingent on the recipient *producing* a particular intermediate good.[3507] Nothing in the GATT 1994 or the SCM Agreement prohibits a Member from making the granting of a subsidy contingent on a recipient producing goods in its territory. In fact, GATT Article III:8(b) explicitly allows WTO Members to provide subsidies only to their domestic producers. A producer of a final good that is required to produce an intermediate good is also a producer of the intermediate good.[3508] Furthermore, Canada argues that the GATT and the SCM Agreement do not limit a subsidizing Member's ability to define the level of production for subsidy eligibility purposes. As part of that discretion, a Member may explicitly require the production of an intermediate good and may also implicitly require the production of an intermediate good by requiring a subsidy recipient to produce a final good or use a particular level of labour in a way that cannot be accomplished without producing an intermediate good. If a Member could not require the production of an intermediate good, that Member's ability to condition the provision of a subsidy on a production requirement would be significantly curtailed because the production requirement would then have to be limited to simple assembly operations.[3509]

10.34. In this respect, Canada argues that the European Union's position that a subsidy requiring the production of an intermediate good to be used in the production of a final good is contingent upon the use of a domestic over an imported good, contrary to Article 3.1(b) is incorrect, as demonstrated by the Appellate Body decision in *Canada – Autos*. In assessing whether a measure providing Canadian automobile manufacturers with an import duty exemption contingent *inter alia* upon a Canadian value added requirement violated Article 3.1(b) of the SCM Agreement, the Appellate Body found that the Canadian value added requirement would violate Article 3.1(b) only if it required the manufacturer to use domestic goods. The Appellate Body did not consider that a requirement to use domestic labour, regardless of whether that requirement implied the production of intermediate goods would violate Article 3.1(b).[3510]

[3505] United States' first written submission, para. 676 (referring to European Union's first written submission, para. 773); second written submission, paras. 631-633.
[3506] Brazil's third-party submission, paras. 60-70.
[3507] Canada's third-party submission, para. 20.
[3508] Canada's third-party submission, para. 21.
[3509] Canada's third-party submission, para. 22.
[3510] Canada's third-party submission, paras. 24 and 25.

10.3.2 Evaluation by the Panel

10.35. We examine the European Union's claims under Articles 3.1(b) and 3.2 insofar as we have determined these claims to be within the scope of this proceeding.[3511] We recall that our preliminary ruling in Section 7.6.2 means that the European Union may validly make claims under Articles 3.1(b) and 3.2 of the SCM Agreement (and Article III:4 of the GATT 1994) only in respect of the post-2006 NASA and DOD aeronautics R&D measures, the FAA aeronautics R&D measure, and the South Carolina measures that are otherwise within the Panel's terms of reference.[3512] Where we find, in Section 8 of this Report, that any measure in respect of which the European Union may validly make claims under Articles 3.1(b) and 3.2 of the SCM Agreement is not a subsidy within the meaning of Article 1 of the SCM Agreement, there obviously is no basis for a finding that the measure is inconsistent with Article 3.1(b) as a subsidy that is contingent in law or in fact upon the use of domestic over imported goods.

10.36. Therefore, our examination in the remainder of this Section concerns any measures in respect of which we have ruled that the European Union's claim under Articles 3.1(b) and 3.2 of the SCM Agreement are within the scope of this proceeding and which we find to be subsidies, including subsidies not found to be specific under Articles 2.1 or 2.2.[3513]

10.37. Article 3.1(b) of the SCM Agreement reads as follows:

> Except as provided in the Agreement on Agriculture, the following subsidies, within the meaning of Article 1, shall be prohibited:
>
> …
>
> (b) subsidies contingent, whether solely or as one of several other conditions, upon the use of domestic over imported goods.

10.38. The term "contingent" has the same meaning in Article 3.1(b) as in Article 3.1(a).[3514] A subsidy is prohibited under Article 3.1(b) if it is conditional, i.e. dependent for its existence on the use of domestic over imported goods. Article 3.1(b) applies to both contingency in law and contingency in fact.[3515] While the Appellate Body has not yet discussed the question of the evidence required to establish that a subsidy is contingent in fact upon the use of domestic over imported goods, we can see no logical reason why the Appellate Body's pronouncements on the evidence required to establish *de facto* contingency under Article 3.1(a) would not also apply to Article 3.1(b).

10.39. As in the case of the European Union's claim that the subsidies at issue in this proceeding are contingent in fact upon export performance, we consider that the European Union fails to adequately support its claim that the subsidies at issue are contingent in fact upon the use of domestic over imported goods through a proper analysis of the particular measures at issue. With respect to none of these measures does the European Union attempt to support its claim through an analysis of "the total configuration of the facts constituting and surrounding the granting of the subsidy", including design, nature, and operation of the measure. Instead, the European Union submits a document entitled Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods[3516] containing "a series of extracts from the documents relating to the subsidies" and argues that the statements in this document "refer expressly or by implication to the fact" that "Boeing is to produce certain goods in the United States", "Boeing is to maintain certain employment levels in the United States", "Boeing is to locate substantial development or production activities in the United States" and "refer expressly to the use of US domestic goods or labour, or a proxy thereof".[3517] In fact, however, the European Union does not

[3511] See para. 10.2 above.
[3512] See para. 7.438 above.
[3513] See para. 10.16 above.
[3514] Appellate Body Report, *Canada – Autos*, para. 123.
[3515] Appellate Body Report, *Canada – Autos*, para. 143.
[3516] Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583).
[3517] European Union's first written submission, paras. 769, 770, 771, and 772.

explain how these Illustrative Statements actually support these assertions in respect of any particular measure. We note that many of these statements are quite general in nature and don't pertain to the design, nature and operation of particular measures.

10.40. Thus, for example, with regard to NASA aeronautics R&D measures, the document Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods includes the following statements:

> With competition from foreign competitors greatly increasing, affordable, innovative technology is critically needed to help preserve the U.S. aeronautics industry market share, jobs and balance of trade.
>
> In discussing the future of aeronautics in the US, Senator George Allen (VA), Chair of the Senate Science, Technology and Space Subcommittee, commented: "So, the question is: does the United States intend to respond to this competitive challenge from the Europeans, and if so, when and how? I recognize that the aviation-related manufacturing sector is a net exporter, representing many good-paying jobs for our fellow Americans. A loss of these jobs has a direct impact on the quality of life for our constituents."
>
> The President, Congress, and the NASA Administrator are emphasizing the value of NASA's research and technology base to U.S. industry in helping to increase industrial competitiveness, provide jobs and improve the quality of life and the balance of trade. The taxpayers' investment in NASA is an investment in the international competitiveness of U.S. industry through partnerships that build upon NASA's research and make it available to U.S. industry.
>
> Maintenance of the United States aircraft industry's market position is critical for the preservation of high paying skilled jobs, a capable industrial base, and balance of trade.[3518]

10.41. We fail to see how statements of this general nature demonstrate that the particular post-2006 NASA aeronautics R&D subsidies are in fact conditioned upon the production of certain goods in the United States, the maintenance of certain employment levels in the United States or the location of substantial development or production activities in the United States or that these subsidies expressly refer to the use of domestic goods or labour, as argued by the European Union. Moreover, even assuming these assertions are factually correct with respect to these measures, the European Union has not explained why this would be sufficient to conclude that the measures are contingent upon the use of domestic over imported goods and thereby inconsistent with Article 3.1(b). Thus, the European Union contends on the basis of the Illustrative Statements in its Exhibit that "Boeing is to produce certain goods in the United States, which are thus goods of US origin, and which are destined to be used in the manufacture of Boeing LCA, to the exclusion of imported goods". The European Union does not state the legal basis for its apparent view that if the recipient of a subsidy "is to produce certain goods in the United States" and these goods "are destined to be used in the manufacture of Boeing LCA", the subsidy is thereby contingent upon "the use of domestic goods over imported goods".

10.42. With respect to several other measures the statements in the document Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods are somewhat more directly related to the particular measures than in the case of the NASA aeronautics R&D measures. In particular, the document contains statements pertaining to some of the South Carolina measures that we find to be subsidies in Section 8.2.8 of this Report. In respect of some of those South Carolina measures, the evidence in this document indicates that they are subject to conditions relating to levels of employment and/or investment or the location of production, as also discussed elsewhere in this Report. In contrast, we see no statements that refer expressly to the use of domestic U.S. goods as a condition of eligibility for these subsidies. The European Union does not explain with respect to any particular measure why the existence of such conditions relating to employment, investment or location of production means that the

[3518] Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583), pp. 6 and 7.

measure is in fact contingent upon the use of domestic over imported goods within the meaning of Article 3.1(b) of the SCM Agreement.

10.43. For these reasons, **to the extent that we have ruled that the European Union's claims under Articles 3.1(b) and 3.2 are within the scope of this proceeding, we reject these claims as unfounded because: (a) certain measures challenged by the European Union are not subsidies provided to Boeing after the end of the implementation period; and (b) where we find the measures to be subsidies provided to Boeing after the end of the implementation period, the European Union has failed to establish that any of these subsidies is contingent in fact upon the use of domestic over imported goods**.

10.4 Whether the United States is maintaining measures inconsistent with Article III:4 of the GATT 1994

10.44. The European Union submits that the United States maintains measures inconsistent, in law or in fact, with Article III:4 of the GATT 1994. This claim concerns all measures challenged in this proceeding.[3519] The European Union argues that through the subsidies granted or maintained by the United States, it grants less favourable treatment to imported parts and materials capable of being used in the production of Boeing LCA, when compared with domestic parts, with respect to the internal sale, offering for sale, purchase, transportation, distribution or use. As with its claim under Article 3.1(b) of the SCM Agreement, the European Union's claim under Article III:4 of the GATT 1994 is based on its arguments, and evidence in support thereof, that Boeing is to produce goods, of U.S. domestic origin, destined to be used in the manufacture of Boeing LCA, to the exclusion of imported goods; that Boeing is to maintain employment levels in the United States that cannot be sustained without the use of U.S. domestic products or materials; that Boeing is to locate substantial development and production activities in the United States, which necessarily implies the use of U.S. domestic products or materials; and that the United States favours the use of U.S. domestic products or materials and labour, and conditions Boeing's behaviour by encouraging and directing Boeing to favour U.S. domestic goods and labour, rewarding Boeing when it complies.[3520] The measures at issue are applied so as to afford protection to domestic production of parts and materials capable of being used in the production of Boeing LCA, and are therefore inconsistent with Article III:4 of the GATT 1994.[3521]

10.45. The United States rejects the European Union's argument that all measures challenged in this proceeding are also inconsistent with Article III:4 of the GATT 1994. Indeed, the United States argues that it is impossible to discern the legal or factual basis for this claim, as it consists entirely of a cross-reference to the European Union's factual and legal arguments regarding Article 3.1(b) of the SCM Agreement, which applies an entirely different legal standard. This approach of treating two separate provisions of the covered agreements as being essentially the same fails to meet the European Union's burden of proof to establish an inconsistency with Article III:4 of the GATT 1994.[3522] Furthermore, the exhibit that the European Union relies on in its Article 3.1(b) claim and references in its Article III:4 claim, consisting of statements by federal, state, and local officials, entirely fails to explain the alleged connection between the statements and the factual or legal conclusions it asks the Panel to draw. At most, these statements suggest that Boeing makes products in the United States and employs workers there, and that some in the United States like the fact that they do.[3523]

10.46. We note that in support of its claim under Article III:4, the European Union makes the same factual assertions and relies upon the same evidence as in respect of its claim under Article 3.1(b) of the SCM Agreement. **We thus reject the European Union's claim for the same reasons that we have rejected its claim under Article 3.1(b). First, the European Union fails to substantiate its factual assertions through a sufficiently detailed discussion of the particular measures at issue. Second, the European Union does not provide sufficient reasoning to explain how these factual assertions, even assuming they**

[3519] European Union's first written submission, para. 786.
[3520] European Union's first written submission, para. 787; second written submission, para. 862.
[3521] European Union's first written submission, para. 788; second written submission, para. 863.
[3522] United States' second written submission, paras. 638-640.
[3523] United States' second written submission, para. 640 (referring to Illustrative Statements Relating to *De Facto* Contingency on the Use of Domestic Over Imported Goods, (Exhibit EU-583)).

were correct, would warrant a finding of inconsistency with Article III:4 of the GATT 1994.

10.5 Conclusion

10.47. We conclude that:

a. To the extent that we have ruled that the European Union's claims under Articles 3.1(a), 3.1(b) and Article 3.2 of the SCM Agreement are within the scope of this proceeding, these claims are unfounded because: (i) certain measures challenged by the European Union are not subsidies provided to Boeing after the end of the implementation period; and (ii) where we find that the measures at issue are subsidies provided to Boeing after the end of the implementation period, the European Union has failed to establish that any of these subsidies is contingent in fact upon export performance or upon the use of domestic over imported goods.

b. To the extent that we have ruled that the European Union's claims under Article III:4 of the GATT 1994 are within the scope of this proceeding, the European Union has failed to establish that any of the measures at issue is inconsistent with Article III:4 of the GATT 1994.

11 CONCLUSIONS AND RECOMMENDATIONS

11.1. We recall that our task in this proceeding under Article 21.5 of the DSU is to resolve a "disagreement as to the existence or consistency with a covered agreement of measures taken to comply with the recommendations and rulings" of the DSB. The European Union claims that the United States has failed to implement the DSB recommendations in *US – Large Civil Aircraft (2nd complaint)* to withdraw the subsidies or take appropriate steps to remove the adverse effects, pursuant to Article 7.8 of the SCM Agreement. The European Union also claims that the measures at issue in this proceeding are inconsistent with Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994. The United States maintains that it has complied fully with the DSB recommendations and rulings by either withdrawing the relevant subsidies or taking appropriate steps to remove their adverse effects.

11.2. In this Section of the Report, we provide a summary of the conclusions we have reached in the preceding Sections and formulate our overall conclusion as to whether the United States has failed to comply with the DSB recommendations and rulings.

Rulings on the terms of reference and scope of the proceeding

11.3. In Section 7 of this Report, the Panel has considered a large number of questions arising out of a request of the United States that the Panel rule that certain measures, and claims of the European Union with regard to certain measures, are outside the Panel's terms of reference because the European Union's panel request does not satisfy the requirements of *Article 6.2 of the DSU*; and that certain measures, and claims of the European Union with regard to certain measures, are outside *the scope of this compliance proceeding*.[3524]

11.4. In respect of whether certain measures, and claims with respect to certain measures, are outside our terms of reference for purposes of Article 6.2 of the DSU, we have made the following rulings:

a. the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994, are within the Panel's terms of reference[3525];

[3524] See para. 7.1 above.

[3525] The Panel's ruling that the European Union's claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement, and under Article III of the GATT 1994, are within its terms of reference is without prejudice to its further rulings, in para. 11.6 below, as to whether these claims in respect of certain measures are nevertheless outside the scope of this compliance proceeding.

b. the South Carolina Phase II measures are outside the Panel's terms of reference, owing to the failure of the European Union's panel request to meet the requirements of Article 6.2 of the DSU in respect of such measures; and

c. the Washington State tax measures, as amended by SSB 5952, are outside the Panel's terms of reference, owing to the failure of the European Union's panel request to meet the requirements of Article 6.2 of the DSU in respect of such measures.

11.5. In respect of whether certain measures are outside the scope of this compliance proceeding, we have made the following rulings:

a. the following measures are within the scope of this compliance proceeding:

i. the Washington State B&O tax credits for preproduction/aerospace product development[3526]; the Washington State B&O tax credit for property taxes and leasehold excise taxes[3527]; the Washington State sales and use tax exemptions for computer software, hardware, and peripherals; and the City of Everett B&O tax rate reduction;

ii. DOD procurement contracts funded under the 23 original RDT&E program elements;

iii. DOD procurement contracts HR0011-06-C-0073 and HR-0011-08-C-0044 SOW and assistance instruments HR0011-06-2-0008, FA8650-07-2-7716, and HR0011-10-2-0001 funded under the Materials Processing Technology Project of the Materials and Biological Technology program element;

iv. the provision of access to DOD equipment and employees through the post-2006 DOD procurement contracts and assistance instruments funded under the 23 original RDT&E program elements and the "additional" program elements that we have found to be within the scope of this proceeding;

v. the FAA aeronautics R&D measure; and

vi. the South Carolina Project Gemini measures and the Project Emerald measures.

b. the following measures are outside the scope of this compliance proceeding:

i. the Washington State JCATI measure;

ii. Air Force Contract F19628-01-D-0016 funded under the DRAGON Project of the Airborne Warning and Control System (AWACS) (PE 0207417F) program element; Air Force Contract FA8625-11-C-6600 funded under the KC-46, Next Generation Aerial Refueling Aircraft (PE 0605221F) program element; and measures funded under the Multi-Mission Maritime Aircraft (P-8A) (PE 0605500N) program element, including Navy contracts N00019-04-C-3146, N00019-09-C-0022, and N00019-12-C-0112[3528]; and

iii. the provision of access to DOD equipment and employees through the pre-2007 procurement contracts and assistance instruments funded under the 23 original RDT&E program elements.

11.6. In addition to the above, with respect to whether claims of the European Union with regard to certain measures are outside the scope of this compliance proceeding, we have made the following rulings:

[3526] Including amendments thereto pursuant to SSB 6828.

[3527] Including amendments thereto pursuant to HB 2466.

[3528] The Panel has also ruled that claims concerning the Technology Transfer program element, the IP ManTech program element and the Long Range Strike Bomber program element are not further considered in this proceeding because the Panel is not satisfied of the existence of any procurement contracts or assistance instruments with Boeing which the European Union identifies as relevant to its claims which are funded through these program elements.

a. the European Union is precluded from bringing claims under Articles 3.1(a) and 3.2 of the SCM Agreement against the following four original Washington State tax measures enacted under HB 2294: the Washington State B&O tax rate reduction; the Washington State B&O tax credits for preproduction/aerospace product development[3529]; the Washington State B&O tax credit for property taxes[3530]; and the Washington State sales and use tax exemptions for computer hardware, peripherals, and software.

b. the European Union is precluded from bringing claims under Articles 3.1(b) and 3.2 of the SCM Agreement, and under Article III:4 of the GATT 1994, in respect of the following four original Washington State tax measures enacted under HB 2294: the Washington State B&O tax rate reduction; the Washington State B&O tax credits for preproduction/aerospace product development[3531]; the Washington State B&O tax credit for property taxes[3532]; and the Washington State sales and use tax exemptions for computer hardware, peripherals, and software; as well as the FSC/ETI measures.

c. the European Union is precluded from bringing claims under Articles 3.1(a), 3.1(b), and 3.2 of the SCM Agreement and under Article III:4 of the GATT 1994 in respect of:

   i. the City of Everett B&O tax rate reduction, the tax abatements related to the City of Wichita IRBs, and the pre-2007 NASA Space Act Agreements and DOD procurement contracts at issue in the original proceeding; and

   ii. the pre-2007 NASA procurement contracts and DOD assistance instruments at issue in the original proceeding, as amended by the respective Boeing Patent Licence Agreements.

Conclusions with respect to whether the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement

11.7. With respect to the European Union's claim that the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement, the Panel concludes as follows in Section 8 of this Report:

a. with regard to pre-2007 NASA and DOD aeronautics R&D subsidies that were the subject of the DSB recommendations and rulings, the European Union has established that the modifications made by the United States through the Boeing Patent Licence Agreements to the terms of the pre-2007 NASA procurement contracts and DOD assistance instruments do not constitute a withdrawal of the subsidy within the meaning of Article 7.8 of the SCM Agreement and that the United States, having taken no action in respect of pre-2007 Space Act Agreements, has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement.

b. with regard to the post-2006 measures of the United States challenged in this proceeding, the European Union has established that the following measures involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and that by granting or maintaining these specific subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement:

   i. certain transactions between NASA and Boeing pursuant to post-2006 NASA procurement contracts, cooperative agreements, and Space Act Agreements, with respect to which we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, but consider the United States' estimate of the amount of the financial contribution at **[***]** between 2007 and 2012 to be a credible estimate;

[3529] Including amendments thereto pursuant to SSB 6828.
[3530] Including amendments thereto pursuant to HB 2466.
[3531] Including amendments thereto pursuant to SSB 6828.
[3532] Including amendments thereto pursuant to HB 2466.

ii. certain transactions between DOD and Boeing pursuant to post-2006 DOD assistance instruments, with respect to which we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, but consider the United States' estimate of the amount of the financial contribution at **[***]** between 2007 and 2012 to be a credible estimate;

iii. transactions pursuant to the Boeing CLEEN Agreement with respect to which we are unable to estimate the amount of the subsidy on the basis of the evidence on the record, but consider the European Union's estimate of the amount of the financial contribution at USD 27.99 million between 2010 and 2014 to be a credible estimate;

iv. Washington State B&O tax rate reduction for the aerospace industry, in the amount of USD 325 million between 2013 and 2015;

v. Washington State B&O tax credits for preproduction/aerospace product development, as amended by section 7 of SSB 6828, in the amount of **[***]** between 2013 and 2015;

vi. Washington State B&O tax credit for property taxes, as amended by HB 2466 to include leasehold excise taxes, in the amount of **[***]** between 2013 and 2015;

vii. Washington State sales and use tax exemptions for computer software, hardware, and peripherals, in the amount of **[***]** between 2013 and 2015;

viii. City of Everett B&O tax rate reduction, in the amount of USD 54.1 million between 2013 and 2015;

ix. payments made by South Carolina pursuant to commitments made in the Project Gemini Agreement to compensate Boeing for a portion of the costs incurred by Boeing in respect of the construction of the Gemini facilities and infrastructure through air hub bond proceeds, in the amount of USD 50 million;

x. South Carolina property tax exemption for Boeing's large cargo freighters, in the amount of USD 25.82 million between 2013 and 2015; and

xi. South Carolina sales and use tax exemptions for aircraft fuel, computer equipment, and construction materials, in the amount of USD 2.25 million between 2013 and 2015;

c. the European Union has failed to establish that the following measures involve specific subsidies within the meaning of Articles 1 and 2 of the SCM Agreement, and has therefore failed to establish that by granting or maintaining these specific subsidies after the end of the implementation period, the United States has failed to withdraw the subsidy within the meaning of Article 7.8 of the SCM Agreement:

i. certain transactions between DOD and Boeing pursuant to pre-2007 and post-2006 DOD procurement contracts, on the grounds that, assuming *arguendo* that these measures were to involve financial contributions within the meaning of Article 1.1(a)(1) of the SCM Agreement, they do not confer a benefit on Boeing within the meaning of Article 1.1(b) of the SCM Agreement;

ii. tax exemptions and exclusions under FSC/ETI legislation and successor legislation, on the grounds that the European Union has failed to establish that Boeing actually received the FSC/ETI tax benefits after 2006, and that the measure therefore involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement;

iii. tax abatements provided through IRBs issued by the City of Wichita, on the grounds that these tax abatements are no longer specific within the meaning of Article 2.1(c) of the SCM Agreement and, as a result, the measure is no longer subject to the provisions of the SCM Agreement on actionable subsidies;

iv. South Carolina sublease of the Project Site, on the grounds that the European Union has failed to establish that the sublease involves a subsidy to Boeing;

v. South Carolina provision of Gemini and Emerald facilities and infrastructure, on the grounds that the European Union has failed to establish that these measures involve financial contributions within the meaning of Article 1.1(a)(1)(iii) of the SCM Agreement;

vi. South Carolina fee-in-lieu-of taxes arrangements set forth in the Boeing FILOT Agreement and Project Emerald FILOT Agreement, on the grounds that these arrangements are not specific within the meaning of Article 2 of the SCM Agreement;

vii. South Carolina corporate income tax credits in connection with the designation of the Project Gemini and Project Emerald portions of the Project Site as part of the same multi-county industrial park, on the grounds that the tax credits are not specific within the meaning of Article 2 of the SCM Agreement;

viii. South Carolina Income Allocation and Apportionment Agreement, on the grounds that the European Union has failed to establish that the agreement involves a financial contribution within the meaning of Article 1.1(a)(1)(ii) of the SCM Agreement; and

ix. South Carolina workforce recruitment, training and development programme, on the grounds that the programme is not specific within the meaning of Article 2 of the SCM Agreement.

Conclusions with respect to whether the United States has failed to take appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement

11.8. With respect to the European Union's claim that the United States has failed to comply with its obligation to take appropriate steps to remove the adverse effects within the meaning of Article 7.8 of the SCM Agreement, the Panel concludes as follows in Section 9 of this Report:

a. the European Union has failed to establish that the effects of certain aeronautics R&D subsidies and other subsidies are a genuine and substantial cause of significant lost sales, significant price suppression, impedance of imports to the United States market or impedance of exports to various third country markets, or threats of any of the foregoing, within the meaning of Articles 5(c) and 6.3(a), (b), and (c) of the SCM Agreement in respect of the A350XWB in the post-implementation period;

b. the European Union has failed to establish that the original adverse effects of the pre-2007 aeronautics R&D subsidies in respect of the A330 and Original A350 continue in the post-implementation period as significant price suppression of the A330 and A350XWB, significant lost sales of the A350XWB, or a threat of impedance of exports of the A350XWB in the twin-aisle LCA market, within the meaning of Articles 5(c) and 6.3(a), (b), and (c) of the SCM Agreement in the post-implementation period;

c. the European Union has established that the effects of the Washington State B&O tax rate reduction are a genuine and substantial cause of significant lost sales within the meaning of Articles 5(c) and 6.3(c) of the SCM Agreement of A320neo and A320ceo families of LCA in the single-aisle LCA market, in respect of the sales campaigns for Fly Dubai in 2014, Air Canada in 2013, and Icelandair in 2013, in the post-implementation period;

d. the European Union has established that the effects of the Washington State B&O tax rate reduction are a genuine and substantial cause of a threat of impedance of imports of the A320ceo to the United States single-aisle market, and a threat of impedance of exports of Airbus single-aisle LCA in the United Arab Emirates third country market, within the meaning of Articles 5(c) and 6.3(a) and (b) of the SCM Agreement in the post-implementation period; and

e. the European Union has failed to establish that the effects of the pre-2007 aeronautics R&D subsidies and the post-2006 subsidies are a genuine and substantial cause of significant price suppression of the A320neo or A320ceo, impedance of imports of the A320neo or A320ceo to the United States market, or displacement and impedance of exports of the A320neo or A320ceo to the third country markets of Australia, Brazil, Canada, Iceland, Indonesia, Malaysia, Mexico, Norway, Russia, and Singapore, within the meaning of Articles 5(c) and 6.3(a), (b), and (c) of the SCM Agreement, or threats of any of the foregoing, in the post-implementation period.

Conclusions with respect to whether the United States acts inconsistently with Articles 3.1 and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994

11.9. With respect to the European Union's claims under Articles 3.1 and 3.2 of the SCM Agreement and Article III:4 of the GATT 1994, the Panel concludes as follows in Section 10 of this Report:

a. to the extent that the Panel has found that the claims are within the scope of this proceeding, and that the measures at issue are subsidies within the meaning of Article 1 of the SCM Agreement, the European Union has not established that the subsidies are inconsistent with Articles 3.1(a) and 3.2 or 3.1(b) and 3.2 of the SCM Agreement; and

b. to the extent that the Panel has found that the claims are within the scope of the proceeding, the European Union has not established that the measures at issue are inconsistent with Article III:4 of the GATT 1994.

Conclusion with respect to whether the United States has complied with the DSB recommendations and rulings

11.10. In light of the foregoing, we conclude that by continuing to be in violation of Articles 5(c) and 6.3(a), (b), and (c) of the SCM Agreement, the United States has failed to comply with the DSB recommendations and rulings and, in particular, the obligation under Article 7.8 of the SCM Agreement to "take appropriate steps to remove the adverse effects or … withdraw the subsidy".

11.11. Under Article 3.8 of the DSU, in cases where there is an infringement of the obligations assumed under a covered agreement, the action is considered *prima facie* to constitute a case of nullification or impairment. We conclude that, to the extent that the measures at issue are inconsistent with the SCM Agreement, they have nullified or impaired the benefits accruing to the European Union under that Agreement.

11.12. We therefore conclude that the United States has failed to implement the DSB recommendations and rulings to bring its measures into conformity with its obligations under the SCM Agreement. To the extent that the United States has failed to comply with the DSB recommendations and rulings in the original dispute, those recommendations and rulings remain operative.

APPENDIX 1

BCI APPENDIX

Introduction

1. The parties have submitted a number of collaborative R&D agreements in this proceeding as evidence of private collaborative R&D arrangements which are alleged to serve as relevant market benchmarks for determining whether certain of the aeronautics R&D measures before the Panel confer a benefit on Boeing. In this Appendix, we set forth our evaluation of the allocation of intellectual property rights and rights resulting therefrom (i.e. licence rights) under these collaborative R&D arrangements. We discuss five separate groupings of these private collaborative R&D agreements.

2. The first comprises the **six BCI contracts** between Boeing as commissioning party, and research institutes and for-profit entities as commissioned party, that were submitted in the original proceeding (designated by the Appellate Body as Contracts A through F). These contracts were the basis for the Appellate Body's conclusion, in the context of completing the analysis, that the allocation of patent rights under the NASA procurement contracts and DOD assistance instruments was more favourable to Boeing as commissioned party than the corresponding allocations to the commissioned parties in Contracts A through F.

3. The second consists of a total of **18 private, commercial collaborative R&D agreements** submitted by the United States' and European Union's technology licensing experts. The United States' expert, Louis P. Berneman, identified six private collaborative R&D agreements, five of which were drawn from his search of the Recap database, as examples of actual, market-based arm's-length R&D collaborations in the biopharmaceutical industry.[1] The search criteria were: (a) co-development; (b) collaboration; (c) joint venture; or (d) research.[2] The sixth is a Services Agreement between Plug Power Inc. and the General Electric Company.[3] The European Union's expert, Richard A. Razgaitis, identified a further 12 private, commercial collaborative R&D agreements covering the same industry by replicating Berneman's Recap database search criteria but restricting the date range from January 2007 to September 2012. From the results, he then narrowed his focus to agreements that produced non-confidential values for R&D expenditures and which he considered were "reasonably comparable in business purpose and structure to the U.S. Government R&D contracts with Boeing that are at issue in this dispute".[4]

4. The third comprises **two private collaborative R&D agreements** identified by Mr Razgaitis in which the commissioning party is not a commercial actor, but a not-for-profit foundation (which does not have a commercial interest in the intellectual property rights resulting from the research), also in the biopharmaceutical industry and identified as part of the Recap database search.

5. The fourth is the **standard terms and conditions of the Wichita State University National Institute for Aviation Research (NIAR**) in respect of industry research collaborations in which NIAR is the commissioned party.[5]

6. The fifth is a **research and technology framework agreement between Airbus SAS and an unnamed university**, in which Airbus is the commissioning party.

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[1] Berneman explains that Recap is a commercially available subscription database which contains records of R&D collaborations, licences, and other alliances in the biopharmaceutical industry, including those between commercial firms. (Berneman Declaration, (Exhibit USA-322) (BCI), para. 18 and fn 15).

[2] Berneman explains that he additionally focused on alliances entered into when the research project was in relatively early stages, focusing on alliances classified by Recap as "discovery", "lead molecule", "formulation" or "preclinical". (Berneman Declaration, (Exhibit USA-322) (BCI), para. 18 and fn 15).

[3] Services Agreement between Plug Power Inc. and General Electric Company (17 March 2000) (Plug Power-GE Contract), (Exhibit USA-354).

[4] Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 54.

[5] NIAR is the largest university aviation R&D institution in the United States. It provides research, design, testing, and certification services to the aviation manufacturing agencies, government agencies, educational entities, and other entities. (Statement of J. Tomblin, Executive Director of the National Institute for Aviation Research, (Exhibit USA-263)).

7. In the context of our discussion of these categories of collaborative R&D agreements, we also refer to the expert opinions of both Mr Berneman and Mr Razgaitis where appropriate.

[*[6] ***[7] ***[8] ***[9] ***[10] ***[11] ***[12] ***[13] ***[14] ***[15] ***[16] ***[17] ***[18] ***[19] ***[20] ***[21] ***[22] ***[23] ***[24] ***[25] ***[26] ***[27] ***[28] ***[29] ***[30] ***[31] ***[32] ***[33] ***[34] ***[35] ***[36] ***[37] ***]**.

The 18 private, commercial collaborative R&D agreements identified by Berneman and Razgaitis

28. As previously noted, the United States' expert, Mr Berneman, and the European Union's expert, Mr Razgaitis, each discussed **[***]** as well as identifying a number of additional private, commercial collaborative R&D agreements in the biopharmaceutical industry.[38] Both

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[38] Mr Berneman identified the following six private, commercial collaborative R&D agreements: (1) Collaborative Pronet Research and Licence Agreement between Myriad Genetics, Inc. and Monsanto Company (11 November 1989) (Monsanto-Myriad Contract), (Exhibit USA-351); (2) Sponsored Research Agreement between Pfizer, Inc. and T Cell Sciences, Inc. (1 August 1989) (Pfizer-T Cell Sciences Contract), (Exhibit USA-353); (3) Collaboration Agreement between American Home Products Corporation and Athena Neurosciences, Inc. (1 April 1995) (American Home-Athena Neurosciences Contract), (Exhibit USA-355); (4) Agreement between Bayer AG and Oxford GlycoSciences (UK), Inc. (7 March 2000) (Bayer-Oxford Glyco Sciences Contract), (Exhibit USA-352); (5) Research Collaboration and Option Agreement between Emisphere Technologies, Inc. and Eli Lilly and Company (26 February 1997) (Lilly-Emisphere Contract), (Exhibit USA-356); (6) Plug Power-GE Contract, (Exhibit USA-354). Mr Razgaitis identified an additional 12: (1) License Agreement between Sangamo BioSciences, Inc. and Sigma-Aldrich Co. (10 July 2007) (Sigma-Sangamo Contract), (Exhibit USA-376); (2) Collaboration and License Agreement between Isis Pharmaceuticals, Inc. and Bristol-Myers Squibb Company (8 May 2007) (BMS-Isis Contract), (Exhibit USA-378); (3) Research Development and License Agreement between Aveo Pharmaceuticals, Inc. and Schering Corporation (23 March 2007) (Schering-Aveo Contract), (Exhibit USA-377); (4) Co-Development and Commercialization Agreement between Astellas Pharma, Inc. and Maxygen, Inc. (18 September 2008) (Astellas-Maxygen Contract), (Exhibit EU-1328); (5) License and Collaboration Agreement between Aventis Pharmaceuticals, Inc., Sanofi-Aventis Amerique du Nord and Regeneron Pharmaceuticals, Inc. (28 November 2007) (Aventis-Regeneron Contract), (Exhibit USA-497); (6) Collaborative Research and License Agreement between Archemix Corp. and Merck, KGaA (17 January 2007) (Merck-Archemix Contract), (Exhibit USA-379); (7) Collaboration and License Agreement between Synta Pharmaceuticals Corp and F. Hoffmann-La Roche, Ltd. (23 December 2008) (Roche-Synta Contract), (Exhibit USA-375); (8) Collaborative Research and License Agreement between

experts appear to agree generally that overall, these private collaborative R&D agreements reflect commissioning and commissioned parties bargaining at arm's length to reach a market-based apportionment of relevant technology and intellectual property rights as well as associated licence rights in their contracts.[39]

29. Mr Berneman opines, with respect to the six private, commercial collaborative R&D agreements that he discusses, that there is no single competitive or market outcome with respect to the intellectual property allocation terms of collaborative R&D agreements.[40] Moreover, he notes that rights to make, use and sell products covered by inventions and knowledge conceived and reduced to practice in the course of R&D collaboration (i.e. commercial use rights granted by licences) may be as important as the ownership of intellectual property. The scope of the rights granted by a licence will vary according to the R&D collaboration and the needs, wants, and situation of the parties, but can involve exclusivity, territory, duration, as well as consideration such as up-front payments and royalties. Collaborative R&D arrangements can also include provisions regarding rights to use data resulting from the collaboration internally, and potentially for future research.[41]

30. Mr Razgaitis considers, on the basis of the 12 private, collaborative R&D agreements that he identifies in which the commissioning party is a commercial actor, that the "market-typical" R&D contracting arrangements range from the commissioning party owning all of the foreground intellectual property, to a right to receive multiples of the total R&D funding level, to a combination of non-exclusive and exclusive rights to the foreground intellectual property, together in some cases with the right to sublicense to third parties in exchange for intellectual property payments such as royalties.[42]

31. Our review of the six private, commercial collaborative R&D agreements identified by Mr Berneman, and the 12 identified by Mr Razgaitis, indicates that the allocation of intellectual property rights varies from being exclusively held either by the commissioned or commissioning party, to being held by the party whose employees made the invention or jointly held in case of joint inventions. With respect to related licence rights, where the commissioning party does not already own the intellectual property rights[43], it automatically receives in the overwhelming majority of cases an exclusive, royalty-bearing licence in foreground intellectual property for commercial use purposes (typically including the right to sublicense).[44] In addition to the above, many contracts also provide for the grant of a

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Icagen, Inc. and Pfizer, Inc. (13 August 2007) (Pfizer-Icagen Contract), (Exhibit EU-1330); (9) License and Collaboration Agreement between Gilead Sciences, Inc., Gilead Sciences Limited and Tibotec Pharmaceuticals (16 July 2009) (Gilead-Tibotec Contract), (Exhibit USA-374); (10) Collaboration and License Agreement between Acadia Pharmaceuticals, Inc. and Meiji Seika Kaisha, Ltd. (24 March 2009) (Meiji-Acadia Contract), (Exhibit EU-1292); (11) Collaboration and License Agreement between Hoffman-La Roche, Inc. and Metabasis Therapeutics, Inc. (7 August 2008) (Roche-Metabasis Contract), (Exhibit EU-1331); (12) Master Laboratory Services Agreement between Intercept Pharmaceuticals and WIL Research Laboratories LLC (2 October 2007), attachment C to Razgaitis Declaration, (Exhibit EU-1262) (BCI).

[39] Berneman Declaration, (Exhibit USA-322) (BCI), para. 18; and Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 49.

[40] Berneman Declaration, (Exhibit USA-322) (BCI), para. 64.

[41] Berneman Declaration, (Exhibit USA-322) (BCI), paras. 10-17.

[42] Razgaitis Declaration, (Exhibit EU-1262) (BCI), para. 61.

[43] That is all 18 contracts discussed in this Section except the Intercept Pharmaceuticals-WIL Contract (Razgaitis Declaration, (Exhibit EU-1262) (BCI), attachment c), in which the commissioning party owns all collected data, discoveries, inventions and improvements arising from any commissioned research and the commissioned party retains only its background intellectual property rights related to testing methods, practices, and procedures. (Ibid. section 8(a)).

[44] Gilead-Tibotec Contract, (Exhibit USA-374), section 9.1(a) – commissioning party automatically receives co-exclusive, royalty-free licence to commercialize combination product, and exclusive, royalty-free licence to exploit certain other products; Pfizer-T Cell Sciences Contract, (Exhibit USA-353), Exclusive patent licence agreement, pdf p. 38, section 2, and Exclusive technology licence agreement, pdf p. 62, section 2; Plug Power-GE Contract, (Exhibit USA-354), section 4(b); Sigma-Sangamo Contract, (Exhibit USA-376), section 2; Bayer-Oxford Glyco Sciences Contract, (Exhibit USA-352), section 3.1; BMS-Isis Contract, (Exhibit USA-378), sections 2.1 and 5.4; Schering-Aveo Contract, (Exhibit USA-377), section 6.1; Merck-Archemix Contract, (Exhibit USA-379), sections 7.2 and 7.1.1; Roche-Synta Contract, (Exhibit USA-375), section 6.2; Pfizer-Icagen Contract, (Exhibit EU-1330), section 3.4; Astellas-Maxygen Contract, (Exhibit EU-1328), section 9.1.3; Aventis-Regeneron Contract, (Exhibit USA-497), sections 4.1 and 4.3; Meiji-Acadia Contract, (Exhibit EU-1292), section 4.1(a); Roche-Metabasis Contract, (Exhibit EU-1331), section 4.2; and Monsanto-Myriad Contract, (Exhibit USA-351), sections 3.3 and 2.3(b) – option to gain exclusive, royalty-bearing,

non-exclusive, royalty free licence in relevant intellectual property for research and development purposes. The few contracts that do not mandate the automatic grant of such licences include, at minimum, an option to negotiate for an exclusive licence[45], and/or a right of first refusal to such a licence.[46]

32. In other words, regardless of the allocation of ownership over inventions arising from collaborative R&D, the overwhelming majority of the 18 private, commercial collaborative R&D agreements identified by Messrs Berneman and Razgaitis grant the commissioning party the exclusive right to commercialize foreground intellectual property, and conversely exclude the commissioned party from commercially exploiting such intellectual property. **[***]**.

33. The United States also notes that certain of the private, commercial collaborative R&D agreements identified by Mr Razgaitis contain significant field of use restrictions on the commissioning party's ability to commercialize the foreground intellectual property.[47] According to the United States, this demonstrates that commercial commissioning parties sometimes face more significant limitations on the use of their licences than does the U.S. Government under the NASA and DOD contracts and agreements at issue in this proceeding. As Mr Razgaitis observes in response, field of use and territorial limitations represent the primary commercial opportunity that the commissioning party (and licensee) anticipates, given the subject R&D and its business capabilities and priorities. As the vast majority of the 18 contracts under review demonstrate, field of use and territorial limitations appear to be typical in technology licences, and are the result of negotiation between the parties.[48] Despite the inclusion of such limitations, we observe that, unlike for the government use licences retained by NASA and DOD, in the vast majority of the private, commercial collaborative R&D agreements before us, the commissioned party's capability of commercially exploiting an invention will be considerably affected by the fact that the commissioning party usually obtains either the patent or an exclusive licence or, at minimum, an option to negotiate an exclusive licence to the foreground intellectual property that allows for its commercial exploitation by the commissioning party in a given field and territory.

Collaborative R&D agreements involving non-commercial actors

34. Among the examples of collaborative R&D agreements from the biopharmaceutical industry identified by Mr Razgaitis are two in which the commissioning parties are non-commercial entities. We discuss these separately from those discussed in the preceding subsection of this Appendix because the commissioning parties are pursuing public interest-motivated objectives in commissioning the research without themselves being engaged in the commercialization of any resulting invention.

35. The first is an agreement between a limited liability company[49] formed by a not-for-profit foundation as the commissioning party, in which a commissioned party is engaged to develop a pharmaceutical treatment for a medical condition.[50] The commissioning party is not granted ownership of any intellectual property rights or licence rights. However, in the event that the

worldwide, commercial use licence is subject to exercise of option by commissioning party and to payment of pre-determined licence fees.

[45] American Home-Athena Neurosciences Contract, (Exhibit USA-355) – the option to acquire exclusive, royalty-bearing, worldwide, commercial use licence is subject to parties negotiating any undefined terms in good faith (section 6); and Lilly-Emisphere Contract, (Exhibit USA-356) – the option to acquire an exclusive, worldwide, commercial use licence appears to be subject to terms set out in a "Form of License Agreement" in Exhibit B to the agreement, not included as evidence in this proceeding (section 2.1).

[46] American Home-Athena Neurosciences Contract, (Exhibit USA-355), section 6(k); and Lilly-Emisphere Contract, (Exhibit USA-356), section 3.

[47] United States' response to Panel question No. 27, paras. 108-112. The United States refers to eight of the private collaborative R&D agreements identified by Mr Razgaitis that appear to contain field of use limitations: (1) Meiji-Acadia Contract, (Exhibit EU-1292); (2) Roche-Metabasis Contract, (Exhibit EU-1331); (3) Gilead-Tibotec Contract, (Exhibit USA-374); (4) Roche-Synta Contract, (Exhibit USA-375); (5) Sigma-Sangamo Contract, (Exhibit USA-376); (6) Schering-Aveo Contract, (Exhibit USA-377); (7) BMS-Isis Contract, (Exhibit USA-378); and (8) Merck-Archemix Contract, (Exhibit USA-379).

[48] Razgaitis Declaration, (Exhibit EU-1262), (BCI) paras. 28 and 81.

[49] A limited liability company, or LLC, is a business entity that is a U.S.-specific form of private limited company, which is generally treated as a pass-through entity for federal income tax purposes.

[50] Sponsored Research Collaboration Agreement between Dart Therapeutics, LLC, and CombinatorX, Inc. (11 November 2007), attachment B to Razgaitis Declaration, (Exhibit EU-1262) (BCI).

commissioned party sells or licences a product resulting from the research, it must repay the R&D funds it received to the commissioning party. In addition, the commissioned party is obligated to make certain milestone payments at periodic intervals from its commercial sales. Should the commissioned party decide to discontinue the development of any candidate drug without licensing its rights to a third party, the commissioning party may exercise its rights to be granted an exclusive, sublicensable fully paid licence in all intellectual property rights to develop, make, use and sell the discontinued drug candidate.[51]

36. The second is a sponsored research agreement involving the same not-for-profit foundation, this time as the commissioning party itself. Under this agreement, the commissioning party again sponsors a commissioned party to search for a cure for a particular medical condition. The agreement entitles the commissioning party to be repaid the R&D funds it expended in sponsoring the research in the event that the commissioned party successfully commercializes the foreground intellectual property.[52] In addition, should the commissioned party abandon its commercialization efforts for reasons other than safety or efficacy, the commissioning party is entitled to obtain an exclusive licence to the foreground and background intellectual property and licence such rights on a royalty-bearing basis to third parties, subject to royalty-sharing with the commissioned party.[53]

37. Both of these agreements, while involving the same not-for-profit foundation as commissioning party, nevertheless provide some evidence that a commissioning party that is acting for public interest reasons and that: (a) does not itself have a commercial use for the foreground intellectual property; and (b) does not itself have a direct interest in commercializing the results of the research for a commercial purpose, will still seek to include a provision that enables it to recover the funding that it provided. It will also retain an option to an exclusive, fully paid licence in order to enable the commercialization of the products resulting from the research collaboration. This puts the commissioning party in collaborative R&D agreements involving non-commercial actors in a more favourable position from that of the commissioning party in the NASA procurement contracts and DOD assistance instruments, as the commissioning party in the former ensures a reimbursement of its investment in case of successful commercialisation of inventions resulting from the R&D, as well as an option to an exclusive, fully paid licence to any intellectual property resulting from the R&D, should the commissioned party decide to discontinue the project.

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[51] Sponsored Research Agreement Dart LLC-CombinatorX Inc, Attachment B to Razgaitis Declaration, (Exhibit EU-1262) (BCI), article 7.

[52] Sponsored Research Agreement between Avi Biopharma Inc. and Charley's Fund, Inc. (12 October 2007), (Exhibit EU-1332), article 4.3.

[53] Sponsored Research Agreement between Avi Biopharma Inc. and Charley's Fund, Inc. (12 October 2007), (Exhibit EU-1332), article 9.1.

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APPENDIX 2

HSBI APPENDIX

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