

INTERNATIONAL CENTRE FOR SETTLEMENT OF INVESTMENT DISPUTES
WASHINGTON, D.C.

In the arbitration proceedings between

NIKO RESOURCES (BANGLADESH) LTD.
(Claimant)

and

BANGLADESH PETROLEUM EXPLORATION & PRODUCTION COMPANY LIMITED
(“BAPEX”)

(Second Respondent)

BANGLADESH OIL GAS AND MINERAL CORPORATION (“PETROBANGLA”)

(Third Respondent)

(jointly referred to as Respondents)

ICSID Case No. ARB/10/11

and

ICSID Case No. ARB/10/18

DECISION ON HEADS OF RECOVERABLE LOSS

Members of the Tribunal

Mr Michael E. Schneider, President
Professor Campbell A. McLachlan QC
Professor Jan Paulsson

Secretary of the Tribunal

Ms Frauke Nitschke

Date of Decision: 18 May 2021

TABLE OF CONTENTS

GLOSSARY AND ABBREVIATIONS.....	vi
1. INTRODUCTION.....	1
2. THE PARTIES AND THE ARBITRAL TRIBUNAL.....	3
2.1 The Claimant	3
2.2 The Respondents	4
2.3 The Arbitral Tribunal.....	6
3. THE PROCEEDINGS LEADING TO THE PRESENT DECISION.....	8
3.1 Summary of the procedure leading to the Decision on Liability	8
3.2 The proceedings from the Decision on Liability to the present decision.....	19
4. THE RELIEF REQUESTED.....	33
4.1 The Claimant	33
4.2 The Respondents	35
5. SUMMARY OF THE RELEVANT FACTS	37
6. THE SCOPE OF THE PRESENT DECISION	51
7. CRITERIA FOR DISTINGUISHING RECOVERABLE FROM EXCLUDED LOSSES.....	55
7.1 Determinations in the Decision on Liability	55
7.2 The Parties’ subsequent argument.....	60
7.3 The Tribunal’s conclusions.....	67
8. THE FIRST HEAD OF LOSS: ESCAPED GAS DUE TO THE BLOWOUT OF THE CHATTAK 2 WELL (THE “BLOWOUT GAS”)	74
8.1 The first period: from the first blowout of the Chattak 2 Well on 7 January 2005 until the second blowout of the Chattak 2A relief well on 24 June 2005.....	75

8.2	The second period: from the second blowout on 24 June 2005 until the completion of the Chattak 2B relief well on 9 October 2005	76
8.3	Third period from the completion of the Chattak 2B relief well on 9 October 2005 until today	82
8.3.1	The dispute about the successful completion of the Chattak 2B relief operation	82
8.3.2	Responsibility for any continuing seepages following the completion of the Chattak 2B relief operation.....	84
8.4	The loss of the Government due to the Blowout Gas.....	88
8.4.1	The context of the Government’s claim in this arbitration.	88
8.4.2	The legal basis for BAPEX’s claim concerning the Government’s losses	90
8.4.3	Is the Government’s loss recoverable?	95
9.	THE SECOND HEAD OF LOSS: LOSS OF PRODUCTION DUE TO DAMAGE TO THE OVERBURDEN AND DRILLING HAZARDS CAUSED BY THE CHATTAK 2 WELL BLOWOUT	101
9.1	The alleged causes for the loss of the gas from Sands 1 and 2	102
9.1.1	Layers of shale trapping pockets of gas in the area above the Upper Marine Shale	103
9.1.2	Geotechnical damage to the area above the Upper Marine Shale	111
9.1.3	The consequences of the drilling hazards	112
9.1.4	The Claimant’s response concerning the alleged causes for the loss of the gas from Sands 1 and 2.....	114
9.1.5	The Tribunal’s position	115
9.2	Is the alleged loss of the gas remaining in Sands 1 and 2 recoverable?	116
9.2.1	Did the claimed loss arise naturally in the usual course of things from the breach?	116
9.2.2	Did the Parties know, when concluding the JVA, that Niko’s breach of its duties as Operator would likely cause the loss of the gas remaining in Sands 1 and 2?.....	120

10. THE THIRD HEAD OF LOSS: ENVIRONMENTAL LOSS CAUSED BY THE CHATTAK 2 WELL BLOWOUT	123
10.1 Tengratila and the blowouts	123
10.2 The reports on environmental losses	137
10.2.1 The Governmental Committees and their reports	138
10.2.2 Other contemporaneous reports	160
10.2.3 Expert reports in the arbitration.....	162
10.3 Identifying the claims for environmental losses	175
10.4 Determining compensable environmental losses	186
10.4.1 The issues and the Parties’ position in general.....	186
10.4.2 Gas seepages	190
10.4.3 Arsenic contamination	192
10.4.4 Mr Wilson’s projects of abatement and mitigation.....	197
10.5 Is the Government entitled to claim for the recoverable environmental losses?	199
10.5.1 The issues.....	199
10.5.2 Loss concerning the State as such.....	201
10.5.3 Claims for remedial action.....	205
10.5.4 Claims for individuals having suffered losses.....	207
10.6 The Claim concerning monitoring and surveying and the related procedural requests	209
10.6.1 The claim and the Parties’ positions in general	209
10.6.2 The claim for advance payment by Niko.....	213
10.6.3 The Claim for the suspension of the procedure	217
11. THE PRE-AWARD INTEREST	224
12. THE CLAIMANT’S SET-OFF CLAIM.....	225
12.1 The Parties’ positions and the issues to be decided	225
12.2 Is the set-off Claim admissible in these proceedings?	227
12.3 Is the damages claim time barred?	231
12.3.1 The issue to which the time-bar applies.....	232
12.3.2 The law applicable to time bar with respect to the “legally recoverable” claim.....	234

12.3.3 Application of the rules on limitation	240
13. THE DECISION	246
13.1 Concerning the First Head of Loss.....	246
13.2 Concerning the Second Head of Loss.....	247
13.3 Concerning the Third Head of Loss.....	247
13.4 Pre-Award Interest	248
13.5 The Claimant’s Set-Off Claim	248
13.6 Procedural Issues	248
13.7 Costs of the proceedings on the Compensation Declaration..	248

GLOSSARY AND ABBREVIATIONS

<i>Abel Report</i>	<i>Expert Report by L. William Abel, PE, 8 June 2015</i>
<i>Adams Report</i>	<i>Expert Report by Dr Neal Adams, 31 August 2015</i>
<i>Amendment</i>	<i>BAPEX’s Amendment to Memorial on Damages, 7 September 2020</i>
<i>API</i>	<i>American Petroleum Institute</i>
<i>API-RP</i>	<i>API Recommended Practice</i>
<i>BAPEX</i>	<i>Bangladesh Petroleum Exploration & Production Company Limited, the Second Respondent</i>
<i>bbl</i>	<i>Barrel (42 US gallons)</i>
<i>B-CD.1</i>	<i>BAPEX’s Counter-Memorial Concerning the Compensation Declaration, 30 January 2014</i>
<i>B-CD.2</i>	<i>BAPEX’s Rejoinder Concerning the Compensation Declaration, 25 September 2014</i>
<i>B-CD.3</i>	<i>BAPEX’s Comments on the Reports of the Tribunal Experts</i>
<i>B-CD.4</i>	<i>BAPEX’s Request for Leave to Submit One Additional Pleading and Counterclaims, 25 September 2015</i>
<i>B-CD.5</i>	<i>BAPEX responsive Comments on the Tribunal-Appointed Expert Reports, 30 September 2015</i>
<i>B-CD.6</i>	<i>BAPEX Submission concerning the Full Scope of Liability approach and related issues, 6 October 2015 (first letter)</i>
<i>B-CD.7</i>	<i>BAPEX Submission concerning the November 2015 Hearing, 6 October 2015 (second letter)</i>
<i>B-CD.8</i>	<i>BAPEX Submission identifying additional obligations and breaches by the Claimant, 12 October 2015</i>
<i>B-CD.9</i>	<i>BAPEX’s Submission on Various Procedural and Legal Issues, 19 October 2015</i>
<i>B-CD/PM</i>	<i>BAPEX’s Request for Provisional Measures, 13 August 2015</i>
<i>Bcf</i>	<i>Billion cubic feet</i>
<i>BDT</i>	<i>Bangladeshi taka</i>
<i>Betton et al Expert Report</i>	<i>Expert report by Clifford Ian Betton, Professor Paul Leinster and Dr Ian Borthwick, presented by the Respondents with the Memorial on Damages</i>

<i>BGSL</i>	<i>Bakhrabad Gas System Ltd.</i>
<i>BHA</i>	<i>Bottom Hole Assembly</i>
<i>Blowout</i>	<i>Uncontrolled flow of well fluids (including gas) or formation fluids from the wellbore; the blowouts in the present case occurred in the Chattak field on 7 January and 24 June 2015</i>
<i>Blowout gas</i>	<i>Gas that escaped from the Chattak 2 well as part of the first blowout (see Section 8)</i>
<i>BMD</i>	<i>BAPEX Memorial on Damages, 25 March 2016</i>
<i>BOP</i>	<i>Blowout preventer</i>
<i>C-CD.1</i>	<i>Niko’s Memorial concerning the Compensation Declaration, 27 September 2013</i>
<i>C-CD.2</i>	<i>Niko’s Reply concerning the Compensation Declaration, 29 May 2014, also referred to as Niko’s Reply</i>
<i>C-CD.3</i>	<i>Niko’s Comments on the Tribunals Experts’ Reports Concerning the Compensation Declaration, 31 August 2015</i>
<i>C-CD.4</i>	<i>Niko’s Comments on BAPEX’s Comments on the Reports of the Tribunal Experts Concerning the Compensation Declaration, 30 September 2015</i>
<i>C-CD.5</i>	<i>Niko’s Submission concerning the Full Scope of Liability approach and related procedural issues, 5 October 2015</i>
<i>C-CD.6</i>	<i>Niko’s Defence in Principle to New Allegations Raised by BAPEX’s Expert, 9 October 2015</i>
<i>C-CD.7</i>	<i>Niko’s Submission on Newly Alleged Breaches, 23 October 2015</i>
<i>C-CD/PM</i>	<i>Niko’s Opposition to BAPEX’s Request for Provisional Measures in the Counterclaim Declaration, 21 August 2015</i>
<i>C-MJ.1</i>	<i>Claimant’s Memorial on Jurisdiction, 1 April 2011</i>
<i>C-MJ.2</i>	<i>Claimant’s Second Memorial on Jurisdiction, described as Claimant’s Response to the Respondents’ First Counter-Memorial on Jurisdiction for the Payment Claim, and the Claimant’s Memorial on Jurisdiction for the Compensation Claim, 30 June 2011</i>
<i>C-MJ.3</i>	<i>Reply to the Respondents’ Response with respect to the Compensation Declaration, 10 October 2011</i>
<i>C-PHB</i>	<i>Claimant’s Post Hearing Brief, 22 January 2016</i>
<i>Centre or ICSID</i>	<i>International Centre for Settlement of Investment Disputes</i>

<i>Chattak field</i>	<i>One of the gas fields to which the JVA relates (see below Section 8.2.2)</i>
<i>CMD</i>	<i>Niko’s Counter-Memorial on Damages, 7 September 2020</i>
<i>Commerciality Report</i>	<i>Niko’s assessment of the commercial viability of further development of the Chattak field, submitted to BAPEX on 1 July 2007 (Exhibit C-072)</i>
<i>Compensation Claims</i>	<i>Claims for compensation brought in the Money Suit</i>
<i>Compensation Declaration</i>	<i>The declaration requested by the Claimant concerning the Compensation Claims</i>
<i>Contract Act</i>	<i>Bangladesh Contract Act 1872 (Exhibit CLA-004)</i>
<i>Convention or ICSID Convention</i>	<i>Convention on the Settlement of Investment Disputes between States and Nationals of Other States</i>
<i>Corruption Claim</i>	<i>Claim filed by BAPEX and Petrobangla on 25 March 2016 and decided by a decision of this Tribunal on 25 February 2019</i>
<i>CPTDC</i>	<i>China Petroleum Technology and Development Corporation, the Drilling Contractor engaged by Niko</i>
<i>Crore</i>	<i>10 million in the South Asian numbering system</i>
<i>DoE</i>	<i>Department of Environment in the Ministry of Environment and Forest, Bangladesh</i>
<i>EIA</i>	<i>Environmental Impact Assessment</i>
<i>EQS</i>	<i>Environmental Quality Standards</i>
<i>EMW</i>	<i>Equivalent Mud Weight</i>
<i>Exclusivity Decision</i>	<i>Decision pertaining to the exclusivity of the Tribunal’s jurisdiction, 19 July 2016</i>
<i>February 2016 Hearing</i>	<i>Hearing on Liability (held on 21-22 February 2016 in Paris)</i>
<i>Fekete Report</i>	<i>Assessment of Lost Gas Boka Bil Sand 1&2 reservoir due to Loss of Control Incidents Well Chattak 2 & Chattak 2A, Chattak West Field, Bangladesh, prepared by Fekete Associates Inc, Calgary, 8 December 2006 (Exhibit C-070)</i>
<i>Feni field</i>	<i>One of the gas fields to which the JVA relates</i>
<i>ft</i>	<i>Feet</i>
<i>GWC</i>	<i>Report of an Enquiry Committee on Blowout of Well Chattak No 2 on 7 January 2005, dated 7 February 2005 (Exhibit R-3)</i>
<i>First Enquiry Report</i>	
<i>First Environmental Loss Report</i>	<i>Report of the Committee for Estimation of Environmental and Forestry Losses caused by the fire</i>

	<i>created in Tengratila Gas Field in Sunamganj, 17 January 2005 (Exhibit R-1, and attachment to Exhibit R-Annex 2(bis), see Section 10.2.1)</i>
<i>Framework of Understanding (FoU)</i>	<i>Framework of Understanding for the Study for Development and Production of Hydrocarbon from the Non-producing Marginal Gas Fields of Chattak, Feni and Kamta executed on 23 August 1999 between BAPEX and Niko (attached to the JVA)</i>
<i>GOB or Government</i>	<i>The Government of the People’s Republic of Bangladesh, the First Respondent until the Decision on Jurisdiction</i>
<i>GPSA</i>	<i>Gas Purchase and Sale Agreement of 27 December 2006 between Petrobangla and the Joint Venture Partners BAPEX and Niko</i>
<i>GSM</i>	<i>GSM Consulting Petroleum Engineers, of Robert Grace</i>
<i>GWC</i>	<i>Gas Water Contact</i>
<i>HSE</i>	<i>Health, Safety, Environment</i>
<i>Hearing</i>	<i>The November 2020 Hearing</i>
<i>Hughes I and Hughes II</i>	<i>Expert reports by Jeffrey Hughes of 23 March 2016 and 19 August 2020, presented by the Respondents</i>
<i>HT</i>	<i>Hearing Transcript of the November 2020 Hearing, day; page references are to the corrected version of the transcript</i>
<i>ICSID Arbitration Rules</i>	<i>Rules of Procedure for Arbitration Proceedings</i>
<i>IWCF</i>	<i>International Well Control Forum</i>
<i>JMC</i>	<i>Joint Management Committee (JVA Article 6)</i>
<i>IPR</i>	<i>Inflow Performance Relationship</i>
<i>Joint Venture Partners</i>	<i>BAPEX and Niko</i>
<i>JVA</i>	<i>Joint Venture Agreement between BAPEX and Niko, dated 16 October 2003 (Exhibit C-1)</i>
<i>KT</i>	<i>Kick Tolerance</i>
<i>LEL</i>	<i>Lower Explosive Limit</i>
<i>LOT</i>	<i>Leak Off Test</i>
<i>Marine Shale</i>	<i>See Upper Marine Shale</i>
<i>MD</i>	<i>Measured Depth</i>
<i>MFE</i>	<i>Marginal Field Evaluation (Annex B to JVA)</i>
<i>MGS</i>	<i>Mud Gas Separator</i>

<i>Ministry</i>	<i>Ministry of Power, Energy and Mineral Resources, unless otherwise specified</i>
<i>Money Suit</i>	<i>Proceedings brought by GOB and Petrobangla in the Court of the District Judge in Dhaka against Niko and others (see below Section 5, in fine, with further reference and Exhibit C-006)</i>
<i>Moulavi Bazar</i>	<i>(also Maguchora) an exploration well drilled by Occidental Petroleum in the Sylhet area</i>
<i>Niko, Niko Bangladesh or NRBL</i>	<i>Niko Resources (Bangladesh) Ltd., the Claimant</i>
<i>Niko Canada</i>	<i>Niko Resources Ltd., the Canadian parent company of the Claimant</i>
<i>November 2015 Hearing</i>	<i>Hearing on Liability that took place 2-7 November 2015</i>
<i>November 2020 Hearing</i>	<i>Hearing on Heads of Loss, held by video-conference on 19 and 20 November 2020.</i>
<i>ONGC Manual</i>	<i>Well Control Training Manual of the Well Control School at the Institute of Drilling and Technology, Oil and Natural Gas Corporation Limited, Dehradun, India</i>
<i>Operator</i>	<i>Niko's function under the JVA</i>
<i>Overburden</i>	<i>Stratum below the surface and above the Upper Marine Shale in the Chattak field</i>
<i>Payment Claims</i>	<i>Claims to payment under the GPSA for gas delivered (subject matter of ARB/ 10/ 18)</i>
<i>Petrobangla</i>	<i>Bangladesh Oil Gas and Mineral Corporation, the Third Respondent</i>
<i>Petroleum</i>	<i>Any naturally occurring hydrocarbon, whether in gaseous, liquid or solid state, or mixtures thereof (JVA Article 1.46)</i>
<i>Petroleum Operations</i>	<i>Operations of Development and Production and all other operations pertaining to Petroleum as provided in the JVA (JVA Article 1.47)</i>
<i>The Procedure</i>	<i>Procedure for Development of Marginal/ Abandoned Gas Fields, prepared in 2001 and attached as to the JVA as Annex C</i>
<i>ppg</i>	<i>Pounds per Gallon</i>
<i>PSC</i>	<i>Production Sharing Contract</i>
<i>psi</i>	<i>Pounds per Square Inch</i>
<i>psi/ft</i>	<i>Pressure per foot (gradient)</i>

<i>R-CMJ.1</i>	<i>Respondents' Counter-Memorial on Jurisdiction, 16 May 2011</i>
<i>R-CMJ.2</i>	<i>Supplemental Counter-Memorial, described as Respondents' Response to the Claimant's Presentation of its Position with respect to the Request for the Compensation Declaration, 28 September 2011</i>
<i>R-PHB</i>	<i>BAPEX's Post-Hearing Brief, 22 January 2016</i>
<i>Regional Shale Reservoir</i>	<i>See Upper Marine Shale Sands 1 and 2 from where gas escaped following the blowouts</i>
<i>RfA I</i>	<i>Request for Arbitration, dated 1 April 2010 and received by the Centre on 12 April 2010 (ARB/10/11)</i>
<i>RfA I Clarification</i>	<i>Claimant's response of 18 May 2010 to the Centre's request for clarification of 7 May 2010</i>
<i>RfA II</i>	<i>Request for Arbitration, dated 16 June 2010 and received by the Centre on 23 June 2010 (ARB/10/18)</i>
<i>R-Preliminary Objections</i>	<i>Preliminary objections raised by the Respondents in the letter of 21 June 2010 (ARB/10/11)</i>
<i>R-RJ</i>	<i>Respondents' Rejoinder on Jurisdiction for the Payment Claim, 30 August 2011</i>
<i>Sand</i>	<i>Porous and permeable stratum capable of producing Petroleum, considered a unit with respect to exploitation (JVA definition of Reservoir in Article 1.53)</i>
<i>Spud date</i>	<i>Date of start of drilling</i>
<i>TD</i>	<i>Target Depth</i>
<i>Tengratila</i>	<i>Village in the Sylhet area, neighbouring the Chattak 1 and 2 wells</i>
<i>THE</i>	<i>Exhibit produced at the Tribunal's initiative November 2015 Hearing</i>
<i>Third Environmental Losses Report</i>	<i>Report of the Committee formed to estimate the amount of environmental losses due to the second blowout in Chattak Gas Field (Tengratila) of Doarabazar Sub-District of Sunamganj District, 15 September 2005 (Exhibit R-Annex 5(bis), see Section 10.2.1)</i>
<i>Tk</i>	<i>Bangladeshi taka (also BDT)</i>
<i>Tribunal</i>	<i>Collectively, the two Arbitral Tribunals constituted in ICSID Case No. ARB/10/11 and ICSID Case No. ARB/10/18</i>
<i>TVD</i>	<i>Total Vertical Depth</i>

<i>Upper Marine Shale</i>	<i>Impermeable sedimentary rock, retaining the gas from Sands 1 & 2 in the Chattak field; also referred to as Regional Shale (or Seal)</i>
<i>VOC</i>	<i>Volatile Organic Compound</i>
<i>Wilson I and Wilson II</i>	<i>Expert reports by Mr Stephen A. Wilson, dated 23 March 2016 and 3 September 2020, respectively, presented by the Respondents</i>
<i>Wright 1</i>	<i>Expert Report by John Wright, PE, 29 May 2014</i>
<i>Wright 2</i>	<i>Supplemental Report by John Wright, PE, 23 October 2015</i>

1. INTRODUCTION

1. This is the eighth decision by the two Tribunals, referred to as “**the Tribunal**”, in the two proceedings brought by Niko Resources (Bangladesh) Ltd. (**Niko**), the Claimant, against the Bangladesh Petroleum & Production Company, Limited (**BAPEX**), the Second Respondent, and Bangladesh Oil Gas and Mineral Corporation, the Third Respondent (**Petrobangla**), the two being referred to as “the Respondents” (the two proceedings being referred to hereinafter as the **arbitration**); with respect to the First Respondent, the Government of the People’s Republic of Bangladesh (the **Government** or **GOB**), the Tribunal decided that it did not have jurisdiction.
2. The proceedings relate to a Joint Venture Agreement for the Development and Production of Petroleum from the Marginal/Abandoned Chattak and Feni Fields of 16 October 2003 between BAPEX and Niko (the **JVA**) and a Gas Purchase and Sale Agreement for gas from the Feni Field of 27 December 2008 between the Niko/BAPEX Joint Venture and Petrobangla (the **GPSA**).
3. The proceedings concerning the JVA relate to two blowouts in the Chattak field. The Government and Petrobangla initiated on 27 May 2008 in the Court of the District Judge in Dhaka proceedings against several parties, including Niko, claiming compensation for the damage resulting from these blow-outs (the **Money Suit**). In the present ICSID arbitration the Claimant seeks, among other relief, a declaration that it was not liable for damages in relation to the two blowouts and, in case liability were found, the determination of the amount of that liability (the **Compensation Declaration**).
4. The Tribunal decided that it had jurisdiction to decide these issues (Decision on Jurisdiction of 19 August 2013) and that this jurisdiction was exclusive (confirmed in the Decision on the Exclusivity of its Jurisdiction of 19 July 2016). The exclusive jurisdiction applied also to the claims in the Money Suit.
5. The proceedings on the Compensation Declaration were suspended by an application by which the Respondents requested the Tribunal, inter alia, to declare the JVA void on grounds of corruption (the **Corruption Claim**). Once this request had been rejected by the Tribunal’s Decision on the

Corruption Claim of 25 February 2019, the proceedings on the Compensation Declaration resumed.

6. In its **Decision on Liability** of 28 February 2020 (the seventh decision), the Tribunal held that Niko had breached its obligations under the JVA and was liable for the blowout that occurred on 7 January 2005 during Niko's drilling in the Chattak field. The Tribunal found that Niko was not liable for a second blowout that occurred on 24 June 2005 during the drilling of the first relief well that was intended to extinguish the first blowout.
7. Following that decision, the Tribunal fixed in consultation with the Parties the continuation of the proceedings on damages. As the consultations with the Parties revealed, a full evidentiary hearing on damages could not be held before mid-2021; the Tribunal decided therefore to hear and decide, in advance of the evidentiary hearing and to the extent this is possible prior to that evidentiary hearing, legal issues concerning the heads of loss for which Niko is liable under the law of Bangladesh and the JVA.
8. The Parties filed further written submissions in the fall of 2020 and, at a hearing on 19 and 20 November 2020 (the **Hearing** or **November 2020 Hearing**), presented oral argument. The Tribunal now renders its decision on the heads of recoverable loss.

2. THE PARTIES AND THE ARBITRAL TRIBUNAL

2.1 The Claimant

9. The Claimant in both cases is Niko Resources (Bangladesh) Ltd. It is a company incorporated under the laws of Barbados. The Claimant and its nationality were discussed in Section 5 of the Decision on Jurisdiction.

10. Since August 2013, the Claimant is represented in these arbitrations by

Mr Barton Legum
Dentons Europe LLP
5, boulevard Malesherbes
75008 Paris
France

and

Mr Gordon Tarnowsky, Q.C., Ms Rachel Howie, Mr David
Konkin, and Mr Anthony Cole
Dentons Canada LLP
850 – 2nd Street SW
15th Floor, Bankers Court
Calgary, Alberta T2P 0R8
Canada

and

Mr Rokanuddin Mahmud and Mr Mustafizur Rahman Khan
Delta Dahlia (level 8)
36, Kamal Ataturk Avenue
Banani, Dhaka 1213
People's Republic of Bangladesh

During the initial phase of the proceedings up to the Decision on Jurisdiction, the Claimant was represented by

Mr Kenneth J. Warren QC, Mr James T. Eamon QC, Mr John R. Cusano
and Ms Erin Runnalls

Gowlings
1400,700 - 2nd Street S.W.
Calgary, Alberta
Canada T2P 4V5

and

Mr Ajmalul Hossain QC
A. Hossain & Associates
3B Outer Circular Road
Maghbazar, Dhaka 1217
People's Republic of Bangladesh

2.2 The Respondents

11. The Respondents remaining in these arbitrations are
 - (i) Bangladesh Petroleum Exploration & Production Company Limited (“BAPEX”), the Second Respondent
and
 - (ii) Bangladesh Oil Gas and Mineral Corporation (“Petrobangla”), the Third Respondent.¹
12. Petrobangla is a statutory corporation created by the Bangladesh Oil, Gas and Mineral Corporation Ordinance 1985.²
13. BAPEX is a wholly owned subsidiary of Petrobangla incorporated under the Bangladesh Companies Act 1994.³ By Notification issued on 8 June 2003 the Ministry of Power, Energy and Mineral Resources granted to BAPEX “complete administrative and financial freedom by the Government”.⁴
14. The legal status of these two corporations and their relationship with the Government of Bangladesh was discussed in Sections 6 and 7 of the Decision on Jurisdiction.

¹ The sequence in which the three Respondents are presented is that adopted by the Claimant in the First Request, even though a different sequence was adopted in the Second Request.

² Request for Arbitration, dated 16 June 2010 (RfA II), Attachment G.

³ Hearing on Jurisdiction, HT 2011.10.13 (Day 1), page 42.

⁴ Exhibit 2, Appendix B to Respondents' Counter-Memorial on Jurisdiction, 16 May 2011 (R-CMJ.1).

15. While the Joint Venture partner of Niko is BAPEX and the case concerning liability essentially has been argued in the name of that company, the Tribunal continues to refer jointly to the Respondents, except where a specific identification of BAPEX appeared necessary.

16. The Respondents are represented in the arbitration by:

Mr A B M Abdul Fattah and Mr Syed Ashfaquzzaman
Petrobangla
Petrocentre
3 Kawran Bazar C/A
Dhaka 1215, GPO Box 849
People's Republic of Bangladesh

and

Mr Mohammad Ali
BAPEX
Level-6, BAPEX Bhabon
4 Kawran Bazar C/A
Dhaka 1215
People's Republic of Bangladesh

and

Mr Paul S. Reichler, Mr Derek C. Smith, and Ms Tafadzwa Pasipanodya
Foley Hoag LLP
1717 K Street NW
Washington, DC 20036
United States of America

and

Mr Moin Ghani
Barrister-at-law
Alliance Laws
Suite 6A (Level 5), Paradise Lake View Nibash
Ba-73/1 Gulshan-Hatirjheel Lake Drive Road
Dhaka 1212 People's Republic of Bangladesh

and

Mr Imtiaz U Ahmad Asif
Aequitas Chambers
Suite 5B House 1 Road 27
Banani Block K
Dhaka 1212 People's Republic of Bangladesh

17. Between June and July 2015, the Respondents' external counsel were:

Mr Kay Kian Tan
Watson Farley & Williams (Thailand) Limited
Unit 902, 9th Floor
GPF Witthayu Tower B
93/1 Wireless Road
Patumwan,
10330 Bangkok
Thailand

18. Between 2011 and June 2015, the Respondents were represented in these proceedings by

Mr Luis Gonzalez Garcia and Ms Alison Macdonald
Matrix Chambers, Griffin Building, Gray's Inn
London WC1R 5LN
United Kingdom

19. Between 2011 and December 2014, the Respondents were also represented in these proceedings by

Mr Tawfique Nawaz, Senior Advocate and Mr Mohammad Imtiaz Farooq
Juris Counsel
59/C, Road #4
Banani, Dhaka 12 13
People's Republic of Bangladesh

2.3 The Arbitral Tribunal

20. The Arbitral Tribunal, constituted on 20 December 2010, is composed of Professor Jan Paulsson, appointed by the Claimant, Professor Campbell McLachlan QC, appointed by the Respondents, and Mr Michael E.

Schneider, President of the Tribunal, appointed per the agreement of the Parties.

3. THE PROCEEDINGS LEADING TO THE PRESENT DECISION

21. The present decision follows the Decision on Liability in which the Tribunal has provided a detailed presentation of the complex history leading to that decision. The Tribunal refers to that decision and limits itself here to summarising those aspects that have some direct relevance to what the Tribunal has to decide now. It describes thereafter in more detail the procedure leading from the Decision on Liability to the present Decision on Recoverable Loss.

3.1 Summary of the procedure leading to the Decision on Liability

22. The present proceedings were started by two successive Requests for Arbitration against the two Respondents and the Government, filed with the International Centre for Settlement of Investment Disputes (**ICSID** or the **Centre**) one on 1 April 2010 (the **First Request** or **RfA I**) and registered as ARB/10/11; the other on 16 June 2010 (the **Second Request** or **RfA II**) and registered as ARB/10/18. In these requests Niko sought an award for payment of outstanding invoices for gas delivered (the **Payment Claim**) and a declaration that it was not liable for damages in relation to the blowouts (the **Compensation Declaration**).
23. The Parties appointed identically composed tribunals in the two arbitrations and, because of some common features of the two cases, it was agreed during the Joint First Session on 14 February 2011 in Geneva that the proceedings would be conducted concurrently, reserving separate treatment for circumstances distinct to one case. During the course of the joint conduct of the proceedings in these two arbitrations, the Parties and the Tribunal often used the term “arbitration” and “tribunal” in the singular, as this is done also in the present decision. This may not be taken as an indication that the Tribunal disregards the distinction between the two cases.
24. Indeed, while related, the disputes arising out of each of these contracts nevertheless raise very different issues. In addition to the substantive questions arising in the context of these disputes, a number of other issues arose during the course of the proceedings, in particular issues concerning the jurisdiction of the Tribunal, the interrelation of the present proceedings and proceedings before the courts of Bangladesh, and allegations of

corruption. The Tribunal addressed these issues in successive stages and issued decisions on them.

25. A detailed account of the procedural history in the two arbitrations up to the Third Decision on the Payment Claim is set forth in the Decisions of 19 August 2013, 11 September 2014, 14 September 2015 and 16 May 2016. The subsequent procedural history concerned essentially the Respondents' allegations of corruption and was set out in the Tribunal's decision of 25 February 2019. The Tribunal's Decision on Liability of 28 February 2020 contains a summary of the procedure leading up to the Decision on Jurisdiction and a detailed history of the proceedings on the Compensation Declaration.
26. The Claimant brought the proceedings concerning the Compensation Declaration in defence against the claims which the Government and Petrobangla had commenced before the courts of Bangladesh in 2008, claiming from Niko and others compensation for the losses caused by the two blowouts; these court proceedings are referred to as the **Money Suit**.⁵ In a first phase of the proceedings on the Compensation Declaration, the Respondents referred to the blowouts, the assessment of the resulting losses and the Money Suit, but argued that the blowouts were not covered by the JVA and that the dispute about these blowouts "is not a contractual dispute under the JVA".⁶ The Claimant contested this position and argued that the well blowouts were within the scope of the Arbitration Clause.⁷
27. In the **Decision on Jurisdiction**, the Tribunal held that it had jurisdiction also with respect to the Compensation Declaration and that its jurisdiction *ratione materiae* included not only issues of compliance with specific contractual obligations but should be understood in a wider sense including

*sources of liability other than the agreement itself. The question what these sources are and which obligations, contractual or other, fall to be considered concerns the substance of the dispute and is not determined at this stage of the arbitration.*⁸

⁵ For further details see below Section 5 *in fine*.

⁶ R-CMJ.2, title at page 7.

⁷ Claimant's Reply to the Respondents' Response with respect to the Compensation Declaration, 10 October 2011 (C-MJ.3).

⁸ Decision on Jurisdiction, 19 August 2013, paragraph 505.

28. Further to the Tribunal's directions in Procedural Order No 3, the Claimant produced a Memorial (C-CD.1) and a Reply (C-CD.2), accompanied by exhibits, witness statements of Brian Adolph, Randal Glaholt and William Hornaday, and expert reports of William Cline, Robert Kemp and John Wright.
29. BAPEX produced a Counter-Memorial (B-CD.1) and a Rejoinder (B-CD.2). Despite the Tribunal's ruling that it had jurisdiction also with respect to the Compensation Declaration, BAPEX continued to refrain from taking position on the Claimant's argument with respect to the liability for the blowouts, arguing that there was "no legal dispute between BAPEX and Niko under the JVA".⁹ It did, however, produce as an annex to the Counter-Memorial a document entitled "Investigations into the blowouts and their consequences" together with appendices 1-5.
30. Given the failure of BAPEX to present a position on the substance of the Claimant's case, the Tribunal decided to engage independent experts. In **Procedural Order No 7** it stated

... the Tribunals must continue with the examination of Niko's request for the Compensation Declaration and the issues which are raised by that request. In particular, they must examine the question whether Niko is liable for the two blow-outs and the damage caused by them.

Given the technical nature and the complexity of many of the issues arising in this context, the Tribunals do not wish to proceed in the absence of a critical review of the technical issues arising from the Claimant's case. In the circumstances the Tribunals require the opinion of an independent expert or, given the diversity of the relevant substance matters, several experts.

31. The Tribunal identified three subject matter areas in which it intended to seek assistance in examining the evidence put forth by the Claimant in the absence of experts produced by the Respondents:
 - (i) the well design and drilling of the Chattak 2 well and the design and execution of the relief well operation for Chattak-2A;

⁹ BAPEX's Counter-Memorial Concerning the Compensation Declaration, 30 January 2014 (B-CD.1), paragraph 89(a).

- (ii) the quantum of gas lost as a result of the Chattak 2 and Chattak 2A blowouts; and
 - (iii) the air quality and greenhouse gas emissions due to these incidents and resulting monetary loss or damage.
- 32. After consultation of the Parties about the procedure and the choice of experts, the Tribunal sought assistance from the International Centre for Expertise of the International Chamber of Commerce (**ICC**) and made the following appointments:
 - (i) Gas Well and Relief Well Design and Execution: Mr Leo William Abel;
 - (ii) Quantification of Gas Lost: Mr Keith Brian Masters; and
 - (iii) Air Emissions: Mr Ian Wallis.
- 33. Again in consultation with the Parties, the Tribunal agreed with the experts on their terms of reference. The Tribunal also determined with the Parties related procedural aspects, providing for the submission of a report by each of the Tribunal's experts, comments by the Parties and a hearing from 2 to 7 November 2015.¹⁰
- 34. These reports by the Tribunal experts were provided to the Parties on 10 June 2015. The Parties were given until 15 July 2015 to file their observations.
- 35. By letters of 28 May 2015, 8 June 2015, 15 June 2015 and 9 July 2015, the Respondents informed the Secretariat about several changes in their representation in these arbitrations. On 9 July 2015 they appointed Messrs Paul S. Reichler and Derek C. Smith of Foley Hoag LLP as representatives.
- 36. At the request of the Respondents' new counsel the Tribunal adapted the procedure and by **Procedural Order No 11** accepted that the Parties' comments on the Tribunal experts' reports be accompanied by observations of the Parties' own experts, provided that these observations remain within the limits of each expert's terms of reference and within the limits of their report.

¹⁰ Letter of the Secretariat to the Parties of 14 April 2015.

37. Both Parties filed on 31 August 2015 **Comments on the Reports of the Tribunal Experts** (C-CD.3 and B-CD.3) and on 30 September 2015 **Responsive Comments** (C-CD.4 and B-CD.5). The Respondents Comments were accompanied by observations from Dr Neal Adams, Dr Ian Borthwick¹¹ and Mr Parthasarathi Bandyopadhyay.
38. On 13 August 2015, BAPEX filed a **request for provisional measures** (B-CD/PM), together with one new exhibit (R-14), two video recordings (Exhibits R-14 and R-14 B) and two legal authorities (RLA-32 and RLA-33). The request referred to gas seepages in the area of the Chattak 2 well and asserted that they were due to the failure of the Second Relief Well to halt the flow of gas caused by the blowouts; BAPEX produced the Chattak Present Seepage Report of July 2015 and two videos showing gas seepages;¹² it asserted in particular health risks to the local population and relied on Niko's obligations under the JVA; and requested provisional measures in the following terms:
- 1) *that Niko provide for the immediate relocation as needed of the people affected by a continued flow of gas from the Chattak reservoir, and*
 - 2) *that Niko take all necessary steps, in a safe and prudent manner under the supervision of an internationally recognized shallow gas well control specialist approved by BAPEX, to stop the flow of leaking gas caused by the 2005 blow-outs.*¹³
39. Following an invitation by the Tribunal, the Claimant filed its Opposition to BAPEX's Request for Provisional Measures on 21 August 2015 (C-CD/PM). The Claimant objected that there was nothing either provisional or urgent about the request, which in the Claimant's view was in fact a "counterclaim for specific performance". The Claimant asserted that the gas seepages existed before Niko undertook any drilling and that, in any event, BAPEX knew about them long before. According to the Claimant, BAPEX had prevented Niko from taking measures to reduce the seepages. The Claimant requested the Tribunal to reject the request and to order that the three exhibits produced with the request "shall not be considered in the merits of the Compensation Declaration".

¹¹ See below Section 10.2.3.

¹² Chattak Present Seepage Report (with videos), July 2015, Exhibits R-14, R-14A and R-14B.

¹³ BAPEX's Request for Provisional Measures, 13 August 2015 (B-CD/PM), paragraph 4.

40. On 4 September 2015, BAPEX withdrew its 13 August 2015 request for provisional measures without any explanations.
41. The Claimant took note of the withdrawal on 10 September 2015. It reiterated its position that the new evidence filed by the Respondents with the request for provisional measures be excluded from consideration. It further asserted that the Respondents' comments on the report of the Tribunal appointed Experts had relied on new evidence and expert opinion and that the comments set out "an entirely new case theory". The Claimant concluded that its objections to the new evidence also extended "to the merits submission based on such experts".
42. Commenting on the Claimant's Opposition, BAPEX wrote on 17 September 2015 to express agreement with the Claimant insofar as the issues relating to gas seepage "do not relate to the subject matter of the dispute" and "are outside the jurisdiction of the Tribunal". BAPEX announced that it withdrew Exhibits R.14, R-14A and R-14B and "those aspects of its arguments and expert observations relating to damage caused by gas seepage". BAPEX declared that it withdrew the Observations of Mr Bandyopadhyay and that it struck "any reference to the continued seepage from the Observations of Dr Neal Adams and Dr Ian Borthwick".
43. BAPEX informed the Tribunal that it had filed a **Notice of Dispute** with Niko and its parent company as required by the JVA "in order to pursue its **claims arising from gas seepage** caused by Niko's blowouts at the Chattak Field after 9 October 2005"; a copy of the that Notice was attached to BAPEX's letter. In that notice, BAPEX requested that Niko
1. *Take steps to halt the uncontrolled seepage of gas on the Chattak Field;*
 2. *Compensate injured parties for the health effects and environmental damage caused by the extensive and continued seepage of raw hydrocarbons and associated chemicals into the water, soil, air, and local communities since the 2005 blowouts; and*
 3. *Compensate for the vast volumes of gas that have been lost.*

44. No further information was provided about such separate action. The Respondents pursue in this arbitration the claims for loss and damage caused by the alleged seepages.¹⁴
45. With their letter of 17 September 2015, the Respondents submitted redacted versions of the Observations of Dr Adams and Dr Borthwick; and on 22 October 2015 a redacted version of their comments of 31 August 2015 on the Reports of the Tribunal Experts.
46. By letter of 23 October 2015, the Tribunal communicated its position on the Respondents' withdrawal and redactions, stating "documentary evidence, once produced in the arbitration, cannot be withdrawn from the record without the consent of the Parties and the Tribunal. This also applies to reports that have been produced in support of certain factual allegation, even if the party having made these allegations no longer wishes to rely on" the allegations or wishes to redact the report. The Tribunal decided that

all submissions of the Respondents, including expert reports and documentary evidence remain on the record in an unredacted form.

47. During the course of the exchanges in preparation of a procedural consultation, counsel for the Respondents wrote on 10 September 2015 conveying a message from the Honourable Nasrul Hamid MP, State Minister, Ministry of Power, Energy and Mineral Resources and the Honourable Anisul Huq, Minister for Law, Justice and Parliamentary Affairs:

While the Government of Bangladesh is not a party to the proceedings instituted by Niko against BAPEX, the decision of the Tribunal will inevitably affect the interests of the Government. The Government thus has an interest in the conduct and outcome of these proceedings. In accordance with this interest, the Honorable Ministers respectfully request that the Tribunal hold the procedural consultation in person in London the week of 5 October 2015 in order that they be able to attend and address the Tribunal.

48. The Claimant objected to the "Ministers' request that they address the Tribunals". The Tribunal's attempts to find suitable dates for a meeting with the Ministers were not successful and on 23 September 2015, BAPEX

¹⁴ For the environmental losses concerning the alleged seepages, see below Section 10.4.2.

withdrew the request, “taking into account the proximity of the hearing and the difficulty in scheduling an in-person pre-hearing conference”.

49. BAPEX requested an opportunity to file an additional pleading and to present counter-claims,¹⁵ asserting that its “prior counsel made grave errors in judgment and material omissions that resulted in the deprivation of BAPEX’s right to be heard and an inequality of arms”. According to BAPEX, previous counsel “failed to understand the nature of these proceedings and the consequences of his actions on the rights of his client”.
50. In response to the Respondents’ requests, following extensive correspondence, further submissions from both Parties and a Pre-Hearing Conference on 1 October 2015, the Tribunal adjusted the procedure. As the Respondents had argued that the Claimant’s prior submissions had not addressed the full scope of Niko’s liability, the Tribunal extended the proceedings “to the full scope of [Niko’s] possible liability as it has now been identified in BAPEX’s recent submissions”.¹⁶
51. In order to afford to the Respondents, as they had requested, an additional opportunity to present their defence while limiting the disruption to the proceedings, the **Tribunal divided the Respondents’ presentation between issues of liability and damages**. The Respondents had said they were ready to argue the liability issue but required additional time for the quantum. The Tribunal accommodated this concern by limiting the hearing to principles of liability, preserving for this issue the hearing dates as they had been agreed in April 2015. The quantum of any damages that Niko would have to pay was reserved for a later phase in the arbitrations.
52. The Tribunal confirmed this adjustment of the procedure by **Procedural Order No 12** of 21 October 2015. In a Note attached to that order it provided guidance on the “Scope of the Examination and Questions for Consideration”.
53. The **hearing was held from 2 to 7 November 2015**. In a note on the organisation of the hearing, the Tribunal had confirmed its principal objectives:

... to determine

¹⁵ BAPEX’s Request for Leave to Submit One Additional Pleading and Counterclaims, 25 September 2015 (B-CD.4).

¹⁶ Summary Minutes of the Pre-Hearing Conference of 1 October 2015, paragraph 7.

(i) the nature and content of the laws and standards which apply to Niko's conduct of the drilling and the relief operations (the "Applicable Laws and Standards");

(ii) whether any breaches of these Applicable Laws and Standards occurred which caused or contributed to the blow-outs and the damage caused by them (the "Breaches").

[...]

(iii) In addition, both Parties have raised issues concerning the rules governing Niko's liability for any Breaches that may have occurred.

54. At the November 2015 Hearing these issues were addressed during opening statements: Witnesses and the three experts on drilling operations, Mr Abel, Dr Adams and Mr Wright, were heard. Legal argument was reserved for a subsequent hearing to be held in February 2016.
55. The Parties and the Tribunal discussed at the November 2015 Hearing the further procedure on the Compensation Declaration. At the conclusion of the hearing the Parties agreed on the schedule which was approved by the Tribunal and recorded in the Summary Minutes.
56. Following this November 2015 Hearing the Tribunal identified possible issues for the Parties' post-hearing submissions which they filed on 22 January 2016.
57. On 8 January 2016, the Respondents filed a **request for production of documents**, requesting (i) data from a 2004 seismic survey undertaken by the Claimant, (ii) data from the wells drilled by the Claimant on Chattak field, and (iii) environmental monitoring reports. The Respondents explained that they had unsuccessfully requested the documents from the Claimant on 23 December 2015 and needed them urgently for BAPEX submission on damages.
58. The Respondents obtained some of the requested documents at a **site visit at the Chattak field** in the absence of the Tribunal on 5 and 6 February 2016. The Claimant informed the Tribunal about this site visit on 10 February 2016 as follows:

Over 70 persons visited the Chattak site, including the Minister of Energy, a score of personnel from BAPEX and its sister company Sylhet Gas Fields Limited, four representatives of Foley Hoag, numerous technical and/or environmental experts retained by BAPEX, an intelligence officer, two ambulance attendants, five fire service employees and 33 police officers. Niko made available to BAPEX's team all documents on site arising from Petroleum Operations as defined under the JVA. BAPEX's legal team scanned hundreds of pages of these documents.

59. The Respondents provided on 17 February 2016 a status update regarding the site visit and concluded:

... the documents obtained at the site visit do not obviate the Respondents' request for documents. Accordingly, BAPEX maintain its request for the documents listed in its letter of 23 December 2015.

60. After further correspondence with the Tribunal, the document production request was addressed at the February 2016 Hearing. At this occasion an agreement was reached, identifying the requests still outstanding and providing for a method of settling them.¹⁷ By letter of 21 March 2016, BAPEX provided the Tribunal with a status update on the documents the production of which the Parties had agreed during the February 2016 Hearing, specifying those documents that remained outstanding, and requesting the Tribunal to order the Claimant to produce the documents identified in that letter.
61. The **Hearing for Legal Argument** and other pending matters was prepared by a Pre-Hearing Conference on 28 January 2016 and held **on 21 and 22 February 2016**.
62. The February 2016 Hearing was followed by a controversy about written comments submitted by the Respondents after that hearing. The comments were accompanied by a new document originating from Niko, entitled "Chattak Field Development Plan, December 2004," and identified as Exhibit R-47. The Claimant objected to the production of this document. The Tribunal did not consider the document as relevant for its Decision on Liability. It noted, however, that the Respondents considered the document as "also relevant for the Damages phase of the proceedings". The Tribunal

¹⁷ Recorded in the Summary Minutes of the February 2016 Hearing, item 13.4.

therefore reserved comments by the Claimant in its submissions on quantum.¹⁸

63. In a letter of 21 March 2016, the Respondents announced “new, recently obtained evidence of Niko’s use of bribes and corrupt means to procure the JVA and GPSA”. They concluded that “the Tribunal should not issue any further decision or award in the two proceedings without considering that evidence and our statements on it” and requested the “Tribunal defer its decision until after the 25th [March] and after its review of our pleading on this issue”.
64. BAPEX and Petrobangla then filed their **Corruption Claim** in two separate documents on 25 March 2016, BAPEX’s Memorial on Damages and a separate letter by Petrobangla. The Tribunal invited submissions from the Parties about the procedure for addressing this claim. The Tribunal issued Procedural Order No 13 on 26 May 2016. It decided to examine the Corruption Claim with priority and suspended all other proceedings, with the exception of a request for provisional measures that had been filed by the Claimant on 19 May 2016 in relation to the Payment Claim.¹⁹
65. These proceedings were completed by the **Decision on the Corruption Claim** of 25 February 2019. The Tribunal resumed work on the Decision on Liability and issued this decision on 28 February 2020.
66. In the **Decision on Liability** the Tribunal held:
 - (i) *Niko's liability as Operator for the 2005 blowouts in the Chattak field must be determined exclusively under the JVA between Niko and BAPEX by the present Tribunal;*
 - (ii) *The Tribunal's decision on Niko's liability for the two 2005 blowouts in the Chattak field is binding on the Government and Petrobangla as the assignors to BAPEX.*
 - (iii) *No standards under the law of Bangladesh relevant to Niko's liability for the two blowouts have been identified that are more stringent for the conduct of the Operator than those in the JVA;*

¹⁸ Decision on Liability, paragraph 698.

¹⁹ Decision on the Corruption Claim, 25 February 2019, paragraph 66.

- (iv) *The first blowout at Chattak 2 was caused by Niko's breaches of its obligations as Operator under the JVA;*
- (v) *The second blowout at Chattak 2A was not caused by any breach of obligation on the part of Niko;*
- (vi) *Niko must compensate BAPEX for direct loss and damage caused by the first blowout,*
- (vii) *The compensation owed by Niko to BAPEX includes the gas that escaped from the Chattak 2 Well as part of the first blowout; the identification of other loss and damage that Niko must compensate and the quantum of such compensation are reserved for the next phase of these proceedings; so are the decisions on the claims for interest and for the costs of the proceedings.*

67. Following the notification of the Decision on Liability the Respondents requested a correction of this decision. The Tribunal had inadvertently omitted to include Messrs Asif and Ghani in the list of the Respondents' counsel. On 6 March 2020, the Tribunal issued a correction, adding their names and addresses to paragraph 15 of the Decision on Liability.

3.2 The proceedings from the Decision on Liability to the present decision

68. The procedure on the Compensation Declaration, as adjusted in October 2015 to take account of the Respondents' requests, provided additional time for the Respondents to present the quantification of the losses resulting from the blowouts. The details of that procedure were then agreed by the Parties and approved by the Tribunal at the November 2015 Hearing. **The November 2015 timetable**, recorded in the Summary Minutes of that hearing, provided the following steps and dates following the Decision on Liability:

25 March 2016	Respondents' Memorial on Damages
29 July 2016	Claimant's Counter-Memorial on Damages
5 August 2016	Witness Notification
10 August 2016	Pre-hearing telephone conference, scheduled to commence at 4pm in Paris/Geneva, 10am in Washington, 8am in Calgary
29 August 2016 – 2 September 2016	Hearing – Damages in Paris

69. According to that timetable, **BAPEX** filed on 25 March 2016 its **Memorial on Damages (BMD)**. The memorial was accompanied by the witness statements of Mr Farid Uddin Ahmed, Md. Shahjahan and Dr Md. Abdul Gafur and expert reports of Steven A Wilson (The Environmental Protection Group), GeoMechanics Technologies, Clifford Betton, Dr Ian Borthwick and Professor Paul Leinster CBE, James F.Latham and Michael J. Nowicki (Ryder Scott Company) (**Ryder Scott Report**), Paul R. Carpenter (The Brattle Group) and Jeffrey Hughes (**Hughes I**).
70. That memorial also contained the Respondents' Corruption Claim which led, as explained above, to the suspension of the proceedings on the Compensation Declaration.
71. When it resumed the proceedings on damages and had issued the Decision on Liability, the **Tribunal consulted the Parties about the next steps in the procedure on damages**. It wrote to Parties on 3 March 2020, reminding them that the Procedural Timetable for the subsequent phase of the arbitration had been agreed at the November 2015 Hearing. The Tribunal consulted them about any required adjustments and invited
- *the Respondents to state whether they wish to amend their submission of 25 March 2016 and, if so, indicate how much time they request to be allocated for such amendment;*
 - *the Claimant to state whether it confirms the four-month period originally scheduled for its Counter-Memorial on Damages;*

- *both Parties to inform the Tribunals whether they wish to hold a procedural conference by telephone ...* ²⁰

72. The Parties replied by various submissions from 11 to 20 March 2020. Both Parties stated that they intended to address during the next phase of the arbitration the consequences that had to be drawn from the Decision on Liability on the heads of loss and damage for which Niko is liable (“heads of recoverable loss”). They requested a number of adjustments to the procedure agreed in 2015:
73. The Respondents had quantified in BAPEX’s 2016 Memorial on Damages the losses of BAPEX and the gas losses of the Government. With respect to the environmental losses, the Respondents had requested that Niko be ordered to pay expenses of monitoring, surveying and abatement and that the proceedings be held “open until such time as a complete survey and monitoring of the Tengratila area can be conducted and BAPEX can provide the fullest possible accounting of environmental and health related losses.”
74. Following the Decision on Liability the Respondents requested that the agreed procedure be modified to accommodate a “full assessment of environmental damage” by their experts; they stated that this assessment required nine months and could start only once the “present travel restrictions” are lifted and its experts can travel to Bangladesh.
75. In its letter of 12 March 2020, the Claimant objected to the extension of the proceedings to new quantifications by the Respondents and to the requested adjustment of the procedure. It insisted that the approach adopted in November 2015 be maintained.
76. In that letter, the Claimant also announced its intention to assert a set-off. The Respondents objected to the introduction of such a set-off by the Claimant On 13 March 2020. In a letter of 16 March 2020, the Claimant insisted and developed its argument concerning its right to introduce a set-off claim. The Respondents wrote on 20 March 2020 reserving “its right to challenge the admissibility of any such claims and object to the Tribunals’ jurisdiction over them.
77. The Tribunal summarised its understanding of the Parties’ positions and sought further clarifications in a communication of 23 March 2020:

²⁰ Letter of the Secretariat to the Parties of 3 March 2020.

The Parties are in agreement that the Respondents should be granted an opportunity to amend [its Memorial on Damages] to take account of the Tribunal's Decision on Liability.

The Tribunal accepts that the Respondents be given the opportunity to make such an amendment. It expects that by that amendment the Respondents will:(a) identify with specificity which loss and damage presented in the Memorial on Damages of 25 March 2016 satisfies the requirements of the Tribunal's findings on Niko's liability for the Chattak 2 blowout and the limitation of such liability; and (b) where necessary, adjust accordingly the Respondents' claims as set out in the 25 March 2016 Memorial.

The Respondents are invited to state whether the Decision on Liability requires any other amendments of their Memorial on Damages and, if so, identify the relevant passages in the Decision on Liability. The Tribunal is aware that the Respondents have described, in particular on pages 2 and 3 of their letter of 11 March 2020, other circumstances that, in their view, require a modification of the agreed Procedural Timetable. It will consider these circumstances separately.

The Tribunal expects that, in its Counter-Memorial on Damages, the Claimant will address the Respondents' quantification of Niko's liability as amended, considering in particular the Tribunal's findings on the scope of that liability and its limitation.

The Claimant is invited to specify:

- (i) whether, in addition to such explanations concerning the scope of liability and previous submissions concerning quantum including expert reports, it intends to produce (a) any new technical argument concerning the loss and damage caused by the Chattak 2 blowout and (b) new evidence and expert opinions in this respect; and*
- (ii) whether the claim on which the Claimant intends to rely for the intended set-off is established already or requires evidence and argument and a decision by the Tribunal.*

Both Parties are further invited to indicate:

(i) whether and to what extent the present COVID-19 situation and the existing and anticipated restrictions in this regard affect their capacity to prepare the submissions for the quantum phase, distinguishing between (a) legal argument, in particular concerning the question whether and to what extent Niko's liability extends to loss and damage of the type claimed; and (b) obtaining expert advice on the quantification of this loss and damage; and

(ii) availability for a hearing on quantum for seven days (as the Claimant suggests) or shorter, (a) in the first half of 2021 (b) after October 2021 or (c) after July 2022.

78. The Tribunal also enquired about the expected effect of the Covid-19 situation and related restrictions on the Parties' further work and proposed dates for the evidentiary hearing.
79. In their reply of 26 March 2020, the Respondents informed the Tribunal in particular of their intention to consult their experts and possible submissions of updated reports and further evidence. Concerning the impact of Covid-19, the Respondents described the effect of existing restrictions and necessary precautions on communications between counsel and their client in Bangladesh. With respect to the work of their experts they explained that "all of BAPEX's experts have indicated that they currently are able to conduct work other than fieldwork. The environmental experts have indicated that significant additional fieldwork will be required to determine the extent of the environmental damage caused by Niko's breach of the JVA." The Respondents pointed out the uncertainty about further developments in general and specifically the effect of the Covid-19 situation on their experts "ability to operate safely and without putting the health of the people of Tengratila at risk".
80. The Claimant explained with respect to "the potential set-off [that had] not yet been articulated, Niko will need to present its contractual and legal basis" and made proposals concerning the timing. With respect to the impact of the Covid-19 situation, the Claimant believed that it would impact its capacity to prepare legal argument or witness statement". It expected that counsel and experts would be working remotely for the foreseeable future. It "anticipated that usual time frames for work-flows will be increased somewhat, but not by any material amount".

81. In view of the scope of issues to be addressed and the resulting duration of the eventual evidentiary hearing, as well as the availability of the Parties and the members of the Tribunal, it became evident that a seven-day evidentiary hearing could not be held before late June 2021. The Tribunal noted, however, that legal argument identifying heads of recoverable loss could be heard at an earlier date and that a one- or two-day hearing could be held in September/October 2020, followed by a decision of the Tribunal. The subsequent evidentiary hearing would then concern the quantification of the recoverable loss so determined.
82. The Tribunal presented this position in **Procedural Order No 24** of 3 April 2020, providing for the following steps:
- (i) By 17 August 2020: Claimant's Counter-Memorial on Damages, as provided by the November 2015 programme, presenting also the Claimant's argument concerning the effect of the Decision on Liability on the heads of recoverable loss as well as argument on the justification of the intended set-off claim.
 - (ii) By 17 August 2020: the Respondents' Amendment to the 2016 Memorial on Damages as they had proposed as an alternative approach in a communication of 11 March 2020.

The Tribunal specified that, in these submissions, the Parties had to identify with specificity which heads of recoverable loss presented in the Memorial on Damages of 25 March 2016 (including the environmental damage reserved for subsequent quantification) satisfy the requirements of the Tribunal's findings on Niko's liability for the Chattak 2 blowout and the limitations of such liability. The Respondents were also asked to address the admissibility and justification of the requested changes from the November 2015 agreed procedure.

- (iii) A hearing for oral argument on the issues addressed in these submissions was envisaged for September/October 2020 at a date to be agreed forthwith. The Tribunal clarified that the Parties will be given an opportunity to respond to their opponent's argument identifying the heads of recoverable loss in light of the Tribunal's findings. The Tribunal pointed out that the issues to be argued at that Hearing concerned

essentially legal analysis which each Party would have performed in preparation of its 17 August 2020 written submission. Other issues, requiring factual evidence and expert opinion were to be addressed in a subsequent phase.

83. In that procedural order, the Tribunal announced its intention to determine after the hearing for oral argument which heads of loss are recoverable in principle, applying the Tribunal's rulings in the Decision on Liability and the other pending issues. At that time the Tribunal would also give further directions for the subsequent procedure leading up the evidentiary hearing, for which July 2021 was set as target. At that evidentiary hearing argument and evidence concerning the quantification of the heads of recoverable loss will be heard. Depending on the scope of the heads of loss accepted in principle, seven days or less would be required for such evidentiary hearing.

84. The time frame set out in Procedural Order No 24 was subsequently adjusted: the submissions were made on 7 September 2020. In consultations with the Parties, it was agreed that the Hearing was to be held remotely on 19 and 20 November 2020. The Claimant filed its Counter-Memorial on Damages (**CMD**) as scheduled on 7 September 2020, accompanied by factual exhibits and legal authorities, as well as

- (i) Second Expert Report of GaffneyCline;
- (ii) Expert Report of Stuart Wright;
- (iii) Second Witness Statement of Randal Glaholt;
- (iv) First Witness Statement and Expert Opinion of Grant Kelly;
- (v) Fourth Witness Statement of Brian Adolph; and
- (vi) Fourth Witness Statement of William Hornaday.

86. On the same day the Respondents filed BAPEX's Amendment to the Memorial on Damages (**Amendment**), accompanied by exhibits and legal authorities as well as

- (i) Supplemental Expert Report of Jeffrey Hughes on Field Development Costs for the Chattak West Gas Field (Hughes II);
- (ii) Supplemental Expert Report of Steven A. Wilson;
- (iii) Supplemental Report on Geomechanical Damage and Gas Loss at the Chattak West Gas Field, Bangladesh;

- (iv) Supplemental Expert Report of James F. Latham P.E and Michael J. Novicki P.E., Ryder Scott Company P.E. (**Ryder Scott Supplemental Expert Report**); and
- (v) Updated Quantum of Damages Report, Paul A. Carpenter PhD, the Brattle Group.

87. The Respondents wrote on 28 September 2020 seeking clarification of the agenda for the November 2020 Hearing, suggesting that a pre-hearing conference be held and requesting permission to file a written response to the Claimant's set-off claim and its admissibility.
88. The Tribunal responded on 2 October 2020. It confirmed that the admissibility of the set-off claim and the question whether the heads of loss claimed for set-off are recoverable are among the subjects to be addressed at the November 2020 Hearing. It permitted **further written submissions** in advance of that hearing by 22 October 2020 and announced its intention to hold a pre-hearing conference.
89. On 22 October 2020 the Respondents submitted **BAPEX's Written Presentation in Advance of the 19 – 20 November 2020 Hearing** on Legal Issues Related to Heads of Loss, accompanied by new evidence and legal authorities. The submission also included argument on Niko's set-off claim. The Claimant informed the Tribunal that it did not consider it necessary to introduce new authorities or make a written submission in advance of the November 2020 Hearing.
90. The **Pre-Hearing Conference** was scheduled for 4 November 2020 by video-conference. In advance of that conference the Tribunal submitted on 2 November 2020 a proposed agenda. Apart from organisational and logistic issues, the agenda included a list of issues to be addressed at the November 2020 Hearing, indicating the following issues, with respect to the Compensation Declaration and inviting the Parties to state whether there are any other issues which in their opinion require to be argued at the November 2020 Hearing:

3.1. Criteria for distinguishing recoverable heads of loss from those which are excluded by Clause 27.2 of the JVA and Section 73 of the Contract Act; for the Tribunals it is important to understand, in light of the Tribunals' findings in the Decision on Liability, the reasons why

the Parties consider each of the losses claimed as recoverable heads of loss or deny recoverability;

3.2. Legal issues concerning the Government's tort claim;

3.3. Admissibility and justification of the Claimant's set-off claim, including the question whether heads of loss relied upon are recoverable in light of the Tribunals' decision on liability;

3.4. The procedure for the quantification of recoverable claims, following the Tribunals' forthcoming Decision on Heads of Claim.

91. At the Pre-Hearing Conference the Tribunal was represented by its President alone, given the great disparity of the relevant time zones. At that occasion, organisational and logistic issues were settled and the list of issues to be addressed at the November 2020 Hearing was discussed. The Tribunal prepared Summary Minutes of the Pre-Hearing Conference, submitted them to the Parties for comments and, taking account of the Parties' replies, finalised the Summary Minutes on 10 November 2020.
92. At the conference, the Parties confirmed in principle their agreement with the identification of the issues listed, subject to some adjustments and clarifications. Disagreement arose, however, with respect to item 3.1 of the List of Issues insofar as Claimant understood that this issue should not be limited to distinguishing recoverable loss from losses that were excluded by Article 27.3 of the JVA and Section 73 of the Contract Act but that all issues of liability that arose from the submissions should be addressed. The Respondents objected and argued that adopting the broad definition of the issue would go beyond the scope that had been announced for the November 2020 Hearing.
93. With respect to item 3.3 of the list of issues, it was agreed that this issue be limited to the admissibility of the set-off defence and the Tribunal's jurisdiction over it. If the Tribunal determined in the Decision on Recoverable Loss that the set-off defence is admissible, it was agreed that liability and quantum of that defence will be subject of the final phase of the arbitration.

94. In order to allow the full Tribunal to consider the controversy about the scope of agenda item 3.1, the Parties were invited to explain their respective positions in writing. They did so on 6 November 2020.
95. The full Tribunal considered these explanations and, after deliberation, issued **Procedural Order No 25** on 15 November 2020. In that order it clarified that agenda item 3.1 concerns all claims by BAPEX and the question whether the claims are recoverable in principle. If the Claimant “den[ies] recoverability”, its argument at the Hearing is not limited to specific grounds of its denial. The Tribunal sees no need to modify the definition of the issue in item 3.1 of the List of Issues.
96. In Procedural Order No 25 the Tribunal also recorded the definition of Agenda Item 3.3, as agreed at the Pre-Hearing Conference, and held that otherwise “the List of Issues is confirmed without prejudice to clarifications which the Tribunals reserve to make after consultation with the Parties”. The Tribunal also agreed in this procedural order the Agenda and Time Allocation for the November 2020 Hearing that the Parties had agreed and submitted to the Tribunal on 5 November 2020.
97. Attached to that order were (i) the List of Issues, (ii) a Protocol Regarding Remote Hearing Matters and (iii) Hearing Agenda, Allocation of Time and Connection Details. The Parties were invited to file observations on the Protocol: no comments were received from either Party.
98. In the Agenda for the Pre-Hearing Conference the Tribunal had identified the Parties’ written submissions it would have available at the November 2020 Hearing. At the Pre-Hearing Conference itself, the Tribunal invited the Parties to identify in advance of the Hearing any other documents that might be frequently referred to. In addition, the Parties agreed to provide the Tribunals in advance of the Hearing with a list of relevant references to sections in the Parties’ submissions to facilitate document management during the Hearing. These lists were provided by the Claimant on 13 November and by the Respondents on 16 November 2020.
99. With the objective of assisting the Parties in focusing their presentations at the November 2020 Hearing, the Tribunal provided to them on 16 November 2020 a list of 36 questions related to the List of Issues that had been agreed at the Pre-Hearing Conference and clarified by Procedural Order No 25. The List identified addressees of the questions, 25 to the Respondents, 8 to the Claimant and 3 to both Parties; the Tribunals’

introduction to the listed questions made clear that a question addressed to one Party does not exclude that it could also be discussed by the other Parties.

100. Specifically, the List of Questions was introduced by the following explanations:

The Tribunals presume that most if not all of these questions have been identified already by the Parties in their preparation of the forthcoming November 2020 Hearing. The below list summarising some of the Tribunals’ questions may nevertheless assist the Parties in focusing their presentations. The list is by no means complete and may not be taken in any way as a prejudgement of the Tribunals on any of the issues it must decide; and it should not be taken as limiting in any way the Parties’ argument at the Hearing.

101. The **November 2020 Hearing** took place as scheduled by video-conference on 18 and 19 November 2020. Given the place of residence of the hearing participants (i.e. Wellington, Dhaka, Manama, Geneva, Paris, Washington, DC, and Calgary) it was agreed that it would take place over 2 days with two 2-hour sessions each hearing day, i.e. a total of 8 sitting hours, as follows:

<u>Hearing Day 1</u>						
Hearing Day 1 – Session 1						
<u>UTC-time</u> Thu 5pm-7pm	<u>Wellington</u> Fri 6am-8am	<u>Dhaka</u> Thu 11pm-Fri 1am	<u>Manama</u> Thu 8pm-10pm	<u>Geneva/Paris</u> Thu 6pm-8pm	<u>Washington, DC</u> Thu 12pm-2pm	<u>Calgary</u> Thu 10am-12pm
Hearing Day 1 – Session 2						
<u>UTC-time</u> Fri 3am-5am	<u>Wellington</u> Fri 4pm-6pm	<u>Dhaka</u> Fri 9am-11am	<u>Manama</u> Fri 6am-8am	<u>Geneva/Paris</u> Fri 4am-6am	<u>Washington, DC</u> Thu 10pm-Fri 12am	<u>Calgary</u> Thu 8pm-10pm
<u>Hearing Day 2</u>						
Hearing Day 2 – Session 1						
<u>UTC-time</u> Fri 5pm-7pm	<u>Wellington</u> Sat 6am-8am	<u>Dhaka</u> Fri 11pm-Sat 1am	<u>Manama</u> Fri 8pm-10pm	<u>Geneva/Paris</u> Fri 6pm-8pm	<u>Washington, DC</u> Fri 12pm-2pm	<u>Calgary</u> Fri 10am-12pm
Hearing Day 2 – Session 2						
<u>UTC-time</u> Sat 3am – 5am	<u>Wellington</u> Sat 4pm-6pm	<u>Dhaka</u> Sat 9am-11am	<u>Manama</u> Sat 6am-8am	<u>Geneva/Paris</u> Sat 4am-6am	<u>Washington, DC</u> Fri 10pm-Sat 12am	<u>Calgary</u> Fri 8pm-10pm

102. The Hearing was attended by the full Tribunal, the Tribunal Secretary and staff of the ICSID Secretariat, the Parties’ Counsel and staff of their law firms, as well as representatives of the Claimant and of the Respondents

and the Honourable State Minister, Ministry of Power, Energy and Mineral Resources and other members of the Ministry. A complete list of participants was distributed to the Parties as Annex B to the Summary Minutes of the Hearing prepared by the Tribunal.

103. The Parties presented their argument on the issues that had been identified and responded to the questions of the Tribunal. Prior to the start of their respective presentations the Parties distributed to the Tribunals and their opponent electronic copies of the slides shown during their presentation. These were uploaded to the Box account established for these cases and recorded as RH-1 to RH-3 and CH-1 and CH-2.
104. Concerning item 3.4 of the agreed agenda for the Hearing, the Respondents presented BAPEX's Proposed Procedural Schedule for Quantification of Recoverable Claims. This schedule provided for a reply by the Respondents on Heads of Damage 1 and 2, followed by the Claimant's rejoinder, a hearing and the Tribunal's "Decision on the Quantification of Damages under Heads of Damage 1 and 2 and Order Requiring Payment of Monitoring Costs Arising Out of Head of Damage 3". This decision was then to be followed by proceedings on BAPEX's Head of Damage 3, starting with a submission of the Respondents to be filed "9 months from when the World Health Organisation declares the COVID-19 pandemic over". According to the Respondents, the proceedings in this phase were to consist of an exchange of written submissions, a hearing and the Final Award.
105. The Claimant objected to this proposal and the change of the procedural approach adopted at the end of the November 2015 Hearing. It took position that further monitoring was neither required nor justified, and requested that the claims be decided on the basis of the evidence on the record.
106. The Respondents announced BAPEX's intention to file requests for production of documents. The Claimant objected that a phase for document production had not been provided in the agreed programme and was inadmissible. The Tribunal examined with the Parties whether document production could be organised without causing delay to the procedure, affording both Parties the opportunity for such production. It was agreed that document production requests and responses to them be exchanged during the period immediately following the November 2020 Hearing and that any unresolved issues on document production could

then be decided by the Tribunal together with the Decision on Heads of Recoverable Loss.

107. The Parties recognised that the scope for the proceedings following the Decision on Heads of Recoverable Loss will be determined to a large extent by that decision. Details for this stage of the proceedings were not agreed, except that the Parties and the Tribunal agreed on the dates for the evidentiary hearing. Expecting that the hearing will require 8 sitting days, it was agreed that the evidentiary hearing would be held from 10-19 August 2021, excluding as sitting days the weekend of 14 and 15 August 2021, keeping Saturday 14 August 2021 in reserve.
108. The Tribunal and the Parties considered the procedure following the Hearing. The Tribunal confirmed that it will issue their Decision on Heads of Recoverable Loss, as announced in Procedural Order No 24. It did not provide for any further submissions in respect of that decision. The Tribunal also confirmed to the Parties the scope of the Decision on Heads of Recoverable Loss, as will be discussed in further detail below in Section 6.
109. Sound recordings and verbatim transcripts were made of the November Hearing and deposited in the Centre's archives. Copies of the transcripts and audio recordings were provided to the Parties and to each Member of the Tribunal. The real-time transcript was distributed to the Parties on a same-day basis. Transcript corrections were provided by the Parties to the ICSID Secretariat after the Hearing and corrected transcripts were made available to the Parties and the Tribunal. Quotations from the transcript in this Decision refer to the corrected version of the transcript.
110. The Tribunal prepared Summary Minutes and submitted them to the Parties in draft form on 4 December 2020. A revised draft was circulated on 18 December 2020, taking account of the Parties' comments. The Summary Minutes were finalised after the Parties were given the opportunity for a second round of comments.
111. Further to the **request for document production** discussed at the Hearing, the Tribunal issued on 1 December 2020 **Procedural Order No 26**, giving directions for the document production procedure. On 12 January 2021, the Respondents submitted to the Tribunal, the Respondents' Replies on outstanding Document Requests for the Tribunal's decision. The request took the form of a Redfern Schedule,

recording the Respondents' requests and the Claimant's replies and the Respondents' comments on them. The schedule also recorded the Claimant's "objection to a further document request phase" and noted that its responses in the schedule were "also subject to the Tribunals' pending decision regarding recoverable heads of loss".

112. Following the Hearing and a discussion with the Tribunal about the Tribunal's Question No 12, the Respondents wrote to the Tribunal on 5 December 2020 with respect to the Government's claim for lost gas:

In light of Respondents' more complete understanding of the Tribunals' question, Respondents consider that the loss to the Government could be determined in relation to alternative gas supplies. The valuation of the loss on this basis would require further analysis, with input from valuation experts. Respondents respectfully inform the Tribunals that they are prepared to provide such analysis now or in the subsequent quantification phase.

113. On 15 April 2021 the Respondents wrote to the Tribunal, "to provide an update to the Tribunal regarding the work of BAPEX's environmental damages experts". With the letter the Respondents communicated a note from Delphic HSE concerning "the planned health, environmental and monitoring and environmental conditions study (the Study) to be carried out in Trenggratila, Bangladesh". The note stated that "Delphic HSE is planning to start the Study in November 2021" but identified "[s]everal significant risks to the Study [...] primarily related to COVID-19".
114. The Tribunal examined the Parties' written and oral submissions, the evidence produced and the expert reports. After deliberation, it now renders its decision within the scope agreed before and at the November 2020 Hearing and defined in further detail in Section 6 below.

4. THE RELIEF REQUESTED

4.1 The Claimant

115. In the Decision on Liability the Tribunal set out the successive versions of the relief that the Claimant had requested since the Notice to Arbitrate of 8 January 2010.²¹ In its Counter-Memorial on Damages of 7 September 2020, the Claimant sought the following relief:

- 452. *Declare that BAPEX may not recover the losses alleged to have been suffered by the Government of Bangladesh as these losses are excluded from recovery by the Joint Venture Agreement;*
- 453. *Dismiss the claims asserted by BAPEX for the recovery of such losses;*
- 454. *Declare that BAPEX has failed to prove any loss directly resulting from the first blowout at Chattak West field;*
- 455. *Declare that BAPEX is not entitled to pre-award interest;*
- 456. *Dismiss BAPEX's claims for failure to establish them;*
- 457. *In the alternative, should the Tribunal find that BAPEX has proven a loss directly resulting from the first blowout at Chattak West field, fix the amount of that loss in an amount to be proven at the hearing but which Niko contends to be USD 2.2 million or less;*
- 458. *Declare that BAPEX is liable to Niko for damages suffered as a result of BAPEX's breaches of the JVA and wrongful deprivation of Niko's right to produce gas from Chattak West;*
- 459. *Fix the amount of Niko's losses in an amount to be proven at the hearing, but which Niko contends to be at least USD 114.1 million, and set this amount off against any amount for which Niko is determined to be liable to BAPEX;*
- 460. *In the alternative, declare that the Tribunal and the Centre have jurisdiction over Niko's claim in set-off, that BAPEX is liable to*

²¹ Decision on Liability, paragraphs 172 – 178.

Niko for damages suffered as a result of BAPEX's breaches of the JVA and wrongful deprivation of Niko's right to produce gas from Chattak West, fix the amount of Niko's losses in an amount to be proven at the hearing, but which Niko contends to be at least USD 114.1 million, and set this amount off against any amount for which Niko is determined to be liable to BAPEX;

461. *Declare that Niko owes no compensation to BAPEX;*
462. *Declare that the Tribunal's determination of Niko's liability and determination concerning compensation due are final and binding on BAPEX and all of its predecessors, assignors, successors and assigns, including the Government of Bangladesh and Petrobangla;*
463. *Declare that BAPEX breached its warranties and misrepresented in the JVA that it had been vested with and assigned all relevant rights, obligations and responsibilities of the Government of Bangladesh and Petrobangla;*
464. *Declare that Niko is entitled to be made whole for any and all damages resulting from the pursuit of the Money Suit by the Government of Bangladesh and Petrobangla in Dhaka court as a consequence of the above-mentioned breach of warranty and misrepresentation;*
465. *Order BAPEX to pay to Niko as compensation for said breach and misrepresentation the amount corresponding to all attorneys' fees, expert fees and other costs incurred by Niko in defending itself and its officers in the Money Suit;*
466. *Order BAPEX to pay on Niko's behalf the full amount of any damages assessed against Niko by a final judgment or decree in the Money Suit;*
467. *Order BAPEX to pay to Niko the costs of this arbitration, including professional disbursements;*
468. *Order BAPEX to pay to Niko interest on all sums awarded to Niko;*

- 469. *Order that all sums awarded to Niko be in freely transferable and exchangeable funds, in accordance with the requirements of Article 26.1.6 of the JVA; and*
- 470. *Order such other and further relief as the Tribunal may deem appropriate in the circumstances.*

116. The Claimant did not announce any changes to these requests thereafter.

4.2 The Respondents

117. The relief requested by the Respondents with respect to the Compensation Declaration, as it evolved during the course of the proceedings, was set out in the Decision on Liability.²² In the Amendment BAPEX presented the request in the following terms:

- a. *Declare that BAPEX is entitled to full compensation for all direct losses resulting from the Chattak 2 blowout that occurred at the Chattak Field and that all the losses claimed by BAPEX in its Memorial on Damages and this Amendment are direct losses;*
- b. *Order Claimant to pay damages of \$118 million for BAPEX's losses;*
- c. *Order Claimant to pay damages of \$857 million for the Government's loss of gas production and between US\$ 8,461,463 and \$8,642,493 to cover the expenses of monitoring, surveying and abatement and to hold this proceeding open until such time as a complete survey and monitoring of the Tengratila area can be conducted and BAPEX can provide the fullest possible accounting of environmental and health related losses;*
- d. *Order prejudgment and post-award interest on all sums awarded;*
- e. *Order Claimant to pay all the expenses and costs associated with defending against these proceedings, including BAPEX's attorneys' and expert witnesses' fees and expenses, the fees*

²² Decision on Liability, paragraphs 179 – 184.

and expenses of ICSID and the members of the Tribunal, and the charges for the use of hearing facilities;

f. Grant BAPEX any other remedy that the Tribunal considers appropriate.

118. Following the November 2020 Hearing the Respondents clarified on 5 December 2020, as quoted above in Section 3.2, that they “consider that the loss to the Government could be determined in relation to alternative gas supplies. No other changes to the requests by the Respondents were made after the Amendment.

5. SUMMARY OF THE RELEVANT FACTS

119. The facts of the disputes underlying the arbitration have been broadly set forth in several of the Tribunal's earlier decisions. The summary below provides an overview of the essential facts relating to the Chattak field and the present Decision, providing the background to the loss attributed to the first blowout and its distinction from the loss caused by the second blowout. To the extent to which they are relevant for specific heads of claim they will be developed in further detail in the context of each of these claims.
120. The **Chattak field**, sometimes also referred to by the name of the neighbouring village of **Tengratila**, in the Sylhet area in the far north-east of Bangladesh,²³ was discovered in 1959 by Pakistan Petroleum Ltd., the predecessor of Petrobangla. The first well, the Chattak 1 Well, was drilled in 1960, operated for some 25 years, producing some 26 bcf of gas. Increased water production forced Petrobangla to shut down the well in 1985.²⁴ This Chattak 1 Well is situated in the Western part of the field, which is distinguished from the Eastern part, as described in particular in section 9.5.1 of the Decision on the Corruption Claim.
121. In 1997, a blowout occurred in the **Moulavi Bazar** well, sometimes also referred to as Maguchora,²⁵ an exploration well drilled by Occidental Petroleum also in the Sylhet area.²⁶ The Parties disagree as to whether information concerning this well and this blowout was available to Niko before it drilled in the Chattak field.
122. Niko and its parent company Niko Resources Ltd (Niko Canada) were in contact with the Government of Bangladesh and the Respondents since 1997. In August 1999 Niko and BAPEX concluded a **Framework of Understanding** pursuant to which they produced in February 2000 a joint study on three marginal/abandoned fields, including the Chattak field. This study, entitled "**Marginal Field Evaluation Chattak, Feni and Kamta**", presented the information that had been gathered on the three

²³ Maps showing Tengratila and its situation in Bangladesh are reproduced below in Section 10.1.

²⁴ Marginal Field Evaluation (Annex B to the JVA) (MFE), Exhibit R-1, page B-6.

²⁵ *E.g.* in the Report on Environmental and Forestry Losses, Exhibit Annex R-1.

²⁶ Expert Report of John Wright, 29 May 2014 (Wright I), page 17 and cross section at Figure 3-4 at page 18; Witness Statement of Brian Adolph, 28 May 2014 (WS Adolph), paragraph 77; Witness Statement of Mohammed Abdul Baqi, 27 October 2015 (WS Baqi), paragraphs 19 to 21.

fields.²⁷ It was decided that the Chattak and the Feni fields were promising enough to proceed. After protracted negotiations in which the Government and Petrobangla were actively involved, BAPEX and Niko concluded the JVA on 16 October 2003 relating to the Feni and the Chattak field. Niko was assigned the role of the Operator.

123. Following the conclusion of the JVA, the Joint Venture started its work in the Feni Field where it drilled several wells. Production by the Feni 3 Well started on 2 November 2004.²⁸
124. With respect to the Chattak field, Niko conducted a 3D Seismic Study, starting in May 2004. After production in the Feni field had started, Niko moved the drilling rig to the Chattak field. On 31 December 2004, Niko started drilling the **Chattak 2 well**.
125. In Chattak West eight gas bearing sands had been identified. The Chattak 1 Well produced gas from Sands 3 and 4 and from Sands 5 and 6; Sands 7 and 8 were tested from 1632m – 1657m. The Chattak 2 Well Proposal targeted primarily Sands 1 and 2 that were logged but untested in Chattak 1; but it was designed for a depth of 1750m, exploring also Sands 7 and 8.²⁹
126. Sands 1 and 2 are situated below an impermeable **Upper Marine Shale**, also referred to as the **Regional Shale**, at a depth between 570m and 650m. In this decision these two sands are referred to as **the Reservoir**.
127. Drilling of the Chattak 2 well had reached the depth of 807m when the drilling crew performed a wiper trip. During that wiper trip on **7 January 2005, the first blowout occurred at 19:50h**. Gas mixed with debris erupted from the Chattak 2 well and blew up to 100m or more in the air. The rig collapsed and fell into the crater that had formed. The gas ignited and burned for several days.
128. Niko's personnel escaped safely, and no persons were injured; but damage was caused to the surrounding habitats and environment. The events are described in further detail below in Sections 10.1 and 10.2. The following

²⁷ Both the Framework of Understanding and the Marginal Field Evaluation are attached to the JVA as Annex A and B and produced in this arbitration as Exhibit C-1.

²⁸ For details about the production from the Feni field see in particular Decision on the Corruption Claim, pages 146 *et seq.*

²⁹ Chattak 2 Well Proposal, attached to Niko's letter to BAPEX of 14 December 2004, Exhibit C-15.

quotations may provide an introduction to these events and to the extent of the damage caused by the first blowout.

129. Niko's report of 11 January 2005 stated *inter alia*:

There were no injuries or fatalities. The flow was sweet dry gas with no liquids of any description.

On 9 January 2005 at 09:30am, flow diminished and extinguished.

Area inspection indicated small flares through fissures in and around the drill site.

Gas flare continues to decrease daily. The field is being monitored with daily site visits.

Full investigation is underway by all parties concerned.³⁰

130. The **First Enquiry Report** of 7 February 2005 by the Committee, set up by the Government to determine the causes of the blowout, reported :

Information gathered from eyewitnesses indicate that the flare height was maximum during first 42 hrs. (9 pm of 7.1.05 to 3 pm of 9.1.05). The flare height occasionally decreased during this period. The main fire ceased in the afternoon of 9 January 2005 but there were number of seepages where gas was burning. The height of these fire were 2 – 5 ft.³¹

131. The “Committee formed to estimate the amount of local losses due to the fire in Tengratila Gas Field” stated in its report on the first blowout, dated 8 June 2005:

After the incident of the fire in Tengratila Gas Field, the villagers were instructed through loudspeaker and local announcement mechanisms to leave the houses of the area and to take safe shelter in a nearby area. Their movable properties were damaged at the time of leaving the houses.

³⁰ Chattak 2 Well Control Incident and Blow-out – Draft Report, 11 January 2005 (Draft Report), Exhibit C-21.

³¹ First Enquiry Report on Blow-out of Well Chattak 2 on 7 January 2005, 7 February 2005 (First Enquiry Report), Exhibit R-3, paragraph 6.18. For a list of these reports, see below in this section.

*They had to suffer an unbearable disaster at that time. To reduce the immediate losses and problems of the people, NIKO Authority assured that the people surrounding the gas field will be provided with financial help. On 01/17/05, The Deputy Commissioner, with assistance of the Upazila Nirbahi Officer, other Upazila Officers, and the UP Chairman concerned and in presence of the honorable Member of Parliament, distributed a total of BDT 3,080,000/- amongst the 616 families at the rate of BDT 5,000/- for each family which was paid by NIKO.*³²

132. The Parties in the arbitration agree that on 9 January 2005, the Chattak 2 well “**bridged over**” or “bridged off”.³³ They disagree, however, at which level the well bridged over, as will be discussed in Section 8.2. In the Hughes Supplemental Report “bridging over” is described as follows:

*formation sand and shale packed off around the drill string and casing and prevented any further flow of gas to the surface.*³⁴

133. That report also states that, when the “well bridged over downhole, flow diminished, and the fire was extinguished”.³⁵ The report indicates that the bridging occurred at the level of 466m.³⁶ This is also where the Respondents assume the bridging to have occurred; they rely for this assumption on Robert Grace’s report of 4 July 2005 which contains the following observation: “it was generally considered that, assuming the bit to be at 466m (1529 ft), the bridge in the blowout well would be at or near the bit”.³⁷
134. The Claimant objected, arguing that the quoted passage in one of the scenarios that Mr Grace considered but that in reality Mr Grace did not know where the bit was. The Claimant is of the view that the Chattak 2

³² Committee Formed to Estimate the Amount of Local Losses due to Fire in Tengratila Gas Field, First Blowout (Local Losses Report), Exhibit Annex R-3(bis), paragraph 5.

³³ The Respondents at Amendment, paragraph 30; the Claimant, at HT (Day 1), page 129 contests the explanations of Mr Hughes, but does not seem to contest that on 9 January 2005 the Chattak 2 well bridged off.

³⁴ Supplemental Expert Report of Jeffrey Hughes, 19 August 2020 (Hughes II), paragraph 15.

³⁵ Hughes II, paragraph 6.

³⁶ Hughes II, Figure 1 at page 10.

³⁷ Niko: Robert Grace Report, Events at Niko Resources – Chattak 2a Relief Well, 4 July 2005, Exhibit C-45, page 4; the Respondents rely on this passage at HT (Day 2), page 352.

well did not bridge at 466m or anywhere else above the Regional Shale, but at that Shale itself.³⁸

135. Despite the bridging of the well, there were reports that gas continued to escape through seepages around the borehole;³⁹ the importance of this seepage and the charging of gas into the Upper Sands is a controversial issue in the arbitration.
136. Niko engaged Safety Boss Inc., a Canadian well control and safety consultant, whose representatives arrived on site on 9 January 2005. They concluded that surface intervention was not possible and that sub-surface intervention, *i.e.* a relief well, remained the only option.⁴⁰
137. Niko then engaged GSM Consulting Petroleum Engineers (**GSM**) **the company of Robert Grace** for the relief well design and operation.⁴¹ GSM prepared a Relief Well Program which Niko submitted to BAPEX on 13 February 2005.⁴² After consultation with Mr Grace, the programme for Relief Well Chattak 2A was approved by the JV Joint Management Committee (**JMC**) on 27 March 2005.⁴³
138. Drilling the relief well, **referred to as Chattak 2A Well**,⁴⁴ started on 30 May 2005 some 100m away from the blowout at the Chattak 2 well. The Chattak 2A Well also suffered **a blowout on 24 June 2005**. When the truck pumping water into the well ran out of fuel, the gas flow from the well ignited.
139. According to the Claimant, after the Chattak 2A blowout, the well “flowed for approximately 12 days before the wellbore collapsed and bridged”.⁴⁵
140. GSM then prepared drilling plans for (i) a **Data Acquisition Well** (referred to as **Chattak 2C Well**) and, on the basis of the information from Chattak 2 C and the previous wells and blowouts, for (ii) a **further relief well**,

³⁸ HT (Day 2), pages 413 – 416.

³⁹ Report of the Committee Estimating Gas Losses Caused by the Chattak 2A Relief Well Blowout, 27 August 2005, Annex R-4, page 3.

⁴⁰ Safety Boss, Summary Report Covering the Period from 9 to 12 January 2005, 24 January 2005, Exhibit C-23.

⁴¹ Consulting Agreement between Niko and GSM Consulting Petroleum Engineers, 7 January 2005, Exhibit C-18.

⁴² Niko’s Letter to BAPEX, attaching Relief Well Programme, 13 February 2005 (Relief Well Program), Exhibit C-28.

⁴³ Revised Minutes of JMC Meeting held on 22 February 2005, Exhibit C- 31.

⁴⁴ Chattak 2A Relief Well Plan and Drilling Procedure, Exhibit C-86.

⁴⁵ HT (Day 1), page 138.

referred to the **Chattak 2B Well**. The drilling programmes for both wells were submitted on 23 July 2005⁴⁶ and were approved by the Joint Venture JMC at its 5th meeting.⁴⁷

141. The **second relief well** was eventually **completed on 9 October 2005**. The Claimant asserts that the relief operations by the relief well Chattak 2B were “successfully completed on 9 October 2005” and relies for this assertion on the End of Well Report presented by Robert Grace of GSM, dated 20 October 2005.⁴⁸ Niko reported to BAPEX the success of the operation at a meeting of 16 October 2005.⁴⁹ The Respondents contest that the relief operation did indeed seal the Chattak 2 well completely. BAPEX expressed doubts immediately after it had received Niko’s announcement of a successful sealing of the well.⁵⁰ The Respondents assert that until today the Chattak 2 well continues to release gas from the Reservoir.
142. The Chattak 1, 2, 2A, 2B and 2C wells and their trajectory have been represented in a report prepared in December 2006 by the Canadian consulting company Fekete Associates Inc. Calgary, as follows.⁵¹

⁴⁶ Niko’s Letter to BAPEX, attaching Drilling Programmes, 23 July 2005, Exhibit R-59.

⁴⁷ BAPEX’s letter of 22 November 2005, Exhibit C-4, paragraph IV.

⁴⁸ Niko’s Counter-Memorial on Damages, 7 September 2020 (CMD), paragraph 332, referring to Chattak 2B Relief Well - End of Well Report prepared by Robert Grace of GSM, 29 November 2005, Exhibit C-266.

⁴⁹ WS Adolph, paragraphs 108 and 109.

⁵⁰ See BAPEX’s letter of 22 November 2005, Exhibit C-4, with references to letters of 18 October and 9 November 2005.

⁵¹ Fekete Associates, Inc. Report, 8 December 2006 (Fekete Report), Exhibit C-70, page 9, Figure 2.

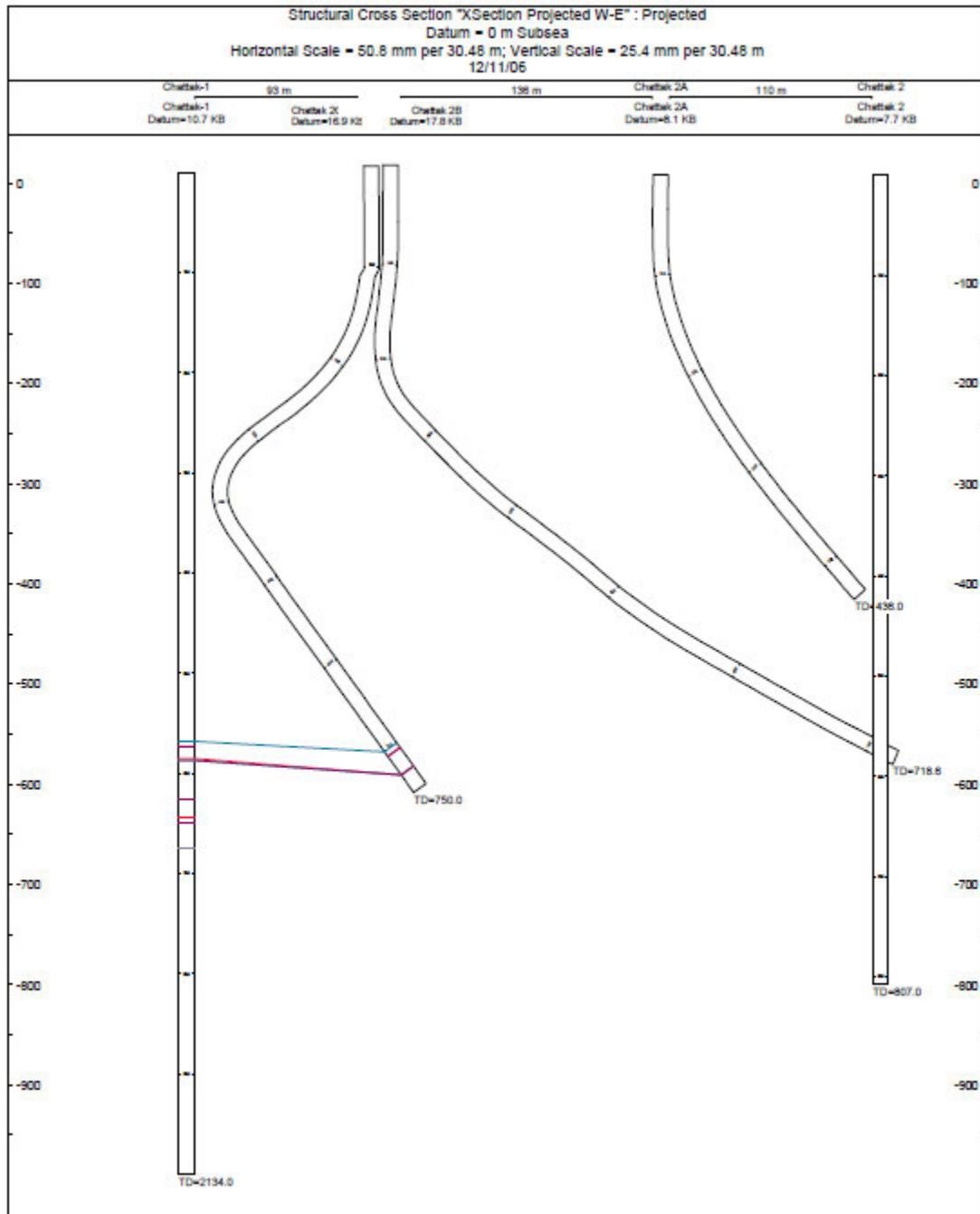


Figure 2: Well Trajectories – East to West Cross-section

143. The location of the wells can be seen on the following graphic representation of the Chattak West depth structure:⁵²

⁵² The figure is taken from the Feteke Report, Exhibit C-70, Figure 6, page 14.

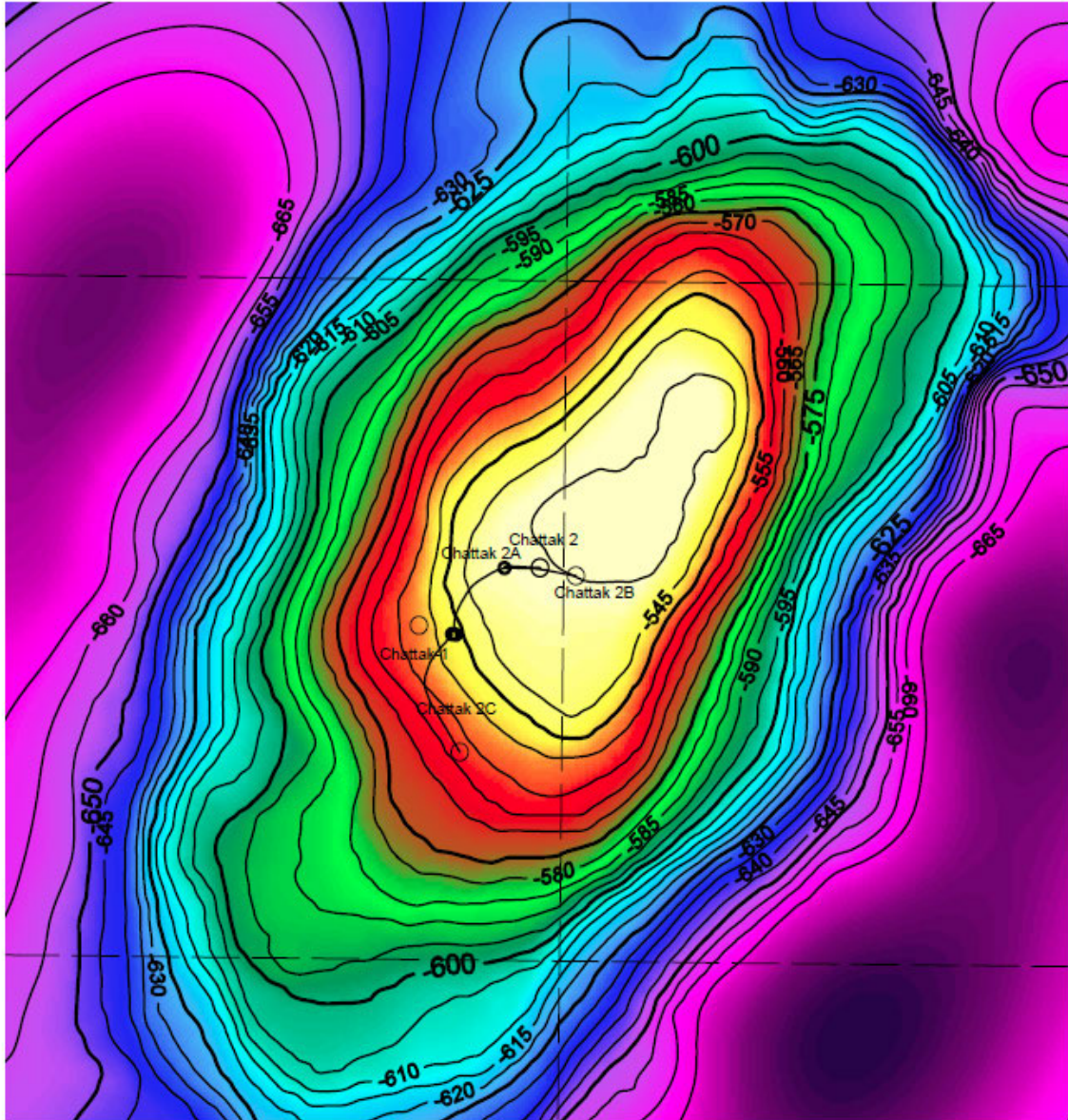


Figure 6: Chattak Seismic Depth Structure Map with Well Locations

144. Niko proposed to resume drilling in the Chattak field, drilling the **Chattak 3 Well** and to **re-enter the Chattak 2C** Data Acquisition Well. The proposal for Chattak 3 was first submitted on 3 May 2005 and revised after the second blowout. BAPEX approved the drilling programme for Chattak 3 on 2 August 2005 but did so “on the condition of Niko’s successful operations of the Chattak # 2B relief well”.⁵³ Niko then submitted a further revised version of the proposal on 16 October 2005 and introduced it as

⁵³ CMD, paragraph 332, quoting the letter of BAPEX dated 22 November 2005, Exhibit C-4.

follows: “Based on the lessons learned this is the final version of the Chattak 3 well.”⁵⁴

145. Following a meeting with BAPEX on 20 October 2005, Niko confirmed on 22 October 2005 the programme. It announced that, if work were allowed to proceed as soon as possible, production of gas could start by the end of 2005.⁵⁵
146. A further well was proposed shortly thereafter. Niko’s Revised **Chattak 4 Well** Proposal is dated “November 2005”. The proposals stated that the “primary target of the well will be the logged gas sands with tops at 560m MD and 615 MD discovered in Chattak-1 and also encountered at the ill fated Chattak-2 well”.⁵⁶
147. Niko summarised these proposals in a Development Concept, contained in a document of 2007:

There are two development wells proposed for the Chattak West area: Chattak 3, and the recompletion of Chattak 2C. The first well Chattak 3 will be drilled from the current surface location of the existing Chattak development site. Chattak 3 will be drilled to a depth of 1750 m and will be designed so that several zones can be tested starting with the deepest target, Sands 7 & 8.

The second development well, Chattak 2C will be a recompletion of the existing suspended Chattak 2C wellbore. A casing liner will be run to allow for completion of either Sands 1 or 2 depending on the results of the Chattak 3 well.

The third development well, the contingent well, Chattak 4 would be drilled should the recompletion attempt on Chattak 2C prove unsuccessful. Chattak 4 would be an 800 m TD well drilled if necessary to fully develop the shallow gas zones (Sands 1 & 2).⁵⁷

148. No agreement was reached between BAPEX and Niko in this regard.⁵⁸ Neither Chattak 3 nor any other well was drilled after October 2005. The

⁵⁴ Niko: Drilling & Evaluation Program, Chattak 3 Updated, 16 October 2005, Exhibit R-35.

⁵⁵ Letter from Niko to BAPEX, dated 22 October 2005, Exhibit C-276.

⁵⁶ Revised Chattak 4 Well Proposal, November 2005, Exhibit R-64.

⁵⁷ Niko proposal: Chattak West Evaluation and Commerciality, August 2007, Exhibit R-61, Section 3, Development Concept.

⁵⁸ WS Adolph, paragraphs 170 to 178; Letter from BAPEX’s to Niko, 22 November 2005, Exhibit C-4.

Claimant refers to further attempts to reach agreement on the development of the Chattak field. Niko had intervened with the Ministry of Power, Energy and Mineral Resources with the objective of obtaining approval for the development of the Chattak field. Following a meeting at the Ministry on 12 February 2006, Niko wrote to the Ministry on 13 February 2006 pointing out the following:

It is important to note that Niko is convinced that depletion of the reservoir at Chattak as soon as possible is an important step to ensure that any potential further gas losses [are] eliminated. We believe our partner Bapex shares this opinion and supports the need to move forward with drilling in Chattak.⁵⁹

149. Niko learned of the Ministry's position on this question at the **JMC meeting No 6 of 7 March 2006**, at which BAPEX informed Niko that the Government had approved the work programme of Chattak West but made this approval subject to a number of conditions which Niko did not accept.⁶⁰
150. Questions concerning the development of the Chattak field will be discussed in further detail below in Section 8.3.2 concerning the Claimant's set-off claim.
151. When the first blowout occurred, the local authorities in Tengratila and the Sylhet region took emergency action, as recorded in one of reports following the event:

Role of the Local Government:

The Local Administration, Police Administration, BDR Authority deployed sufficient police and BDR forces to ensure the security of the gas well area. The danger point has been marked by flying red flags, and the police administration has used loudspeakers to warn people not to enter the danger zone. It seems that it may be possible to ensure safety during daytime, but the same could not possible during night time.⁶¹

⁵⁹ Letter from Niko to Ministry of Power, Energy and Mineral Resources, 13 February 2006, Exhibit C-65.

⁶⁰ Minutes of the JMC meeting No 6, 7 March 2006, Exhibit C-66, and CMD, paragraph 354.

⁶¹ Report of the Committee for Estimation of Environmental and Forestry Losses, 17 January 2005 (attachment to Annex R-2(bis) and, in a different translation Annex R-1).

152. The local authorities also gathered information about the damage that had occurred following the blowout and organised repair and relief. They cooperated with Niko which made payments to the local population and institutions, as shall be discussed in further detail below in Section 10.2.
153. The local and national authorities also organised a series of **investigations for the assessment of the damage** and prepared **reports** on the results. BAPEX described these investigations in the annex to its Counter-Memorial concerning the Compensation Declaration of 30 January 2014;⁶² and the Claimant discussed them in its Reply of 29 May 2014.⁶³ They are also discussed in other submissions. The investigations and the reports on them can be grouped according to subject matter as follows:
154. The **causes of the two blowouts** were examined by
- (i) An Enquiry Committee that produced an “Enquiry Report on Blowout of Well Chattak No. 2 on 7 January 2005”, the report is dated 7 February 2005 (referred to below as the “**First Enquiry Report**”);⁶⁴
 - (ii) A second Enquiry Committee examining the causes of the blowout of the relief well Chattak 2A; it produced a report on “The Blowout of Relief Well Chattak 2A (24th June 2005)”, dated 13 August 2005 (referred to as the “**Relief Well Enquiry Report**”).⁶⁵
155. The **losses of gas** were examined by:
- (i) The Committee for Estimating Gas Losses caused by Blowout in Chattak-2, which produced its report on 4 June 2005 (**First Lost Gas Report**);⁶⁶

⁶² B-CD.1, Annex: Investigations into the blowouts and their consequences.

⁶³ Niko’s Reply concerning the Compensation Declaration, 29 May 2014 (C-CD.2).

⁶⁴ First Enquiry Report, Exhibit R-3.

⁶⁵ Report of the Enquiry Committee on the Blowout of Relief Well Chattak 2A, 13 August 2005, Exhibit R-6.

⁶⁶ Report of the Committee for Estimating Gas Losses Caused by Blow-out in Chattak 2, 4 June 2005, Exhibit R-2.

- (ii) The Committee for Estimating Gas Losses Caused by Chattak 2A Relief Well Blowout, which produced its report on 27 August 2005 (**Second Lost Gas Report**).⁶⁷

156. The **environmental losses** were examined by:

- (i) The Committee for Estimation of Environmental and Forestry Losses caused by the fire created in Tengratila Gas Field in Sunamgonj which produced its report dated 17 January 2005 **First Environment Losses Report**;⁶⁸
- (ii) The Committee formed to estimate the amount of environmental losses caused by blowout explosion in Tengratila Gas Field, which produced its report dated 13 April 2005 (**Second Environmental Losses Report**);⁶⁹
- (iii) The Committee formed to estimate the amount of environmental losses due to the second blowout in Chattak Gas Field (Tengratila) of Doarabazar Sub-District of Sunamganj District, which produced its report dated 15 September 2005 including also losses caused by the first blowout (**Third Environmental Losses Report**).⁷⁰

157. The so called “**Local Losses**” were examined by the “Committee formed to estimate the amount of local losses due to the fire in Tengratila Field”, with the Deputy Commissioner, Sunamganj, as convener. Its report was produced on 8 June 2005 (**Local Losses Report**).⁷¹

158. Niko, too, presented a number of reports, including a report on the gas losses by the Canadian consultant Fekete Associates Inc. (the **Fekete**

⁶⁷ Report of the Committee for Estimating Gas Losses Caused by Chattak 2A Well Relief Well Blowout, 27 August 2005, Annex R-4.

⁶⁸ Report of the Committee for Estimation of Environmental and Forestry Losses Caused by the Fire Created in Tengratila Gas Field, 17 January 2005 (First Environmental Losses Report), Exhibit Annex R-1; also produced as annex to the Second Environment Losses Report (Annex R-2(bis)) in a different translation.

⁶⁹ Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blow-out Explosion in Tengratila Gas Field, 13 April 2005 (Second Environmental Losses Report), Exhibit Annex R-2.

⁷⁰ Report of the Committee Formed to Estimate the Amount of Environmental Losses due to 2nd Blowout in Chattak Gas Field, 15 September 2005 (Third Environmental Losses Report), Exhibit Annex R-5.

⁷¹ Committee formed to estimate the amount of local losses due to the fire in Tengratila Field, 8 June 2005 (Local Losses Report), Exhibit Annex R-3(bis).

Report),⁷² dated 8 December 2006. It relied on this report in an assessment of the commercial viability of the remaining reserves in Chattak West (the **Commerciality Report**)⁷³ which it submitted to BAPEX on 1 July 2007.

159. Niko monitored and assessed the environmental situation. It explained:

*Throughout the period following the first blowout, until early 2008, Niko retained independent environmental consultants to assess, record and monitor any environmental impacts from the two blowouts. [...] The team of consultants produced a series of bi-weekly and monthly reports, which were transmitted to BAPEX.*⁷⁴

160. Randal Glaholt, who led this team of consultants described the scope of the monitoring programme in a witness statement. The Claimant also produced some of the 20 **Environmental Monitoring Reports**, as listed in this witness statement, prepared by TERA Environmental Consultants, Canada, Mr Glaholt's company, and Crown Agents, UK.⁷⁵ This monitoring activity is discussed in further detail below in Section 10.2.2. The Respondents criticise Niko's monitoring and the reports as inadequate and argue that, in order to make up for Niko's insufficiencies in this respect, they must conduct their own monitoring and surveying programme (see below Section 10.6).

161. The Government of Bangladesh and Petrobangla, following a legal notice of 27 May 2008, initiated on 15 June 2008 legal action in the Court of District Judge, Dhaka against Niko and others. The proceedings, referred to as the **Money Suit**, and other court proceedings in Bangladesh related to Niko, have been discussed in previous Decisions of the Tribunal, most recently in Sections 2.5 and 2.6 of the Decision on the Corruption Claim and in the Decision on Liability. In paragraph 214 of the latter decision the Tribunal noted that the latest information it had about the proceedings in the Money Suit was that it is "now pending". No further information about the Money Suit has been received by the Tribunal since then.

⁷² Fekete Report, Exhibit C-70,

⁷³ Letter from Niko to BAPEX, attaching Chattak West Commerciality Report, 1 July 2007, Exhibit C-72.

⁷⁴ C-CD.2, paragraphs 145-146.

⁷⁵ E.g. Tera's Environmental Site Inspection Report, 26 January 2005, Exhibit C-25, and Crown Agents and Tera Consultants Biweekly Reports, the first of which dated 28 February 2005, Exhibit C-29.

162. In the Money Suit, the Government and Petrobangla claim compensation for “losses sustained due to burning of gas and destruction of mineral resources and natural resources which are mainly losses of movable property”.⁷⁶ These losses relate to the two blowouts in the Chattak field and are for a total of Taka 746.50 crore, corresponding according to Niko to approximately USD 106 million.⁷⁷ The claimed amounts are presented in the following schedules:

Schedule A, Gas burnt at Chattak field: Taka 36.85 crore (USD 5’250’040)

Schedule B, Subsurface loss at Chattak field: Taka 72.35 crore (USD 10’307’740)

Schedule C, Additional subsurface loss at Chattak field: Taka 552.75 crore (USD 78’750’530)

Schedule D, Environmental Losses at Chattak Gas Field: Taka 8455,83,973 (USD 12’047’070).⁷⁸

163. The Claimant’s request for the Compensation Declaration relates to these claims. The relation specifically to the Environmental Losses is discussed in further detail below in Section 10.3.

⁷⁶ Complaint, *People’s Republic of Bangladesh v. NIKO Resources (Bangladesh) Ltd.*, Money Suit No. 224/2008 (2d Court of Joint District Judge) (Bangl.)(Money Suit Complaint), Exhibit C-6, paragraph 65.

⁷⁷ Based on OANDA for 27 May 2008, see C-CD.2, paragraph 192.

⁷⁸ Money Suit Complaint, Exhibit C-6, pages 76 and 77; the US Dollar equivalents were calculated by the Claimant using the exchange rate in the Money Suit of Tk 70.19 per USD (C-CD.2, paragraph 195 and footnote 255).

6. THE SCOPE OF THE PRESENT DECISION

164. Following the Tribunal’s Decision on Liability, the Parties intended to address the consequences to be drawn from that decision on the heads of loss and damage for which Niko is liable (“heads of recoverable loss”).⁷⁹
165. As mentioned above in Section 3, in Procedural Order No 24 of 3 April 2020 the Tribunal decided that, following the submission of the Claimant’s Counter-Memorial on Damages and the Respondents’ Amendment to the 2016 Memorial on Damages, a hearing was to be held, later fixed to be held on 19 and 20 November 2020. The Tribunal identified as specific subject for that hearing “**identifying the recoverable heads of loss in light of the Tribunal’s findings**” in the Decision on Liability. The Tribunal announced its intention to determine, in the decision following the hearing, “which heads of loss are recoverable in principle, applying the Tribunal’s rulings in the Decision on Liability”.⁸⁰
166. As mentioned above, the Tribunal presented to the Parties proposed Agenda Items for the Hearing. These items were then discussed in a Pre-Hearing Conference with the President of the Tribunal on 4 November 2020 and agreed in part. The issues that had not been agreed were resolved by Procedural Order No 25 of 15 November 2020.
167. Procedural Order No 25 confirmed that the objective of the adopted structure of the proceedings during this phase of the arbitration was:
- ... by identifying which claimed losses were recoverable in principle, so as to avoid costly and time consuming expert and factual investigations and submissions on quantum with respect to claims which would fail on the legal ground.*⁸¹
168. The Tribunal clarified that the Agenda concerned “all claims of BAPEX and the question whether the claims are recoverable in principle. If the Claimant ‘den[ies] recoverability’, its argument at the Hearing is not limited to specific grounds of its denial”, and confirmed the Agenda.
169. At the November 2020 Hearing the scope of the argument and of the Decision on Recoverable Loss was addressed again. The Respondents

⁷⁹ See Procedural Order No 24, paragraph 5.

⁸⁰ Procedural Order No 24, paragraphs 12, 14.

⁸¹ Procedural Order No 25, paragraph 11.

addressed the question of the scope of the Hearing and the scope of the forthcoming decision at the outset of the Hearing and the matter was clarified in discussion between the Tribunal and the Parties:

170. The Tribunal pointed out again that, as determined in **Procedural Order No 24**, issues which required additional factual evidence and expert opinions were not to be addressed at the Hearing and thus would not be decided in their forthcoming Decision.
171. The Summary Minutes of the Hearing, as finalised after consultation with the Parties, summarise the understanding:

In their Decision on Recoverable Heads of Loss [the Tribunals] would examine the claimed loss on the basis of the facts as alleged by the Party asserting that a Head of Loss is recoverable and would determine whether, assuming the alleged facts were correct, the claimed loss was recoverable as a matter of law. Some of the underlying factual assumptions were discussed at the Hearing. The Tribunals confirmed that the objective of the Hearing was to examine “what is compensable”. The Respondents insisted that “the Tribunals must refrain from making any Decision that depends on the resolution of a disputed fact until the full evidentiary Proceeding on Liability is completed”; they announced that, to the extent possible, they would identify in their presentation at the Hearing disputed facts that “must be determined in further evidentiary proceedings”.⁸²

172. The Respondents’ counsel announced at the outset of the Hearing that “to the extent possible in the time available, I will identify during my presentation the disputed facts that, from BAPEX’s perspective, must be determined in further evidentiary hearings”.⁸³
173. In view of this understanding as confirmed at the Hearing, the present Decision will determine Niko’s liability in principle for the claims presented by the Respondents. Where this requires the consideration of facts, the Tribunal will rely only on facts that are not contested and when contested facts must be considered, the Tribunal will assume that the Respondents’ allegations are correct.

⁸² Summary Minutes of the November 2020 Hearing, paragraph 24. The Respondents argument in this respect is recorded primarily at HT (Day 1), pages 9 – 12.

⁸³ HT (Day 1), page 12.

174. These assumptions are of course not factual findings. To the extent they remain relevant for the decision on claims that are admitted in principle, they will have to be proven in the next phase of the proceedings like any other contested fact that is relevant for the Tribunal’s decision. The Claimant emphasised, specifically in the context of the Lost Gas Claim, that “the Factual and Expert Opinions that have been presented by BAPEX in support of its Claim [...] are [...] highly disputed as set out in Niko’s Counter-Memorial on Damages”, adding:

*... we are proceeding with this Hearing today on the basis of an assumption that BAPEX can establish those facts as pled.*⁸⁴

175. In Procedural Order No 24, the Tribunal also announced its intention “to decide the **other requests** that it has identified above for the Parties’ submissions”.⁸⁵ The other requests identified in the Procedural Order were:

- (i) a request by the Respondents that the agreed procedure be modified to accommodate a “full assessment of environmental damage” by their experts; and
- (ii) a set-off claim by the Claimant.

176. The first of these requests is addressed below in Section 10.6.3 in the context of the Tribunal’s decision on the Respondents’ third head of claim.

177. With respect to the **Claimant’s set-off claim**, it was decided at the Pre-Hearing Conference of 4 November 2020 and confirmed in Procedural Order No 25 that the claim

*... will be limited to the admissibility of the Claimant’s set-off defence and the Tribunals’ jurisdiction over it. If the Tribunals determine in the forthcoming Decision on Recoverable Heads of Loss that the set-off defence is admissible, liability and quantum of that defence will be subject of the final phase of these arbitrations.*⁸⁶

178. At the Hearing the Parties argued the issue of “admissibility” primarily by reference to the ICSID Convention and Arbitration Rules and to the law of Bangladesh concerning time bar.⁸⁷ The Tribunal decides this claim below

⁸⁴ HT (Day 1), page 125.

⁸⁵ Procedural Order No 24, paragraph 14.

⁸⁶ Procedural Order No 24, paragraph 36 (i).

⁸⁷ Summary Minutes of the November 2020 Hearing, paragraph 31.

in Section 12, within the limits of the Parties' arguments at the Hearing. It will not address the merits of this claim.

7. CRITERIA FOR DISTINGUISHING RECOVERABLE FROM EXCLUDED LOSSES

180. When the Tribunal, in the Decision on Liability, concluded that Niko had breached its obligations as Operator under the JVA, it examined the Parties' argument concerning the scope of the resulting liability and its limitations. It held that Niko must compensate BAPEX for direct loss and damage caused by the first blowout and invited further argument with respect to each of the other claimed losses.
181. Before addressing the Parties' explanations with respect to each of these losses, the Tribunal examines possible criteria for distinguishing compensable from excluded losses. It will first summarise some of the conclusions it had reached in the Decision on Liability and will then examine the argument developed by the Parties since then.

7.1 Determinations in the Decision on Liability

182. In the Decision on Liability the Tribunal considered the Parties' argument concerning the scope of Niko's liability under the law of Bangladesh and specifically under Section 73 of the Bangladesh Contract Act 1872 (the Contract Act).⁸⁸ It also considered the limitations and exclusions of liability resulting from Section 73, second paragraph, of the Contract Act and from Article 27.2 of the JVA.
183. The Tribunal considered **Section 73 of the Contract Act**, which is understood to reflect the principles set out in the familiar English case of *Hadley v. Baxendale* (1854).⁸⁹ The provision reads as follows:

Compensation for loss or damage caused by breach of contract

73. When a contract has been broken, the party who suffers by such breach is entitled to receive, from the party who has broken the contract, compensation for any loss or damage caused to him thereby, which naturally arose in the usual course of things from such breach, or which the parties knew, when they made the contract, to be likely to result from the breach of it.

⁸⁸ Bangladesh Contract Act of 1872, CLA-4.

⁸⁹ *Hadley & Anor v. Baxendale & Ors*, Judgment, 9 Ex. Ch. 341, 23 February 1854, CLA-42.

Such compensation is not to be given for any remote and indirect loss or damage sustained by reason of the breach.

184. As the matter had been regulated by statute, the Tribunal noted that the principal reference was the statute and its interpretation by the courts of Bangladesh; cases from other common law jurisdictions were of limited relevance.⁹⁰ The Tribunal also noted that the Parties had not identified any decision by the courts of Bangladesh that provides guidance for the application of Section 73 of the Contract Act, apart from a reference to *Hadley v. Baxendale* in a High Court decision of 1997. Considering the statute, the Tribunal found:

Section 73 of the Contract Act is clear on its face insofar as, in the first paragraph, it specifies the two types of losses or damage that must be compensated in case of a breach, those which naturally arise and those known by the parties to be likely. The former are recoverable whether or not the particular defendant was conscious of the consequences (because contract breakers are held to what the reasonably expected consequences of their acts), whereas the latter, often referred to as “special”, require proof of specific contextual understanding of the parties.⁹¹

185. With respect to the second paragraph of Section 73, the Tribunal found:

The second paragraph of Section 73 excludes “such compensation”, i.e. compensation provided by the preceding paragraph. It follows that even where the specific contextual understanding was that a particular type of damage might flow from non-performance, it will nevertheless not be recoverable if it is “remote and indirect”.

... the Tribunal will apply Section 73 as it is written; even loss or damage which the parties knew would likely arise in a case of breach is excluded if remote and indirect.⁹²

186. Against this background of the scope of liability under the law of Bangladesh, the Tribunal considered the limitation of that liability agreed by the Parties in the JVA. The limitation is contained in **Article 27 of the JVA**, entitled “Health, Safety & Environment (HSE)”, which in the relevant

⁹⁰ Decision on Liability, paragraph 1014.

⁹¹ Decision on Liability, paragraph 1016.

⁹² Decision on Liability, paragraph 1018 and 1019.

parts reads as follows, the exclusion provision in issue here being highlighted:

27.1 While conducting Petroleum Operations, OPERATOR shall take necessary measures in accordance with generally accepted standards of the international petroleum industry, for conservation, safety of life, property, crops, fishing and fisheries, navigation, protection of environment, prevention of pollution and safety and health of personnel, including but not limited to:

[...]

*27.2 Bear responsibility in accordance with laws applicable in Bangladesh for any loss or damage to third Parties caused by the wrongful or negligent acts or omissions of the OPERATOR or the OPERATOR employees or sub-Contractor's or sub-Contractor's employees and indemnify BAPEX and the Government against all claims and liabilities in respect thereof. **Under no circumstances shall a Party be liable to the other Party for any consequential loss or damage including but not limited to lost profits or lost production or other consequential loss or damage resulting from pollution.** (Emphasis added).*

187. Having considered the Parties' conflicting interpretations of the exclusion provision, the Tribunal concluded:

... that the second sentence in Article 27.2 of the JVA concerns liability in general. It does not concern merely liability with respect to the indemnities in the preceding sentence and is not restricted to loss or damage resulting from pollution.⁹³

188. The Parties disagreed as to the meaning of the words "consequential loss or damage" and argued the issue at length by reference to cases and other authorities in various common law jurisdictions. In particular, the Respondents treated the words "consequential" and "indirect" as synonymous. They asserted:

⁹³ Decision on Liability, paragraph 1038.

When inserted in an exclusion clause, the word “consequential loss” has an established meaning under English law. That is to say, “consequential” is considered equivalent to the word “indirect”.⁹⁴

189. Having reviewed these authorities, the Tribunal concluded that “there is no ‘established meaning’ on which the Tribunal may rely when applying [the limitation] provision in the present case. The clause must be considered specifically in the context of the JVA”.⁹⁵
190. When examining the specific context of the JVA, the Tribunal noted that it was a contract quite different from those which had been considered in the cases on which the Parties relied in their argument; these were contracts of sale, supply and installation of industrial equipment, charter of ships and similar contracts providing the supply of goods or services against payment. The present contract is a joint venture for the conduct of petroleum operations. The JVA itself highlighted some aspects of this specificity: In the JVA the two parties combine their efforts for a common object, defined in Article 2.1:

This is a Joint Venture Agreement, the object of which is the Development and Production of Petroleum from the Marginal/Abandoned gas fields Chattak and Feni as specified in Article 3 at OPERATOR’s sole risk and expense. All actions taken and operations conducted shall be in consideration to the requirement and applicability of such operations for a Marginal/ Abandoned field.

191. Paragraph 5 of the JVA Preamble highlights some specificities of this development:

Development of Marginal/ Abandoned gas fields require certain unique approach to cost control, technology application, economic and risk structure as compared to the development of a discovered gas field, which has not been produced.

192. The Tribunal considered the Claimant’s reference to the “inherently dangerous” nature of petroleum operations and the “unique approach” required in case of marginal/abandoned gas fields. The Claimant had asserted: the “JVA reflects the Parties’ agreement on a comprehensive liability limitation regime to balance the risk of an incident against the need

⁹⁴ BAPEx’s Post-Hearing Brief, 22 January 2016 (R-PHB), paragraph 248.

⁹⁵ Decision on Liability, paragraph 1098.

to control costs and manage a marginal field”.⁹⁶ The Tribunal also noted the Claimant’s reference to the almost identical wording of an article in a contract that BAPEX had concluded in 2001 with three IOCs and the observation that the drafters of Article 27.2 did not have in mind a 19th century English case or 20th century English cases; they were “oil men and administrators, not lawyers”. They intended, so the Claimant, “to exclude specific types of damages, including lost production and damages from pollution, they may be the consequence of a contractual breach”.⁹⁷

193. The Tribunal also referred to the Respondents’ emphasis on the precautions an operator must take to face the risks of petroleum operations and noted that the Respondents contested that Article 27.2 provided a “comprehensive liability limitation regime”. The Respondents also had referred to the exclusions and indemnities in Article 20.1 and 20.2 of the JVA, describing them as a “knock-for-knock” provision “typical for oil and gas joint operating agreements”.⁹⁸ In this context the Tribunal noted that Article 20.1 and 20.2 of the JVA qualified the term “consequential losses” by the words “associated with or arising from” physical loss or damage.⁹⁹ The Tribunal noted, however, that these provisions were not directly relevant.¹⁰⁰

194. Having weighed the Parties’ argument and the authorities on which they relied, the Tribunal concluded that by qualifying the exclusion of liability with the terms “consequential” the Parties intended to preserve liability for some loss or damage, lost profit and lost production and loss or damage resulting from pollution. The Tribunal was not provided with any “basis for distinguishing the loss or damage that remains compensable under Article 27.2 from that which is compensable under section 73, first paragraph” of the Contract Act.

195. The Tribunal considered the relationship between the exclusion clause in the JVA and the liability under Section 73 of the Contract Act. As liability

⁹⁶ Decision on Liability, paragraph 1103, quoting Claimant’s Post Hearing Brief, 22 January 2016 (C-PHB), paragraph 8.

⁹⁷ Decision on Liability, paragraphs 1102, 1103 and 1112, quoting HT 2016.02.22, pages 306 – 307.

⁹⁸ Decision on Liability, paragraph 1104, quoting R-PHB, paragraph 237.

⁹⁹ Decision on Liability, paragraphs 1104 – 1106; Article 20.1 (b) of the JVA excludes claims by BAPEX against Niko and for “any physical loss or damage to BAPEX facilities (and any loss including consequential losses associated with or arising from such loss or damages)” and Article 20.2 (b) of the JVA has the same exclusion for claims by Niko against BAPEX.

¹⁰⁰ See also below Section 10.5.2 for the Tribunal’s position on the Claimant’s argument based on the knock-for-knock provision in a different context.

for “indirect loss or damage” is excluded already by Section 73, the Claimant argued that the exclusion of “consequential loss or damage” in Article 27.2 of the JVA must have a different meaning, providing exclusion beyond what is provided in the Contract Act; otherwise, the exclusion in Article 27.2 “would serve no purpose”. Considering the international context of the JVA and the parallel clause in the PSC with the three IOC and the absence of any reference to Section 73 of the Contract Act, the Tribunal dismissed this argument: “It may well be that drafters of the exclusion clause in that PSC wanted to provide a limitation of liability without considering the otherwise applicable law and used language they considered appropriate for that effect. The resulting redundancy is nothing unusual in international contracts”.¹⁰¹

196. The Tribunal concluded on the distinction between indirect and consequential: “Subject to any explanations that may be provided by the Parties in their argument on quantum, the Tribunal thus will have to treat the two expressions as synonymous”.¹⁰²

7.2 The Parties’ subsequent argument

197. Considering the facts and argument presented by the Parties, it appeared obvious to the Tribunal that “the gas that escaped from the Chattak 2 well as part of the first blowout and the corresponding loss of production are direct losses cause by Niko’s breaches”. In its Decision on Liability, the Tribunal invited the Parties to address in their subsequent submissions the other claimed losses and the question whether each of them fell within an excluded category or not.¹⁰³
198. Having received the Parties’ written submissions in the fall of 2020, the Tribunal summarised, before the November 2020 Hearing, its understanding of the Parties’ respective positions. The Tribunal noted the agreement by the Parties¹⁰⁴

... that [...] “the correct approach to the assessment of damages is to put the injured party in the position it would have been in had the contract breach not occurred (that is, had the contracted duty that was

¹⁰¹ Decision on Liability, paragraph 1115.

¹⁰² Decision on Liability, paragraphs 1114 and 1118.

¹⁰³ Decision on Liability, paragraphs 1150 and 1151.

¹⁰⁴ Tribunal’s questions for the November 2020 Hearing.

breached been properly performed)".¹⁰⁵ Apparently, the Parties draw different conclusions from this definition of the correct approach (also referred to by the Respondents by the term *restitutio in integrum*) from this approach when it comes to determine the scope of the exclusion of "any remote and indirect loss or damage" under Section 73 of the Contract Act and of "consequential loss or damage" under Article 27.2 of the JVA.

The Claimant also argues that the exclusion under section 73 of the Contract Act and that under Article 27.2 of the JVA are different. It concludes that "the combination of a contractual exclusion of consequential loss and the statutory exclusion of 'remote and indirect' loss leaves a claimant with an entitlement to recover only direct loss or damage that is not dependent upon any 'special circumstances' known by or communicated to the defendant".¹⁰⁶ In a concise statement as to the excluded categories of excluded losses, the Claimant considers as excluded

(a) Any loss and damage requiring proof of special circumstances being known by, or communicated to Niko;

(b) Any loss and damage that is not the direct or immediate result of the breach, but instead arises from something set into operation by the breach, or which is contributed to by a supervening cause.¹⁰⁷ (Emphasis in original).

199. With this understanding in mind, the Tribunal addressed to the Parties the following questions:

Question to the Respondents:

Do you agree with the Claimant's definition of the exclusion of liability in the present case? If not, what alternative definition do you propose?

Questions to both Parties:

¹⁰⁵ CMD, paragraph 23, referring to BAPEX's Memorial on Damages, 25 March 2016 (BMD), paragraph 172.

¹⁰⁶ CMD, paragraph 49.

¹⁰⁷ CMD, paragraph 56.

What is the relationship between restitutio in integrum and the exclusion clauses?

*Are there any cases in which losses as they are claimed by BAPEX have been excluded as indirect or accepted as direct?*¹⁰⁸

200. **At the Hearing, the Respondents** referred to the principle on which the Parties agree and according to which the injured party must be put into the position it would have been but for the contract breach. They quoted from the decision in **Bangladesh Water v. Titlas Pokaushali** where the court described the principle as “universally followed by all the courts [...] the doctrine of restitution in integr[u]m which really means that Court will endeavour to put the parties as equally as possible to the position/situation had there been no breach of contract”.¹⁰⁹ They also refer to a similar statement in **M/s. Amin Jute Mills Ltd. v. M/s A.R.A.G. Ltd.**¹¹⁰
201. The Respondents conclude from these decisions that “the exclusion of liability for harm that is remote or indirect must be applied so as not to frustrate this primary goal”.¹¹¹
202. Concerning the definition of the exclusion of liability, the Respondents reply to the Tribunal’s question: “BAPEX rejects Claimant’s definition of the exclusion of liability in its entirety”.¹¹² In particular, the Respondents object to part (b) of the Claimant’s definition according to which, in the Respondents’ reading, “loss is excluded if there is an intervening cause”.¹¹³ The Respondents rely on the decision in the **Amin Jute Mill** case and specifically the following passage:

Remoteness in space and time and the number of intervening events have obvious bearing on foreseeability, but neither any particular

¹⁰⁸ Tribunal’s questions for the November 2020 Hearing, questions 1 – 3.

¹⁰⁹ *Bangladesh Water Development Board v. M/S. Titas Prokaushali Limited*, Supreme Court of Bangladesh (High Court Division), 2006 26 BLD 407, RLA-135, paragraph 47, quoted at HT (Day 1), pages 13 – 14 and Respondents’ Presentation, 19 November 2020, Slide 4.

¹¹⁰ *M/s. Amin Jute Mills Ltd. v. M/s. A.R.A.G. Ltd.*, Supreme Court of Bangladesh (Appellate Division), 28 DLR(AD) (1976) 76, Judgment, 31 July 1975 (*Amin Jute Mills*), RLA-452, paragraph 7.

¹¹¹ HT (Day 1), page 16.

¹¹² HT (Day 1), page 17.

¹¹³ HT (Day 1), page 27.

*degree of remoteness, nor any maximum number of events can be established to set a limit in the law of contract.*¹¹⁴

203. The Respondents conclude from this passage:

*This clearly means that the mere existence of intervening events, even multiple intervening events, does not exclude liability. [...] Part B of Niko's rule [...] is inconsistent with established Bangladeshi case law.*¹¹⁵

204. In response to the Tribunal's question concerning the alternative definition, the Respondents propose:

*... the correct approach here is clear: BAPEX agrees with the Tribunals that, under Bangladeshi law, there is "no basis for distinguishing the consequential loss or damage as excluded by Article 27.2 of the JVA from remote and indirect loss in Section 73 of the Contract Act, second paragraph."*¹¹⁶

205. When questioned about ***Transfield Shipping Inc v. Mercator Shipping Inc*** (2008),¹¹⁷ the Respondents quoted the words of Lord Hoffman:

*Before damages may be considered, it must first be decided whether the loss is the kind or type for which the contract breaker ought to have fairly been taken to have accepted responsibility.*¹¹⁸

206. The Respondents consider the case as inapplicable in these proceedings and say that, in any event, "the vast majority of courts have rejected the assumption of responsibility test as articulated by Lord Hoffman".¹¹⁹ They also explain the decision on *Transfield Shipping* "merely attempts to refine the requirement of reasonable foreseeability and stands for the proposition that laws [recte: loss?] cannot be foreseeable if the defendant could not have assumed responsibility. And the defendant cannot have assumed responsibility for loss that is 'completely unquantifiable at the time of the

¹¹⁴ *Amin Jute Mills*, RLA-452, paragraph 8, quoted at HT (Day 1), page 27 and Respondents' Presentation, 19 November 2020, Slide 17.

¹¹⁵ HT (Day 1), pages 27 – 28.

¹¹⁶ HT (Day 1), page 28.

¹¹⁷ *Transfield Shipping Inc. v. Mercator Shipping Inc. (The Achilleas)*, [2008] 4 All ER 159, RLA-93.

¹¹⁸ HT (Day 2), page 335.

¹¹⁹ HT (Day 2), page 337.

breach”. In the present case, the “losses suffered by BAPEX and the Government were easily foreseeable and quantifiable”.¹²⁰

207. The Respondents discussed a number of other cases from different jurisdictions concerning the meaning of “consequential loss or damage” and “remote and indirect loss”. They conclude:

So, the factors that the Tribunals must consider in determining what is "direct loss" are, one, was the loss foreseeable at the time the JVA was concluded? And, two, was the loss not an unlikely result of the breach--that is, was it a likely result of the breach?

And in Heron, it indicates that the probability is something less than a 50/50 chance. So, it just needs to be a not unlikely result of the breach.

Beyond that, there is not a way to give fixed rules that are bright-line rules. Niko has attempted to set out a bright-line rule that, if there is any intervening cause, that excludes liability, makes it indirect. But under Bangladeshi law, intervening causes do not automatically exclude Bangladeshi law and must be assessed as to their effect on foreseeability and the likelihood of the--that the breach will result in the damage.¹²¹

208. The Respondents clarified:

... in my statement, it should be that the loss was reasonably foreseeable at the time of the JVA.¹²²

209. The Respondents’ presentation on this issue was concluded by the following exchange with the Tribunal:

ARBITRATOR McLACHLAN: Thank you. And on the point that you just concluded on--which is, well, what guidance can you or, in your submission, Bangladeshi law give us in drawing this distinction--is it right, then, to understand that the consequence of this is that the Tribunal must simply do--in your submission, do the best that it can with that distinction, which inevitably requires the Tribunal to exercise

¹²⁰ HT (Day 2), page 336.

¹²¹ HT (Day 2), page 339.

¹²² HT (Day 2), page 341.

within the framework of that rather broadly stated test a discretion as to where on the sliding scale particular damages might fall?

MR SMITH: I think that, indeed, within the bounds of the test of likelihood and foreseeability, I do not see a way, given the complexity of factual situations that exist in contracts, to create a bright-line rule. [...] and even looking at the case law in the multiple attempts, I don't see one that has been established.

And I think it really is--I don't know if "discretion" is the right word, but certainly an assessment of the facts and the use of the Tribunal's judgment on those facts.

ARBITRATOR McLACHLAN: A matter of appreciation, rather than—

*MR. SMITH: Yes.*¹²³

210. **The Claimant** agrees with the Respondents that, in determining compensation for breach of contract, the principle is to put the injured party in the position it would have been had the breach not occurred; but that principle, in the Claimant's view,

*is merely the framework for determining the scope of recoverable damages, and that framework is circumscribed by the exclusion clauses which should be applied in accordance with the cited English cases and Indian Authorities. [...] these exclusion clauses circumscribe absolutely and on their terms the scope of recoverable losses ...*¹²⁴

211. The Indian authorities on which the Claimant relies, in the opinion of the Claimant, are particularly relevant as the Indian Contract Act, enacted in 1872 was re-enacted without changes by the Parliament of Bangladesh as the Bangladesh Contract Act, following the country's independence in 1971.¹²⁵ The Claimant's references include the commentary on the Indian Contract Act by **Pollock and Mulla** from which they had quoted already in the CMD:

Unless the circumstances of special damages have been brought to the notice of the other party at the time of entering into the contract, no claim can be made for special damages even if loss is caused. If

¹²³ HT (Day 2), pages 341 -343.

¹²⁴ HT (Day 2), page 122.

¹²⁵ CMD, paragraph 31, with references.

the aggrieved party wants to make the defaulting party liable for special damages he must allege and prove and satisfy the second part of s.73, viz., that the defaulting party knew the loss or damage when they made the contract to be likely to result from the breach of it. In both cases the rule that the compensation cannot be given for a remote or indirect loss sustained by reason on the breach, applies.

and

*Consequential damage or loss usually refers to pecuniary loss consequent on physical damage, such as loss of profit sustained due to fire damage in a factory. [...] When used in an exemption clause in a contract, 'consequential' refers to damage which is only recoverable under the second head in *Hadley v Baxendale*, and does not preclude recovery of loss of profits under the first head in that case.¹²⁶*

212. As the Respondents contested the relevance of Indian authorities and of this book, the Claimant quotes from a decision of the Bangladesh Supreme Court, Appellate Division, which quotes Pollock and Mulla, precisely on an issue of the measure of damages and Section 73 of the Contract Act.¹²⁷ More generally, the Claimant cites other authorities to show the relevance of Indian and English authorities in the courts of Bangladesh.
213. The Claimant discusses in some detail the decision in the **Amin Jute Mills** case, quoted above, on which the Respondents relied to argue that the mere existence of intervening events, even multiple intervening events, does not exclude liability. The Claimant points out that this decision does not address a contractual exclusion of consequential loss; and it quotes from the decision:

... in referring to what may be recovered under Section 73, the Court stated: "Consequence must be proximate and natural. 'Natural' in this connection means 'usual.'" It noted, as BAPEX noted this morning, "Remoteness in space and time and the number of intervening events have obvious bearing on foreseeability." Thus, the Court recognized that intervening events have an obvious bearing on

¹²⁶ R.Y. Vardhan, C. Narayan, *Pollock & Mulla: The Indian Contract and Specific Relief Acts* (16th ed. 2019), CLA-256, at 1116 – 1119, quoted in CMD, paragraphs 34 and 35.

¹²⁷ *The Project Director, P.L. and another v. A. Latiff Company Ltd.*, Bangladesh Supreme Ctourt (Appellate Division) 2014 BLD(AD) 34, RLA-136, p. 199, quoted at HT (Day 1), page 116 and Claimant's Presentation, 19 November 2020, CH-1, Slide 11.

foreseeability. I would accept, as BAPEX notes--or Niko accepts, as BAPEX noted this morning, that the Court also recognized that no maximum number of events can be established to set a limit in the law of contract.

However, the Court did recognize intervening factors or governing circumstances are not absolute rulings. In effect, what I understand the Court to be saying here--again, not dealing with a contractual exclusion of consequential loss--is essentially to reflect what English Authorities have done, which is to note that the question or the analysis of where on the continuum of losses a particular category of loss or type of loss falls may depend on the specific circumstances in the case.¹²⁸

214. Referring to English authorities, the Claimant argues that “a line is drawn by the term ‘consequential loss’, which draws a specific line, in addition to the question of intervening events or the type of intervening events, but it draws a line between the two limbs of Hadley v. Baxendale, or, alternatively, the two types of loss recognised in Section 73 of the Contract Act”.¹²⁹
215. With respect to the **Transfield Shipping** case,¹³⁰ the Claimant stressed the four opinions expressed by the Law Lords and described as “the common theme” of all of these opinions “that the commercial circumstances are relevant to the question of whether it can be said the Parties intended that [...] there was an understanding that the Defendant would be liable for the loss claimed by the Claimant”. The Claimant highlighted “the commercial circumstances, including the potential – or the unpredictability and the size of potential damage as relevant factors.”¹³¹

7.3 The Tribunal’s conclusions

216. The principle that the compensation for the injured party should place it as much as possible in the situation in which it would have been but for the breach, which the Respondents describe as *restitutio in integrum*, is

¹²⁸ HT (Day 1), pages 118 – 119, quoting from *Amin Jute Mills*, RLA-452, see also Claimant’s Presentation, 19 November 2020, CH-1, Slide 13.

¹²⁹ HT (Day 1), page 119.

¹³⁰ *Transfield Shipping Inc. v. Mercator Shipping Inc. (The Achilles)*, [2008] 4 All ER 159, RLA-093.

¹³¹ HT (Day 2), pages 390 and 391.

uncontested. The Respondents however also attribute to it a meaning that affects the extent of the loss that must be compensated.

217. The Tribunal does not believe that this is correct: the two concepts are functionally distinct. *Restitutio in integrum* – the Tribunal uses the expression for the sake of brevity although, as the Claimant pointed out,¹³² the term is more often used in a tort context – determines the measure of the compensation; it applies to the loss that is found to be recoverable. This is a question different from that concerning the loss or types of losses that are recoverable.
218. This understanding is apparent from the decision on which the Respondents rely in arguing that “any applicable exclusion under the JVA or the Bangladesh Contract Act must be interpreted so as to favour not depriving the injured Party of receiving full compensation for harm suffered”.¹³³ The court in the *Amin Jute Mills* case considered the issue without reference to an exclusion clause, as the Claimant pointed out.¹³⁴ Nevertheless, and relevant for the question considered here, the court recognised the two functions to which the two principles refer. The passage on which the Respondents rely contains the following passage:

*The governing idea is that the party in breach must equalize the injured party for the loss, and the measure of equalization is to put the injured party in the position had the contract been performed. While compensating the injured party, it should not be remote or indirect, and in all cases the means available for remedying the inconveniences occasioned by the breach must be taken into account.*¹³⁵

219. It is clear from these words of the court that what must be “equalised” is the loss and that, when determining the loss that must be equalised, legal limitations apply. The loss that must be compensated should not be remote or indirect. The Tribunal sees no impact of the *restitutio in integrum* principle on the definition of the recoverable loss. That definition must be

¹³² TH (Day 1), page 122.

¹³³ HT (Day 1), page 15.

¹³⁴ HT (Day 1), page 118.

¹³⁵ *Amin Jute Mills*, RLA-452, paragraph 7, quoted in Claimant’s Presentation, 19 November 2020, CH-1, Slide 5.

determined by reference to Section 73 of the Contract Act and Article 27.2 of the JVA.

220. When examining the claims presented by the Respondents the Tribunal, therefore, must first consider whether one of the two situations (or “limbs”) in Section 73, first paragraph apply. The Tribunal has considered the Respondents’ argument relying on a passage in the *Amin Jute Mills* decision: “neither any particular degree of remoteness, nor any maximum number of events can be established to set a limit in the law of contract”. For the Respondents this must be understood in the sense that some “degree of remoteness” and some “intervening events” are not limiting liability.
221. This interpretation of the court’s decision cannot be correct: the second paragraph of Section 73 excludes “any remote” loss or damage. This does not leave room for liability for some “degree of remoteness”. Similarly, stating that there is no “maximum number [intervening] events” to exclude liability does not seem to correlate to the meaning of “intervening event”, as it is used by the Parties in this arbitration, reflecting a frequently held understanding.
222. The passage on which the Respondents rely must be seen in the context of the entire paragraph and the case in general. The case concerns the sale of 100 bales of gunny salt bags which the seller failed to deliver; the buyer claimed the difference between the contract price and the market price on the due date. The buyer was unable to establish a market price on the due date but only for a later date. On appeal the issues were whether damage could be established simply by comparing contract price and market price and whether the court below was correct in accepting the market price on another date. As the Claimant rightly pointed out, the case did not involve a contractual exclusion clause.
223. In the decision relied upon, the Court quoted Section 73 of the Contract Act and then proceeded with an analysis of that section. It paraphrased the first paragraph of Section 73 and added: “Consequence must be proximate and natural. Natural in this connection means usual”. That is followed by the passage quoted above. The paragraph then ends by the

conclusion: “In other words these factors are governing circumstances but not absolute rulings”.¹³⁶

224. For the Claimant these passages mean that the court noted “that the question or the analysis of where on the continuum of losses a particular category of loss or type of loss falls may depend on the specific circumstances of the case”.¹³⁷ This may well be the meaning that must be given to the relevant passage.
225. In any event, the Tribunal notes that the statements about degrees of remoteness and intervening events on which the Respondents rely are unrelated to the issues decided by the Court and do not form part of the *ratio decidendi*. They do not justify a conclusion about the role that must be given to intervening events when determining whether a claimed loss or damage arose naturally in the usual course of things. In the absence of any other authority supporting the Respondents’ argument about the role of intervening events in the law of Bangladesh, the Tribunal concludes that in the law of Bangladesh intervening events are treated no different from the principles of causation as they are applied in common law jurisdictions in general.
226. The Tribunal, therefore, continues to be faced with the difficulty of having to determine whether the losses claimed by the Respondents “naturally arose in the usual course of things”. It has not received much guidance in this task, except for “the test of likelihood and foreseeability”, as recommended by the Respondents.¹³⁸
227. When determining the usual course of things according to the first paragraph of Section 73 of the Contract Act, the Tribunal must, however, remain mindful of the distinction resulting from the second paragraph which excludes “remote and indirect loss and damage”. As indirect loss and damage is excluded by the second paragraph, natural flow and the usual course of things in the first paragraph must be direct loss and damage. In the opinion of the Tribunal this leaves no room for intervening events.

¹³⁶ *Amin Jute Mills*, RLA-452, paragraph 8.

¹³⁷ HT (Day 1), page 119.

¹³⁸ HT (Day 2), page 342.

228. This conclusion finds support in the English decision in *Saint Line v. Richardson*, a case already discussed in the Decision on Liability¹³⁹ and referred to by the Respondents at the Hearing.¹⁴⁰ In the words of Atkinson J:

*Direct damage is that which flows naturally from the breach without other intervening cause and independently of special circumstances, while indirect damage does not so flow.*¹⁴¹

229. The second type of loss or damage that must be compensated under the first paragraph of Section 73, sometimes referred to a “special”, requires proof of specific contractual understanding of the Parties, as the Tribunal concluded in the Decision on Liability.¹⁴² It is therefore not correct for the Respondents to assert that it is sufficient, for the application of this special loss, that the loss was “reasonably foreseeable at the time of the JVA”.¹⁴³ Such reasonable foreseeability is a relevant criterion when determining the usual course of things; in the context of Section 73, first paragraph, second type of loss, what is required is that the parties “knew when they made the contract” that the claimed loss would likely result from the breach of the contract.

230. In any event, as stated in the Decision on Liability, the second paragraph of Section 73 of the Contract Act applies to both types of losses in the first paragraph. Liability for special loss is excluded if the loss or damage is remote or indirect.¹⁴⁴

231. Concerning the relationship between the exclusion of remote and indirect loss and damage by the second paragraph in Section 73 of the Contract Act and the exclusion of consequential loss and damage by Article 27.2 of the JVA, the Tribunal, as recorded above, had not found a clear distinction between “indirect” and “consequential” and treated the two expressions as synonymous.¹⁴⁵ The Tribunal reserved further argument by the Parties on this question.

¹³⁹ Decision on Liability, paragraphs 1052 – 1055, referring to *Saint Line Ltd v. Richardsons, Westgarth & Co Ltd*, [1940] 2 KB 99, RLA-70.

¹⁴⁰ HT (Day 1), page 111.

¹⁴¹ *Saint Line Ltd v. Richardsons, Westgarth & Co Ltd*, [1940] 2 KB 99, RLA-70, page 103, quoted at HT (Day 1), pages 111, 113, and Claimant’s Presentation, 19 November 2020, Slide 8.

¹⁴² Decision on Liability, paragraph 1016.

¹⁴³ HT (Day 2), page 341.

¹⁴⁴ Decision on Liability, paragraph 1019.

¹⁴⁵ Decision on Liability, paragraphs 1114 and 1118.

232. The Respondents agreed with this conclusion.¹⁴⁶
233. The Claimant sought to defend the difference. Relying mainly on Indian authorities, the Claimant argued that a contractual exclusion of “consequential loss”, as in Article 27.2 of the JVA, “expands or supplements the scope of unrecoverable damages beyond the statutory exclusion of ‘remote’ or ‘indirect’ losses provided for by the second paragraph of Section 73”.¹⁴⁷ It concluded by presenting the position which the Tribunal repeated in the Questions to the Parties, as quoted above.¹⁴⁸
234. At the Hearing, the Claimant’s argument in this respect consisted mainly in defending the relevance of Indian authorities, in particular with respect to the interpretation of the Bangladesh Contract Act. The Tribunal’s previous conclusion, however, was based essentially on an interpretation of Article 27.2 of the JVA. The Tribunal saw no evidence that that article sought to modify the scope of the exclusion in Section 73. In the Tribunal’s understanding the exclusion clause in Article 27.2 was a self-standing provision with no apparent relation to Section 73.
235. In international contract practice and in the understanding of the courts in various jurisdictions there may well be distinctions between the terms “consequential”, “indirect” and “remote”. It is not certain the understanding of these terms is identical in all industries and in all jurisdictions and whether in all contracts the terms have the same meaning. In the present case, however, and in the absence of any persuasive counter argument, the Tribunal continues to see no clear distinction between the terms “remote and indirect” in Section 73 and “consequential” in Article 27.2; it will continue to treat the two expressions as synonymous.
236. Having carefully considered the Parties’ argument and the legal authorities on which they relied, the Tribunal concludes that the question whether the losses claimed by the Respondents in this arbitration are recoverable or excluded by Section 73 of the Contract Act or Article 27.2 of the JVA must be determined specifically for each claim. While some general considerations and guiding principles have emerged and were set out above, there did not appear a readily applicable definition distinguishing

¹⁴⁶ HT (Day 1), page 28, quoted above.

¹⁴⁷ CMD, paragraph 47.

¹⁴⁸ CMD, paragraph 49.

between recoverable and excluded losses. The determination must be made in a case-by-case analysis, in which the Tribunal exercises its judgement.

8. THE FIRST HEAD OF LOSS: ESCAPED GAS DUE TO THE BLOWOUT OF THE CHATTAK 2 WELL (THE “BLOWOUT GAS”)

237. The Tribunal determined in the Decision on Liability that the first blowout that occurred on 7 January 2005 was caused by Niko’s breaches of its obligations as Operator under the JVA. The second blowout at Chattak 2A was not caused by any breach of obligations on the part of Niko. It also determined that the compensation owed by Niko to BAPEX includes the gas that escaped from the Chattak 2 well as part of the first blowout.¹⁴⁹ That specific quantity of gas is occasionally referred to as the “**blowout gas**”,¹⁵⁰ to distinguish it from other losses of gas and the corresponding losses of production. The Respondents’ First Head of Loss concerns the compensation for this loss.
238. Gas escaped from the Chattak 2 well from the time of the first blowout on 7 January 2005 until at least the completion of the second relief well, Chattak 2B, on 9 October 2005 and, according to the Respondents, even thereafter. While there is no dispute between the Parties that the Claimant must compensate the loss for the gas that escaped until the second blowout on 24 June 2005, the Parties differ with respect to the question whether the escape of gas thereafter was caused by the first or the second blowout.
239. **The Respondents** argue that the blowout of the first relief well (Chattak 2A) did not cause a new flow of gas from the Reservoir and that the second relief well (Chattak 2 B) was not successful and did not seal the first blowout well, Chattak 2. As a consequence, so the Respondents, gas continues escaping from the Reservoir. Eventually, the Reservoir will be fully depleted. Therefore, they claim:

*Accordingly, the relevant measure of the quantity of gas that escaped as part of the first blowout and corresponding loss of production is the amount of gas that Sands 1 and 2 contained before the blowout that could be commercially produced.*¹⁵¹

240. **The Claimant** argues that liability for gas lost from the 2A blowout is excluded and that this second blowout caused the flow of gas from the

¹⁴⁹ Decision on Liability, paragraph 1159 (vii).

¹⁵⁰ See e.g. HT (Day 1), page 125.

¹⁵¹ BAPEX’s Amendment to Memorial on Damages, 7 September 2020 (Amendment), paragraph 35.

Reservoir to resume, that previously had been substantially reduced; the gas that escaped from the Reservoir after the second blowout was therefore not caused by the Chattak 2 blowout.¹⁵² The Claimant also argues that the relief well Chattak 2B was successful and that it has no liability for any gas seepages following the completion of that well.¹⁵³

241. In view of the Parties' conflicting positions concerning the assessment of the First Head of Loss, three periods must be distinguished:

- (i) The first period from the first blowout of the Chattak 2 well on 7 January 2005 until the second blowout of the Chattak 2A relief well on 24 June 2005;
- (ii) The second period from the second blowout until the completion of the work on the Chattak 2 B relief well on 9 October 2005; and
- (iii) The third period from the completion of the Chattak 2B relief well until today.

8.1 The first period: from the first blowout of the Chattak 2 Well on 7 January 2005 until the second blowout of the Chattak 2A relief well on 24 June 2005

242. The Parties agree that the gas that escaped during the first period is a loss that Niko must compensate to the extent the loss concerns BAPEX itself. That was confirmed at the Hearing.¹⁵⁴

243. The Parties disagree about the volume of gas that escaped from 7 January 2005 to 24 June 2005; indeed the Claimant reproaches the Respondents for not having identified separately the gas released due to each of the two blowouts.¹⁵⁵ The Parties also differ with respect to the valuation of the gas lost during this period. These are matters for factual and expert evidence that must be addressed in the next phase of the arbitration.

244. The Parties also disagree with respect to the corresponding loss claimed by the Government. BAPEX claims for this loss not only with respect to the

¹⁵² CMD, paragraphs 67 – 70.

¹⁵³ CMD, paragraphs 71 – 73.

¹⁵⁴ For the Claimant at HT (Day 1), page 127; for the Respondents at HT (Day1), page 34.

¹⁵⁵ CMD, paragraph 67.

first period but for all three periods. The Claimant denies the claim for the Government's alleged losses. This difference will be addressed separately below in Section 8.4.

8.2 The second period: from the second blowout on 24 June 2005 until the completion of the Chattak 2B relief well on 9 October 2005

245. **The Claimant** argues that the recoverable loss ends with the second blowout on 24 June 2005 since the Tribunal held the Claimant was not liable for this blowout. The Claimant relies on a passage at paragraph 934 in the Decision on Liability which is quoted by the Claimant as follows: “the Chattak 2A blowout occurred upon the well establishing premature communication with the Chattak 2 well”. The Claimant asserts: “That is a found fact in the Decision on Liability”¹⁵⁶ and “the cause of the Chattak 2A blowout is res judicata”.¹⁵⁷ The Claimant argued that it was not open for BAPEX to present its “theory of causation of the Chattak 2A lost gas [...] in the damages phase”.¹⁵⁸

246. From this explanation about the cause of the Chattak 2A blowout the Claimant concludes that

the Chattak 2 well receiv[ed] the full force and flow from the original Chattak 2 well flowing from Sands 1 and 2 reservoir starting on 24 June 2005. This is clearly gas lost by virtue of the Chattak 2A blowout for which the Tribunals have held that Niko is not liable.

*Niko submits this is also clearly a classical supervening event that causes a loss that, pursuant to either Section 73 or Article 27.2 of the JVA, is not recoverable as direct damages arising from the Chattak 2 blowout.*¹⁵⁹

247. The Claimant also asserts that the Chattak 2 well bridged on 9 January 2005 above the Regional Shale. As a result, the opening through the Regional Shale to the Reservoir was obstructed.¹⁶⁰ The Claimant explained

¹⁵⁶ HT (Day 1), page 134.

¹⁵⁷ HT (Day 1), page 132.

¹⁵⁸ HT (Day 1), page 128.

¹⁵⁹ HT (Day 1), page 134.

¹⁶⁰ HT (Day 2), pages 413 and 414.

... the only material or known opening through the regional seal to allow at least a material volume of gas to be escaping in the quantities that we're talking about here is the original Chattak 2 wellbore.

[...] there is a very high flow of gas through the wellbore. Once the well bridges, the flow of gas out of the reservoir is considerably restricted, but it is not stopped...

[...]

*When the well bridges it considerably slows or reduces the flow.*¹⁶¹

248. The effect of the second blowout in June 2005 was described by the Claimant as follows:

*What happened with Chattak 2 that both Bob Grace and GSM concluded, which the Tribunal acknowledged, which all of the other Experts at the liability phase acknowledged, is that when Chattak 2A established an unexpected premature communication with that wellbore, it effectively reopened the well flow and allowed the massive new escape of gas to occur.*¹⁶²

249. **The Respondents** assert that after the bridging of the Chattak 2 well the gas from that well continued flowing and no distinction had to be made between the period of flow before the Chattak 2A blowout and the period thereafter. In the Amendment, the Respondents wrote:

*... it is essential to recall that, while its violent manifestation at the surface ended when the well bridged over on 9 January 2005, and gas emissions at the surface were observed to diminish after the completion of the Chattak 2B relief well, compelling evidence indicates that the Chattak 2 well blowout (the uncontrolled release of gas from well) continues today.*¹⁶³

and

¹⁶¹ HT (Day 1), pages 143 and 144.

¹⁶² HT (Day 1), page 144, similarly at page 141.

¹⁶³ Amendment, paragraph 30.

*There is no need for a separate analysis of the amount of gas released to the surface through the second blowout. Only the first blowout caused escape of gas from the reservoir.*¹⁶⁴

250. For the Respondents “the lack of success of the relief operation was not in any event an intervening event”; they confirm, however that in their view “the mere existence of an intervening event does not exempt the breaching party from liability”.¹⁶⁵
251. The Respondents deny that paragraph 934 of the Decision on Liability has *res judicata* effect and that their present position may be described as a “new theory”. In any event they see no inconsistency between the Tribunal’s finding at that paragraph: the Tribunal paraphrased the GSM Report about the communication of the relief well with the blowout well. Following this general statement, “BAPEX now endeavors to get to the specific details of how the events unfolded”.¹⁶⁶
252. The relevant details, according to the Respondents, are determined by the bridging of the well and its effects. In their view, the Chattak 2 well bridged at 466m and filled the wellbore with sand and debris. Then “the flow of gas stops going up the wellbore because that sand and debris fills the wellbore”. Since the bridging took place at the level of 466m, above the opening in the Regional Shelf created by the Chattak 2 well at 482m, the bridging did not stop the flow of the gas from the Reservoir.¹⁶⁷ The continuing flow of gas had the following effect which the Respondents described by reference to a drawing from the Hughes Supplemental Report:¹⁶⁸

The flow continued, but when it reaches where the well bridged off, it then moves laterally into the sand and continues to move laterally and up through the sand, as is shown on this schematic, and the schematic shows possible shale layers that would trap the gas and create drilling hazards.

But the gas did not stop or slow down when Chattak 2 bridged off. It continued to flow underground, and when the Chattak 2A well was

¹⁶⁴ HT (Day 1), page 36.

¹⁶⁵ HT (Day 1), page 37.

¹⁶⁶ HT (Day 2), pages 344 and 345.

¹⁶⁷ HT (Day 2), pages 346 – 351.

¹⁶⁸ Hughes II, Figure 1 at page 10; the graph is reproduced below at Section 9.1.1.

*drilled, it hit some of that gas that was continuing to flow underground that was under high pressure, and there was a significant volume of it, and the Chattak 2A well took that gas to the surface.*¹⁶⁹

253. According to the Respondents, the bridging of the Chattak 2 well did not stop the flow of the gas and the Chattak 2A blowout “did not create any new escape of gas”¹⁷⁰ and not “a new channel from the Sands 1 and 2”; “the only thing that Chattak 2A did was give it a channel to the surface”.¹⁷¹
254. **The Tribunal** has first considered the Claimant’s **res judicata** argument. Paragraph 934 of the Decision on Liability, from which the Claimant quoted, reads as follows:

*The blowout at the Chattak 2A Well occurred on 24 June 2005 at 3 am at 422.5m depth. **The blowout is attributed to a premature and inadvertent communication of the relief well with the blowout well.** The GSM report provides a detailed account of the events on 23 and 24 June 2005.*

255. In this quotation the relevant passage is highlighted. The paragraph concludes by quotations from the GSM Report.
256. The passage on which the Claimant relies is not in the operative part of the decision. In the Tribunal’s reasoning it is not decisive; the Tribunal held that “the second blowout at Chattak 2A was not caused by any breach of obligation on the part of Niko”. It reached this conclusion by considering Niko’s obligation concerning the selection of the relief operator; the causes of the blowout were not determinative for the decision. In any event, the Tribunal did not make a finding about these causes and did not endorse the explanations in the GSM Report; it only noted that these causes were “attributed” to events described in the GSM Report from which it quoted in support of its observation. There can be no question of a binding effect of this passage.
257. Moreover, the Respondents are correct in stating that, even if the quoted passage had been a binding decision by the Tribunal, it would not be in contradiction with their position concerning the issue to be decided now:

¹⁶⁹ HT (Day 2), page 349.

¹⁷⁰ HT (Day 1), page 344.

¹⁷¹ HT (Day 2), pages 350 and 351.

*We are no longer debating why the Chattak 2A well blew out. That is what the Tribunal covered in the Decision on Liability. What is relevant for the Damages phase is to discern precisely how the gas was released to the surface by the 2A blowout and where it came from.*¹⁷²

258. The Tribunal agrees. The Respondents had claimed that all gas lost from the Reservoir was attributable to the two blowouts for which they held Niko responsible. Once the Tribunal had decided that Niko was liable only for the first blowout, a distinction between the effect of the two blowouts had to be made. Mr Hughes explained that the Supplemental Report which the Respondents then commissioned assessed “the extent to which the loss of gas and damage to the productivity of the Chattak West Gas Field is attributable to the blowout of the Chattak No 2 well or the Chattak No 2A well”.¹⁷³ This is what the Respondents were doing in the Amendment and at the Hearing.
259. Without expressing any view on the substance of the case presented, the Tribunal sees no reason for deciding that the Respondents’ explanations about the causation of the gas losses attributable to the Chattak 2A blowout are inadmissible.
260. Considering the **substance of the Parties’ positions**, the Tribunal sees the difference as follows: both Parties accept that the gas from the Reservoir escaped through the opening of the Marine Shale drilled by the Chattak 2 well.
- The Respondents state: the “gas that flowed through to 2A came from [the Reservoir] but it escaped [the Reservoir] because of the hole punctured by Chattak 2”.¹⁷⁴
 - The Claimant states that as a result of the Chattak 2A blowout “the gas renewed flowing from the Chattak 2 wellbore into [the Reservoir]”.¹⁷⁵
261. The difference between the two positions consists in the assumption of what happened in the Chattak 2 wellbore after the first blowout. Both Parties concluded from the contemporaneous reports that on 9 January

¹⁷² HT (Day 2), page 344.

¹⁷³ Hughes II, paragraph 9.

¹⁷⁴ HT (Day 2), page 351.

¹⁷⁵ HT (Day 2), page 417.

2005 the Chattak 2 wellbore bridged over and was filled with sand and debris so that the flow of gas through the wellbore was obstructed and substantially reduced. They differ, however, as to the location where the bridging occurred:

- For the Claimant the wellbore bridged at the Regional Shale, obstructing the wellbore and substantially reducing the flow from the Reservoir. The Chattak 2A blowout reopened the obstructed access to the Reservoir and caused the gas from the Reservoir to flow again.
- For the Respondents the bridging occurred higher up in the wellbore at 466m and did not obstruct the flow of gas from the Reservoir. The Chattak 2A blowout did not affect the flow out of the opening in the Regional Shale – before and after that blowout the gas flowed. The only change by the Chattak 2A blowout was that the gas “coming out anyway” had a “new channel”.¹⁷⁶

262. In the Tribunal’s view the scenario described by the Respondents might be characterised as an “intervening event”. The circumstances in that scenario do, however, not modify in any substantial manner the course of the events. The gas released by the first blowout continues to flow, merely changing the channel through which it flows.

263. By contrast, the circumstances in the scenario described by the Claimant are not just an intervening event; they are a new cause for the flow of gas from the Reservoir. The bridging of the wellbore, in the Claimant’s version, obstructed the opening in the Regional Shale and thereby substantially reduced the flow from the Reservoir. If the Chattak 2A blowout removed the obstruction and reopened the flow from the Reservoir, a new cause was created for the escaping gas. The increase in the flow of gas that followed can no longer be seen as a damage that “naturally arose in the usual course of things from the breach”. It is “remote and indirect” or “consequential”.

264. The decision about the question whether the gas that escaped from the Reservoir during the second period, between 24 June 2005 and 9 October 2005, is recoverable loss, depends on a decision about the correct scenario. Such a decision requires that any relevant evidence and the experts of the Parties be heard in the next phase of the arbitration.

¹⁷⁶ HT (Day 2), pages 351 and 350.

8.3 Third period from the completion of the Chattak 2B relief well on 9 October 2005 until today

265. The question whether the loss resulting from gas that escaped during the third period is recoverable arises only if the Respondents' account of the Chattak 2A blowout is accepted, leading to the conclusion that the blowout did not constitute a new cause of the flow of gas from the Reservoir. If so, the question arises whether Niko is liable for any gas that continued to escape from the Reservoir after the completion of the Chattak 2B relief operation.
266. The Chattak 2B relief operation was completed on 9 October 2005 and Niko informed BAPEX of the successful completion at a meeting on 16 October 2005. BAPEX doubted and then denied that the Chattak 2 wellbore was properly sealed. The Respondents assert that gas continues to escape from the Reservoir to date.
267. As seen above, Niko had, since May 2005, proposed to drill the Chattak 3 Well and had submitted various drilling plans. Niko asserted that, if the Chattak 2 wellbore had not been properly sealed, drilling a new well into the Reservoir would reduce the pressure and gas would cease to escape through the Chattak 2 wellbore. The Respondents state that BAPEX approved the development of the Chattak field only subject to reasonable conditions. The Claimant denies that the conditions were reasonable and argues that, by refusing to approve production from the Reservoir, BAPEX is responsible for any gas losses that may have occurred after the completion of the Chattak 2B relief well.
268. The Tribunal concludes that two distinct issues must be considered with respect to this third period: (i) the successful completion of the Chattak 2B relief operation, sealing the Chattak 2 wellbore and (ii) the responsibility for any gas seepages from the Reservoir that may have continued after the completion of this relief operation. The Tribunal will consider these two issues separately.

8.3.1 The dispute about the successful completion of the Chattak 2B relief operation

269. **The Claimant** asserts that on 9 October 2005 the relief operation by the relief well Chattak 2B were successfully completed. It relies on the End of

Well Report by Robert Grace of GSM, dated 29 November 2005.¹⁷⁷ According to Mr Adolf, BAPEX was informed of the completion of the operation at a meeting of 16 October 2005.¹⁷⁸ The Claimant asserts the relief operation sealed the well and stopped the flow of gas from the Reservoir. It accepts, however, that there were still gas seepages at the surface; but it explains that these seepages were due to gas that had escaped from the Reservoir into the overburden before the sealing of the blowout well and was migrating to the surface. These “seepages would continue but would progressively abate as the charged overburden slowly seeped to surface”.¹⁷⁹

270. The Claimant describes in further detail the reasons for its conclusion and presents evidence in support of the allegation that the relief operation was successful.¹⁸⁰

271. **The Respondents** contest that the relief operation succeeded in sealing the Chattak 2 wellbore. They assert that gas seepages from the Reservoir continue until today.

272. BAPEX expressed doubts in the success of the relief operation soon after the successful completion had been announced to it:

*Our officers on observation of relief well are reporting the presence of many alive gas burning in around the relief well(s). Reports as on today, there is no room to consider these as latent gas seepage. but coming from the formation. BAPEX is not fully convinced that the relief operation of the ill fated Chattak # 2 development well by Chattak # 2B Relief well is a success.*¹⁸¹

273. In the BMD the Respondents develop their position according to which the “Chattak 2 well was not completely sealed after the blowout”.¹⁸² In the Amendment, the Respondents assert:

... while [...] gas emissions at the surface were observed to diminish after the completion of the Chattak 2B relief well, compelling evidence

¹⁷⁷ Chattak 2B Relief Well - End of Well Report prepared by Robert Grace of GSM, 29 November 2005, Exhibit C-266, referred to at CMD paragraph 332.

¹⁷⁸ WS Adolph, paragraphs 108 and 109.

¹⁷⁹ CMD, paragraph 342.

¹⁸⁰ CMD, paragraphs 229 – 241.

¹⁸¹ Letter from BAPEX to Niko, 22 November 2005, Exhibit C-4, page 4.

¹⁸² BMD, section IV (C).

*indicates that the Chattak 2 well blowout (the uncontrolled release of gas from well) continues today.*¹⁸³

274. The Respondents discuss the evidence they presented in support of this assertion and conclude from this evidence:

*... the expert evidence and observations demonstrate that it is highly likely that the gas being emitted in the area immediately around the Chattak 2 wellhead and in the area 500 meters around the well is gas that continues to flow from the incompletely sealed Chattak 2 well.*¹⁸⁴

275. For the purposes of this decision, **the Tribunal** assumes that the Respondents' allegations are correct: the Chattak 2B relief operation did not succeed in sealing the Chattak 2 wellbore completely and gas continues to escape from the Reservoir. To the extent to which the loss of gas escaping from the Reservoir after the Chattak 2A blowout is found recoverable, **the Tribunal concludes** that the loss caused by gas continuing to escape from the Reservoir is recoverable.

8.3.2 Responsibility for any continuing seepages following the completion of the Chattak 2B relief operation

276. **The Claimant** argues that any "seepages from Sands 1 and 2 [...] would substantially cease upon the drilling of a new production well, which Niko was ready, willing and able to undertake in 2005. As such, any alleged loss of gas through ongoing seepages (which is unproven as a matter of fact) is the consequence of BAPEX's refusal to allow any drilling to take place during the fifteen years that has elapsed since the blowouts".¹⁸⁵

277. The Claimant states that a production well would "create a preferential pathway for any gas to flow and ultimately to deplete or exhaust any gas in Sands 1 and 2 entirely".¹⁸⁶ Any resulting losses must be categorised as "consequential", "indirect" or "remote";¹⁸⁷ and "BAPEX is barred from recovering those losses, having failed to mitigate its losses".¹⁸⁸

¹⁸³ Amendment, paragraph 30.

¹⁸⁴ BMD, paragraph 157.

¹⁸⁵ CMD, paragraph 72.

¹⁸⁶ CMD, paragraph 88.

¹⁸⁷ CMD, paragraph 72, similarly at paragraph 88.

¹⁸⁸ CMD, paragraph 160.

278. In the CMD, the Claimant describes in some detail the events since May 2005 when Niko first submitted to BAPEX a drilling and evaluation programme for a new well, Chattak 3.¹⁸⁹ It relies in particular on (i) the revised drilling programme that Niko had submitted on 19 June 2005 and which BAPEX approved conditionally on 2 August 2005;¹⁹⁰ (ii) the availability of a drilling rig ready to start work and Niko’s announcement that production from the new well could start by the end of 2005;¹⁹¹ (iii) the exchange of correspondence with BAPEX of 13 and 22 November 2005;¹⁹² and (iv) the 6th JMC of 7 March 2006 recording approval by the Government and BAPEX of the work programme subject to conditions which Niko did not accept.¹⁹³ The Claimant also describes (v) Niko’s subsequent unsuccessful requests that a JMC meeting be held and quotes from BAPEX’s letter 24 May 2012, which referred to the arbitration proceedings which Niko had initiated and concluded that “we think it is better to wait for until the Award is received from [...] ICSID”.¹⁹⁴
279. The Claimant concludes: “Although BAPEX repeatedly agreed that Chattak West could and should be developed and produced, at no point did it provide the approval required for Niko to continue with the development of the field”.¹⁹⁵
280. **The Respondents** argue that “Niko is responsible for the lack of development of the Chattak field in the aftermath of the blowouts”.¹⁹⁶ They accept that both BAPEX and the Government did approve Niko’s proposed work programme for drilling but Niko refused to accept the “more than reasonable” conditions for the approval.¹⁹⁷
281. The Respondents moreover provide a detailed review of the events and generally rely on the same evidence as the Claimant. They refer to (i) Niko’s

¹⁸⁹ See Letter from Niko to BAPEX, 3 May 2005, Exhibit C-36.

¹⁹⁰ CMD, paragraphs 330 and 332, relying on Letter from BAPEX to Niko, 22 November 2005, Exhibit C-4.

¹⁹¹ CMD, paragraph 338, relying on Letter from Niko to BAPEX, 22 October 2005, Exhibit C-276.

¹⁹² CMD, paragraphs 343 – 345.

¹⁹³ CMD, paragraphs 352 – 356, relying in particular on Minutes of JMC Meeting Minutes No. 6, 7 March 2006, Exhibit C-66.

¹⁹⁴ CMD, paragraph 389, quoting from Letter from BAPEX to Niko, 24 May 2021, Exhibit R-246.

¹⁹⁵ CMD, paragraph 392.

¹⁹⁶ BMD, section IV(B).

¹⁹⁷ BMD, paragraphs 133 and 134.

drilling and evaluation programme for Chattak 3, dated May 2005;¹⁹⁸ (ii) Niko's updated drilling and evaluation programme for Chattak 3 of 16 October 2005;¹⁹⁹ (iii) Niko's announcement that the drilling rig was in place to drill Chattak 3; (iv) Niko's request that BAPEX let it begin drilling to which "BAPEX did not give in";²⁰⁰ (v) Niko's letters of 13 November 2005 and BAPEX's reply of 22 November 2005;²⁰¹ and (vi) the JMC on 7 March 2006 at which "BAPEX informed Niko that the government of Bangladesh had approved its work programme for Chattak West subject to the fulfilment of six conditions" which the Respondents consider "more than reasonable" but which "Niko flatly rejected".²⁰²

282. The Respondents also refer to the new Evaluation of Commerciality of the Chattak West Field, dated August 2007, which provided for two development wells (Chattak 3 and the recompletion of Chattak 2C) and for Chattak 4 which would be drilled should the recompletion attempt on Chattak 2C prove unsuccessful.²⁰³ The Respondents state that this proposal was never brought before a JMC and confirm BAPEX's letter of 24 May 2012, quoted above, in which "BAPEX determined it was appropriate for the arbitration to reach its conclusion before the Parties resumed efforts to develop the Chattak Field".²⁰⁴

283. The Respondents conclude their submissions on this issue by stating that

*BAPEX has not 'deprived Niko of the opportunity to develop the Chattak field'. Rather, BAPEX was faced with a JV partner and operator which had demonstrated its lack of technical ability and its incapacity to effectively and safely conduct operations. [...] BAPEX has not prevented the further development of the Chattak Field. It has simply acted as any prudent JV partner would to protect its interests and the interests of its owners, not to mention the safety of personnel working on the site and the people of Tengratila.*²⁰⁵

¹⁹⁸ West Chattak Field, Marginal Gas Field Development Plan, May 2005, Exhibit R-248 and letter of transmittal from Niko to BAPEX, 3 May 2005, Exhibit C-36; Referred to at BMD, paragraph 109.

¹⁹⁹ Drilling & Evaluation Program, Chattak 3 Updated, 16 October 2005, Exhibit R-35, referred to at BMD, paragraph 116.

²⁰⁰ BMD, paragraph 117.

²⁰¹ BMD, paragraphs 121 – 132.

²⁰² BMD, paragraphs 133 – 135.

²⁰³ BMD, paragraphs 138 - 140.

²⁰⁴ BMD, paragraph 141, paraphrasing Letter from BAPEX to Niko, 24 May 2021, Exhibit R-246.

²⁰⁵ BMD, paragraph 142.

284. As part of the Questions for the November 2020 Hearing, **the Tribunal** addressed to the Respondents the following question:

Would the recoverability of the loss from the third period be affected by the allegedly wrongful refusal by BAPEX of Niko’s proposed work plans and budgets?

285. At the Hearing **the Respondents** addressed the question by stating the following:

BAPEX stresses that, one, it does not concede that the gas flow ceased upon drilling of Chattak 2B, it does not concede that BAPEX’s refusal of Niko’s proposal was wrongful, and it does not concede that, had Niko been allowed to resume drilling, the operations would have been successful at producing gas in commercially viable quantities.²⁰⁶

286. The Tribunal has examined the Parties’ arguments and evidence and determined on that basis that the issues to be considered here do not concern the success of Chattak 2B (which has been discussed above and must be addressed separately) nor the question whether Niko, if it had been allowed to resume drilling, would have produced gas in commercially viable quantities (an issue that may be relevant for the set-off claim to be considered below).

287. In light of the case as presented by the Parties, the Tribunal notes that in 2005 and 2006 neither BAPEX nor the Government had taken the position that drilling a production well had become impossible or too hazardous. Indeed, as the Respondents have pointed out, at the JMC of 7 March 2006 “BAPEX informed Niko that the government of Bangladesh had approved the work program for Chattak West subject to the fulfilment of six conditions”.²⁰⁷ The Tribunal, therefore, identified the decisive issues as follows:

- (i) would drilling one or several production wells, as proposed by Niko since May 2005, have caused the rate of any seepages after the completion of the Chattak 2B relief operation to diminish and eventually cease? If so, by what time would the effect on such production wells have occurred, considering *inter alia* Niko’s statement in November 2005 that production could start by the end

²⁰⁶ HT (Day 1), page 39.

²⁰⁷ BMD, paragraph 133.

of 2005? What is the timeframe during which the reduction and eventual of the seepages have occurred?

- (ii) was the failure of BAPEX and the Government to approve Niko's proposals of production wells or the conditions for such approval justified if such wells would have been capable of reducing and stopping any continuing seepages? As pointed out by the Claimant, the question must be considered by reference to the circumstances and explanations actually given at the time in response to the drilling proposals presented by Niko and not by reference to circumstances that the Respondents' experts may have observed over ten years after the proposals were made. The question here is to be considered specifically from the perspective of mitigation of damage and causation; the question whether such failure constituted a breach of BAPEX's obligations under the JVA is a separate issue that may have to be considered in the context of Niko's set-off claim.

288. Argument and evidence on these issues is reserved for the proceedings on quantification following this Decision on Recoverable Loss.

8.4 The loss of the Government due to the Blowout Gas

289. BAPEX seeks compensation for the Government's gas losses. The Claimant denies that it has any liability for such losses. The difference between the Parties in this respect concerns first the legal basis for this claim and second whether the loss claimed is recoverable. Before addressing these two issues, the Tribunal will summarise briefly the context in which the Government's claim arises in this arbitration.

8.4.1 The context of the Government's claim in this arbitration

290. In the Money Suit, the Government and Petrobangla sought damages for "Gas burnt at Chattak field", "Sub-surface loss at Chattak field" and "Additional Sub-surface loss at Chattak field".²⁰⁸ They invoked "tortious liability and not breach of contract and therefore, the arbitration clause inserted in the JVA has no manner of application in this case".²⁰⁹

²⁰⁸ Money Suit Complaint, Exhibit C-6, schedules A-C, pages 76 and 77.

²⁰⁹ Money Suit Complaint, Exhibit C-6, paragraph 69.

291. In response, the Claimant initiated the present arbitration with respect to the Compensation Declaration, relating to the liability for the two blowouts and the claims in the Money Suit.²¹⁰ The relief it sought in the arbitration, in its version of 22 January 2016, contained the following request:

*Declaring that the Tribunals' determination of Niko's liability concerning the blowouts and any damages resulting therefrom is final and binding upon BAPEX and all of its predecessors, assignors, successors and assigns.*²¹¹

292. As part of its Decision on Liability, the Tribunal held:

*The Tribunal's decision on Niko's liability for the two 2005 blowouts in the Chattak field is binding on the Government and Petrobangla as the assignors to BAPEX.*²¹²

293. The Tribunal explained that, as a consequence of the assignment, “BAPEX as the assignee assumed [the] role and exercises [the] rights [of the Government and Petrobangla]”.²¹³ It specifically addressed the Respondents’ assertion that “the Government’s and Petrobangla’s rights to seek compensation for torts against them committed by Niko” were excluded from the assignment.²¹⁴ The Tribunal disagreed and, in the decision quoted above, held that its decision on Niko’s liability was also binding on the Government and Petrobangla. It explained:

*The Tribunal concludes that, insofar as the Government and Petrobangla are concerned, claims for loss and damage arising from the blowouts in the Chattak field must be dealt with within the framework of the JVA. Separate claims for such loss and damage by the Government and Petrobangla expressed in tort would be in conflict with the assignment and the terms agreed and approved by the Government and Petrobangla for the development of the Chattak field.*²¹⁵

²¹⁰ Notice to Arbitrate of 8 January 2010 and Request for Arbitration, dated 1 April 2010 (RfA I).

²¹¹ Niko’s Post-Hearing Brief on Liability, 22 January 2016, paragraph 431(c); for a full record of the Claimant’s requests for relief concerning liability see the Decision on Liability, paragraphs 172 – 178.

²¹² Decision on Liability, paragraph 1159(ii).

²¹³ Decision on Liability, paragraph 255.

²¹⁴ See Decision on Liability, paragraph 268, with references.

²¹⁵ Decision on Liability, paragraph 289.

8.4.2 The legal basis for BAPEX’s claim concerning the Government’s losses

294. In the BMD, prior to the Decision on Liability, **the Respondents** maintained “that the courts of Bangladesh are the proper fora for adjudicating the Government’s losses”. “[D]ue to the breadth of Claimant’s requested relief for a declaration [...]”, the Respondents included, nevertheless, as an alternative, a valuation of the Government’s losses.²¹⁶ The relief requested in this respect was expressed as follows:

*Should the Tribunal make a determination of the Government’s losses, order the Claimant to pay damages of \$896 million for the Government’s gas losses ...*²¹⁷

295. Following the Decision on Liability, the Respondents updated the request and the valuation. In the Amendment it requested that the Tribunal:

*Order the Claimant to pay damages of \$857 million for the Government’s loss of gas production ...*²¹⁸

296. The Respondents explain the basis for claiming this loss by stating:

*Niko’s breach of the JVA caused Bangladesh to lose production of a relatively inexpensive fuel source to power its gas plants during a period when the country’s fast-growing energy needs exceeded the available domestic supply. The value of that injury is the cost of replacing that lost production with alternative fuel. In accordance with the Decision on Liability, Niko must compensate BAPEX, as the Government’s assignee, for this loss.*²¹⁹

297. BAPEX’s Memorial on Damages had described the legal basis for the claim concerning the Government’s losses as follows: “Because the Government was not a party to the JVA, the Government’s losses arise in tort, not contract. Naturally, the limitation of liability in Article 27.2, second sentence, of the JVA [...] would not apply to the Government’s claim in tort”.²²⁰

²¹⁶ BMD, paragraph 226 and section VI(F).

²¹⁷ BMD, paragraph 400(h).

²¹⁸ Amendment, paragraph 99(c).

²¹⁹ Amendment, paragraph 78.

²²⁰ BMD, paragraph 175.

298. At the Hearing the Respondents adjusted their approach. Relying on the Decision on Liability, they explained the basis of the claim for the Government's losses as follows:

BAPEX affirms that the Government has claim to damages in contract under the JVA based on the Tribunal's finding that it is a party for purposes of Article 27.2 and, therefore, must have the rights of a party under the Contract generally. And the Government also has a claim in tort resulting from Niko's duty of care to the Government in developing resources that are the property of the Government and in the development of which the Government has a direct financial and sovereign interest.

and

So, BAPEX's Claim is not based on the specific assignment of a specific tort claim but on the general assignment of all rights related to the production and development of the Chattak Field found to exist by the Tribunals.²²¹

299. Concerning the claim on the basis of tort, the Respondents argue that the four elements identified by the Claimant as the required justification of such a claim have been met.²²²

300. **The Claimant** continued to approach the claim from the perspective of a tort claim. It argued that Niko did not owe to the Government a duty of care.²²³ In its understanding

... the Government's claim is specifically based on the contractual duty "to conduct drilling operations in a safe and prudent manner", which is a duty explicitly established under the JVA, to which only BAPEX is a party. It is inconsistent with the express assignment [...] to now assert [...] a parallel and free-standing duty to take care in constructing drilling operations at Chattak was owed by Niko directly to the Government [...]

[...]

²²¹ HT (Day 1), pages 60 and 61.

²²² HT (Day 1), pages 62 – 67.

²²³ CMD, Section III(A).

*... such a duty arising in tort [...] would be wholly inconsistent with the contractual structure and apportionment of rights and liabilities under the JVA ...*²²⁴

301. Considering the claim from the perspective of tort, the Claimant also argues that the losses claimed by the Government were pure economic losses, irrecoverable under a tort claim.²²⁵
302. The Claimant further points out that Article 27.2, first sentence, of the JVA required Niko to indemnify BAPEX and the Government against claims by third parties for damages resulting from any wrongful or negligent acts or omissions committed by Niko. The distinction drawn by that clause between third parties on the one hand and BAPEX and the Government on the other, made it “wholly inconsistent” in the context to treat the Government as a third party.²²⁶
303. When considering the claim from the perspective of breach of contract, the Claimant argues that the JVA was not a contract for the sale of gas:

... while the JVA specifically contemplated selling some or all produced gas to Petrobangla (or its designate), it did not oblige Petrobangla or the Government to buy the gas [...] Thus, sales to Petrobangla (or another designated Government entity) were contingent on the agreement of a Gas Purchase and Sales Agreement [...]

*The Government’s claim for cost of replacement gas is in effect a claim for breach of a purported obligation to supply and deliver gas.*²²⁷

304. **The Tribunal** made it clear in the Decision on Liability that it saw the issue of the Government’s claims not as a question of an assignment of claims, in tort or in contract. The issue it considered concerned the assignment of rights to develop and produce gas from the Chattak field.²²⁸ The Tribunal concluded that as assignee of the Government and Petrobangla, BAPEX

²²⁴ CMD, paragraphs 101 and 106.

²²⁵ CMD, Section III(B).

²²⁶ CMD, paragraph 103.

²²⁷ CMD, paragraphs 104 and 105.

²²⁸ Decision on Liability, paragraph 286.

regulated the development and production of Petroleum from the Chattak field.²²⁹ It held that:

... insofar as the Government and Petrobangla are concerned, claims for loss and damage arising from the blowouts in the Chattak field must be dealt with within the framework of the JVA. Separate claims for such loss and damage by the government and Petrobangla expressed in tort would be in conflict with the assignment and terms agreed and approved by the Government and Petrobangla for the development of the Chattak field.

305. The Respondents specifically refer to Article 24.3 of the JVA, mentioning the requirement to sell the gas to Petrobangla, providing “a market outlet”.²³⁰ Article 24 of the JVA is entitled “Petroleum Sales and Transmission”. Petroleum is defined as “any naturally occurring hydrocarbon, whether in gaseous, liquid or solid state”.²³¹ Article 24.3 reads as follows:

Operator and BAPEX (hereinafter referred to as Seller) agree to sell the produced Petroleum to the Bangladesh domestic market under the JVA. Buyer of JV gas shall be Petrobangla or a designee of Petrobangla (hereinafter referred to as Buyer). Buyer & Seller shall enter into a Gas Purchase and Sales Agreement (GPSA) under which the Buyer shall agree to purchase the Petroleum to which the Seller is entitled to under the JVA, subject to deliverability and testing and proof of such Petroleum. Operator shall be free to find a market outlet within the Country if a market outlet is not given by Petrobangla within six months after a request is made.²³²

306. This provision shows that the sale of the gas produced from the Chattak field is an integral part of the regulation in the JVA, agreed by BAPEX as an assignee of the Government. An essential element of the regulation concerning the sale of the gas was that it had to be made available to the “domestic market”. The buyer could be Petrobangla; even if it was not Petrobangla, Niko as the Operator could find a market outlet, but this had to be “within the Country”. This alternative solution, permitting Niko to find a market outlet specifying that it must be “within the Country” is taken

²²⁹ Decision on Liability, paragraph 289.

²³⁰ Amendment, paragraph 77.

²³¹ JVA, Article 1.46 (1), Exhibit C-1.

²³² JVA, Article 24.3, Exhibit C-1.

almost literally from the Procedure for Development of Marginal/Abandoned Gas Fields which the Government had promulgated while the JVA was negotiated.²³³ The Procedure is attached as Annex C to the JVA and is expressly referred to in the JVA. It starts by declaring: “Development of oil and gas sector is vital for the national economy”.²³⁴

307. The Tribunal concludes that the development of the Chattak field and the supply of gas from it to the domestic market are an important policy objective of the Government, promoted and protected by the JVA obligation to sell the gas to the domestic market.
308. As a direct consequence of the Chattak 2 blowout, gas escaped from the Reservoir: the “blowout gas”. Some of this gas burned, some of escaped into the air and some of it may still be lingering in the overburden above the Regional Shale. None of it is now available; it is lost. The loss affects BAPEX, because it cannot be sold by the JV and produce revenue in which BAPEX would have had a share. The loss also affects the Government, because the gas is no longer available for sale to the domestic market.
309. The Tribunal concludes that the loss of the blowout gas is a loss not only for BAPEX but also for the Government, even though the two are affected differently. This loss was caused by Niko’s breach of its obligations as Operator that produced the Chattak 2 blowout.
310. At the Hearing, this aspect was expressly pointed out to the Parties; the Tribunal addressed it specifically to the Claimant:

... whether you approach this through tort or through contract, the objective for the Government by mandating BAPEX to exploit these two fields was to make this gas available to Bangladesh. And if this gas is no longer available, the loss to BAPEX is only part of the loss.

Isn’t that a way of looking at it?

MR COLE: [...] the signs and the indications from the express terms, the context, is consistent only with the loss to BAPEX for lost production, not the back end of it, [...] the JVA was not a contract [...]

²³³ JVA, Annex C, Exhibit C-1; see also Decision on the Corruption Claim, paragraphs 456 *et seq.*

²³⁴ JVA, Annex C, Exhibit C-1.

*for the supply of gas. It was not a gas purchase and sale agreement
...²³⁵*

311. The Claimant is correct in stating that the JVA was not a contract for the supply of gas. Such a contract had not been concluded for the Chattak gas and could not thereafter be concluded for the supply of the blowout gas. This observation does, however, not change the conclusion that the Government's objective of the JVA was to make the gas available to the domestic market and that the escape of the blowout gas is a loss also to the Government.
312. It follows that **BAPEX's claim for the Government's losses is a claim under the JVA**. It is not a claim for indemnification of a third party under Article 27.2, first sentence. As the Respondents declared at the Hearing it is a "claim to damages in contract under the JVA".²³⁶ Nor is the claim an assigned freestanding claim in tort. In view of this conclusion, it is not necessary examine whether the claim also meets the requirement of a separate tort claim.

8.4.3 Is the Government's loss recoverable?

313. Having concluded that the lost blowout gas is a prejudice to the Government that must be considered in the context of the JVA, the Tribunal now examines whether this loss, as it is claimed by BAPEX for the Government, is recoverable in view of the requirements of Section 73 of the Contract Act and Article 27 of the JVA. The quantities of gas to be considered are those for which Niko is liable, as discussed in the previous sections of this Decision. The question to be considered here concerns the criteria applied for the valuation of this loss.
314. In the Money Suit the **Government and Petrobangla** claimed for the lost gas in three categories, relying on estimates of the lost volumes of gas lost, valued at USD 1.75, the price that had been agreed in the GPSA between Petrobangla and Niko for the gas from the Feni field:
- (i) Gas burnt: 3 Bcf at a total of USD 5'250'040;
 - (ii) Subsurface loss: 5.89 Bcf at a total of USD 10'307'500;

²³⁵ HT (Day 1), pages 178 and 179.

²³⁶ HT (Day 1), page 60.

(iii) Additional subsurface loss: 45 Bcf at a total of USD 78'750'000.²³⁷

315. In the arbitration **the Respondents** adopted a different approach for defining the Government's loss and calculating its amount. They stated:

*The Government's losses reflect the additional costs government entities have incurred by having to purchase higher cost fuels in place of using natural gas from Chattak for electricity generation.*²³⁸

316. In a footnote to this statement the Respondents explain:

*A number of governmental entities play a role in Bangladesh's energy sector. The Bangladesh Power Development Board (BPDB) generates electricity from power plants it owns and acts as the single buyer of electricity from public and private generation companies.*²³⁹

317. The Respondents' expert quantified the loss by comparing the costs of producing electricity from Chattak gas to producing electricity from alternative fuels. The Respondents refer to their detailed explanation in BAPEX's Memorial on Damages²⁴⁰ and summarise the expert's quantification as follows:

*Brattle has quantified the Government's loss as the difference between the costs of the more expensive fuels and the price Petrobangla would have paid for the equivalent amount of gas extracted from the Chattak field. Brattle conducts its assessment by calculating: (i) the quantity of electricity that would have been generated from Chattak gas, (ii) the cost of electricity generation using the imported liquid fuels (iii) the total cost of generating the net electricity lost using imported liquid fuels instead of Chattak gas, and (iv) the present value of the lost net benefits to Bangladesh. The resulting calculation is the present value of the net fuel cost increase due to purchasing additional quantities of more expensive fuels.*²⁴¹

318. The Respondents explain that the Joint Venture had to sell the Chattak gas to Petrobangla and that "Petrobangla would have undoubtedly

²³⁷ See Money Suit Complaint, Exhibit C-6, page 56. The Claimant provided an explanation for the calculations at C-CD.2, paragraphs 195 – 200.

²³⁸ BMD, paragraph 227.

²³⁹ BMD, footnote 395.

²⁴⁰ At BMD Section VI(F)(3).

²⁴¹ Amendment, paragraph 77.

provided a market outlet given the need for gas to produce electricity in Bangladesh...”²⁴² They assert:

*Thus, Chattak gas would have provided the Government with much-needed domestic natural gas for the country’s electricity generation. The blowout of the Chattak 2 well prevented this. To make up for the shortfall in fuel to generate power, Bangladesh was forced to replace the Chattak gas with higher priced fuels such as imported diesel and high-sulphur furnace oil (HSFO).*²⁴³

319. **The Claimant** points out that the JVA contemplated selling some or all produced gas to Petrobangla (or its designate) but it did not oblige Petrobangla or the Government to buy the gas. It adds:

*The Government’s claim for cost of replacement gas is in effect a claim for breach of a purported obligation to supply and deliver gas. Such a claim might be warranted if based on an executed contract for sale of a given quantity of goods at a certain price, but the JVA is not such a contract and no such contract was ever executed with the Government or anyone else in the present case.*²⁴⁴

320. The Claimant also argues that “the entire claim would still be excluded as claim for ‘consequential’, ‘indirect’ or ‘remote’ loss”.²⁴⁵

321. **The Tribunal** notes that the claim for the Government’s loss, as it was presented in BAPEX’s Memorial on Damages and thereafter, is for the alleged increase in electricity costs in Bangladesh because the power stations had to substitute the Chattak gas by other more costly fuel.

322. As the Claimant rightly points out, the JVA is not a GPSA, a contract for the sale and purchase of gas. Niko did not make any commitment to supply an agreed quantity of gas and its liability is not for having failed to supply such a quantity which the buyer had to replace by other fuel. The development of the Chattak field had not been completed and until now that field has not been put into production.

323. In these circumstances, treating the increase of electricity prices as a loss of the Government requires a number of assumptions. The Respondents’

²⁴² Amendment, paragraph 73.

²⁴³ Amendment, paragraph 76.

²⁴⁴ CMD, paragraphs 104 and 105.

²⁴⁵ CMD, paragraphs 75 – 82.

summary of the approach of their expert, quoted above, indicates some of them. None of these assumptions, however, include that the Bangladesh Power Development Board or any other electricity producer in Bangladesh, to which the Respondents referred in the passage quoted above, relied on the Chattak gas without having a GPSA for that gas from a field that had not been developed. There is therefore no basis for assuming that any electricity supplier had relied on Chattak gas and had to substitute it.

324. Despite the lack of factual support for this assumption, and in view of the procedure adopted for this phase of the proceedings, the Tribunal assumes that the Respondents' allegations are correct and that the power stations relied on the gas from the Chattak field and thus had to replace it in response to the blowout, with the result of higher electricity costs.
325. Assuming the existence of such an electricity producer relying on Chattak gas who had to replace it by other fuel, and assuming the loss of that supplier could be considered as a loss of the Government, such a loss would not be "naturally ar[ising] in the usual course of things from [Niko's] breach" and it there is no indication that the parties to the JVA "knew [or could have known] when they made the contract [that such a loss would] be likely to result from the breach" of Niko's Operator obligations when drilling the Chattak 2 well.
326. **The Tribunal concludes** that the loss for which the Respondents claim does not meet the conditions for liability under Section 73 first paragraph of the Contract Act. In any event, the loss would be "remote and indirect" and excluded under Section 73.2 of the Contract Act and excluded as "consequential" under Article 27.2 of the JVA.
327. This being said, as the Tribunal has explained above, the Government did suffer a loss. The loss identified by the Tribunal did not consist in increased electricity prices but in the unavailability of the blowout gas for the domestic market as required by Article 24.3 of the JVA. The Tribunal, therefore, considers the possibility that the Respondents could identify the loss claimed along the lines that the Government and Petrobangla had quantified it in the Money Suit.
328. Prior to the November 2020 Hearing, the Tribunal invited both sides to respond to the following question:

*If [the Government's] loss is accepted as recoverable, should it not be quantified by reference to gas prices on the market in Bangladesh?*²⁴⁶

329. At the Hearing the Respondents asserted: “The issue of gas prices obviously is one that pertains to valuation and is set out in Brattle’s Report and our proceedings”. The Tribunal clarified:

*The question there concerns what is compensable, is it the loss of the cheaper gas or is it the loss of the costs of electricity production by use of substitute fuels.*²⁴⁷

330. The issue raised by this question was further discussed at the Hearing. The Tribunal made it clear that, with respect to the loss due to the first blowout, the Government or Petrobangla did not have a given quantity of gas on which they counted and which, due to the blowout, was no longer available and had to be replaced. The Chattak field had not been put in production and no gas was available on which the Government or Petrobangla could have counted. Rather, if and when gas would have become available from the Chattak field, they would have had a source of gas that was additional to the otherwise available gas or could replace some of it. The Tribunal drew the attention of the Parties to the possibility that the Government’s prejudice might be quantified on that basis.²⁴⁸

331. The Tribunal explained this view at the start of the second day, inviting the Parties to consider it and comment.²⁴⁹ Following the Hearing, the Respondents wrote on 5 December 2020:

In light of Respondents’ more complete understanding of the Tribunals’ question, Respondents consider that the loss to the Government could be determined in relation to alternative gas supplies. The valuation of the loss on this basis would require further analysis, with input from valuation experts. Respondents respectfully inform the Tribunals that they are prepared to provide such analysis now or in the subsequent quantification phase.

332. Since the Government and Petrobangla had quantified their loss in the Money Suit by reference to the price agreed between Niko and Petrobangla

²⁴⁶ Questions for the November 2020 Hearing, Question 12.

²⁴⁷ HT (Day 1), page 68.

²⁴⁸ HT (Day 1), pages 67 and 68, (Day 2), pages 222 – 225, (Day 2), pages 359 – 368 (Respondents).

²⁴⁹ HT (Day 2), pages 223 and 224.

for the Feni gas and since the Claimant had initiated the proceedings on the Compensation Declaration in response to the Money Suit, the Tribunal would see no objection to the Respondents reverting to a quantification along these lines, provided the quantification is in line with the Tribunal's finding in the preceding section: the Government's loss is the unavailability of the blowout gas for the "Bangladesh domestic market", as understood in Article 24.3 of the JVA, in the quantity for which Niko is liable. In any event the compensation which BAPEX may claim on behalf of the Government may not exceed the difference between the price that Petrobangla would have paid to the BAPEX/Niko Joint Venture and the market price, determined by reference to the price the Government or Petrobangla paid to comparable gas producers in Bangladesh.

9. THE SECOND HEAD OF LOSS: LOSS OF PRODUCTION DUE TO DAMAGE TO THE OVERBURDEN AND DRILLING HAZARDS CAUSED BY THE CHATTAK 2 WELL BLOWOUT

333. **The Respondents** assert that, due to the blowouts and the continued seepage of gas, an additional loss occurred. This loss does not consist in the gas that escaped from the Reservoir but in the gas that remained in it. According to the Respondents that gas can no longer be extracted from the Reservoir and therefore must be treated as lost. The Respondents clarified that the gas in the sands below the Reservoir are not to be treated as lost.²⁵⁰
334. The Respondents explain that the “Chattak 2 well blowout caused physical damage and alteration to the Chattak reservoir and the area above it, including the creation of serious drilling hazards. This made the safe and economically viable production of gas from the shallow Sands 1 and 2 unfeasible, resulting in a total loss of production from these sands”.²⁵¹ They attribute the drilling hazards to gas “trapped by impermeable formations in the sands above the reservoir” and “changes” in these sands.²⁵² The Respondents conclude that this is “direct loss because the sole reason these hazards exist is Niko’s failure to conduct the Chattak 2 well operations” as required under the JVA; the hazards “are the direct physical effect of the Chattak 2 well blowout”.²⁵³
335. **The Claimant** denies that the gas in the Reservoir can no longer be extracted. It asserts that “Sands 1 and 2 could have been and can be developed safely and economically”.²⁵⁴ It argues that, had the claimed loss occurred, it would be excluded as it is a “loss arising from the result of damage rather than from the damage itself”.²⁵⁵ The Claimant also refers to “intervening causes”²⁵⁶ and denies that the Parties could have “contemplated as a likely result” of the blowout, the circumstances on which the Respondents rely.²⁵⁷

²⁵⁰ HT (Day 1), page 59.

²⁵¹ Amendment, paragraph 46.

²⁵² HT (Day 1), page 43 and Respondents’ Presentation, 19 November 2020, Slide 35.

²⁵³ Amendment, paragraph 52.

²⁵⁴ CMD, title VIII (B), page 55.

²⁵⁵ CMD, paragraph 61.

²⁵⁶ CMD, paragraphs 62 and 63.

²⁵⁷ CMD, paragraph 64.

9.1 The alleged causes for the loss of the gas from Sands 1 and 2

336. The Tribunal had invited the Respondents specifically to consider “the chain of events leading to the loss of any production from the Chattak field”.²⁵⁸

337. At the November 2020 Hearing the Respondents referred to the explanations in the Amendment and to the GeoMechanics first expert report. They explained that the first blowout fractured the Upper Marine Shale above Sands 1 and 2 and that, through the bridging of the Chattak 2 well, gas from the reservoir was redirected underground. That gas caused the hazardous situation above the reservoir as follows:

- *The gas was trapped by impermeable formations in the sands above the reservoir and partly found new paths to the surface;*
- *This caused damage and changes in the sands above the reservoir; and*
- *Created serious hazards for drilling and production activities that persist today.*²⁵⁹

338. Relying on the expert reports of Mr Hughes and Mr Wilson, the Respondents state that this development created a “drilling hazard zone”²⁶⁰ of “at least a 500-meter radius around the Chattak 2 well crater”.²⁶¹ For Mr Hughes, the Respondents’ expert opining on drilling operations, the risk zone is even larger and exists “within a 1’000-meter radius of the Chattak No 2 wellbore”.²⁶² Mr Hughes is of the view that drilling into the Reservoir from outside this risk zone would require “highly deviated, near horizontal wells to reach Sands 1 and 2, which would be extremely complicated and cost prohibitive”.²⁶³

339. On this basis the Respondents and their experts conclude that these hazards are so great that they prevent drilling to Sands 1 and 2 or make it economically unviable.

²⁵⁸ Questions for the November 2020 Hearing, questions 13 and 14.

²⁵⁹ Respondents’ Presentation, 19 November 2020, Slide 35 and HT (Day 1), page 43.

²⁶⁰ Amendment, paragraph 50.

²⁶¹ Amendment, paragraph 48.

²⁶² Hughes II, page 9.

²⁶³ Hughes II, page 5.

340. As the quoted passages show, there are two causes for the hazards on which the Respondents rely: the gas traps in the area above the Reservoir and the geotechnical damage to this area. The Tribunal examined these two causes separately.

9.1.1 Layers of shale trapping pockets of gas in the area above the Upper Marine Shale

341. The “impermeable formations in the sands above the reservoir”, also referred to as “thin layers of shale”, are discussed by all three experts on which the Respondents rely for this part of their case. While all three of these experts attribute critical importance to these layers of shale for their conclusion, they provide rather different graphical representations of them.

342. The GeoMechanics Expert Report relies on a series of geologic and leakage duration scenarios applied to a 3D geologic, geomechanics and gas flow model; these experts compared the information provided by the model with field observations on surface gas emissions reported by another expert engaged by BAPEX, Mr Steve Williams.²⁶⁴ The GeoMechanics Report concluded that the Chattak 2B relief well did not produce a complete sealing and that, after the completion of the relief operation, gas continued to leak from the Reservoir at a reduced rate and migrated to the surface. The expert then considered scenarios “in which some residual leakage through the Upper Marine Shale continues for 10 years. That is, we consider a situation in which the Chattak 2B Relief Well has sealed 90% of the leak, but allows 10% of the rate to continue”.²⁶⁵

343. The report assumed that in the area above the Upper Marine Shale there was at least one thin shale layer over a long distance and possibly several others. It presented the layer as follows:²⁶⁶

²⁶⁴ Both reports were produced with the BMD.

²⁶⁵ GeoMechanics Expert Report, 22 March 2016 (GeoMechanics Report), page 23.

²⁶⁶ GeoMechanics Report, page 6.

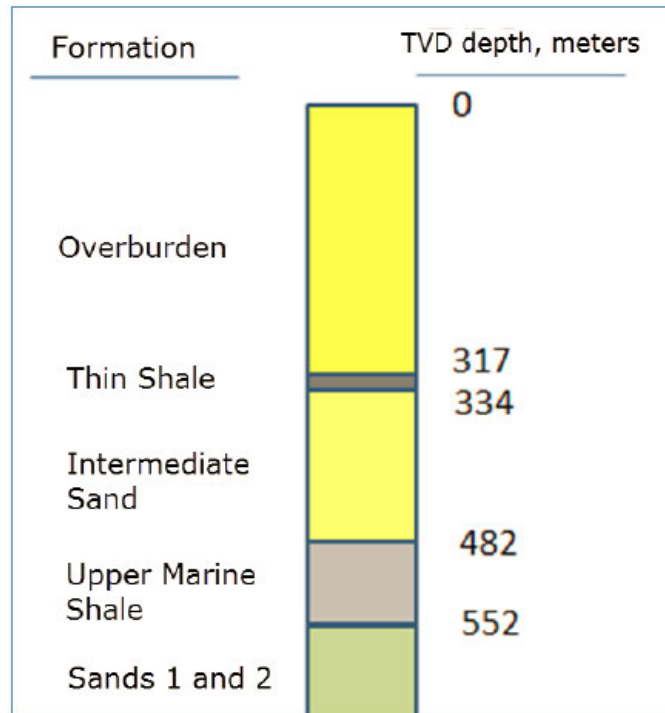


Figure 1. Stratigraphic column at the Chattak 2C Well

(Interpreted using: Niko Resources (Bangladesh) Ltd., *Chattak 2C Well Logs* (2005)(R-48))

344. In the Supplemental Report GeoMechanics developed this point by stating:

*The gas was likely trapped at different depths and locations by impermeable shale or clay layers, including by the thin shale layer noted in our First Expert Report and represented in Figures 1 and 2 in this Supplemental Report.*²⁶⁷

345. Figures 1 and 2 to which this comment refers were introduced by the following comment:

Figures 1 and 2 below provide illustrations of two potential scenarios for gas leakage and migrations, based on model simulation results. In the first scenario, shown in Figure 1, we assume the existence of a continuous thin shale capping the intermediate sand. While it is likely that there are additional shale layers of varying size in the intermediate sand and overburden that act to trap and disperse gas, because it is not possible to pinpoint their location, we did not use such formations in the model simulations. With the blowout of the Chattak

²⁶⁷ GeoMechanics Supplemental Expert Report, 7 September 2020, pages 2 and 3.

2 well, some gas would have immediately leaked up the open borehole to the near surface area. A large amount of gas would also leak laterally into the intermediate sand from the open borehole, forming a gas cap beneath the thin shale. This vertical and lateral gas migration is indicated with the vertical and blue arrows in Figure 1.

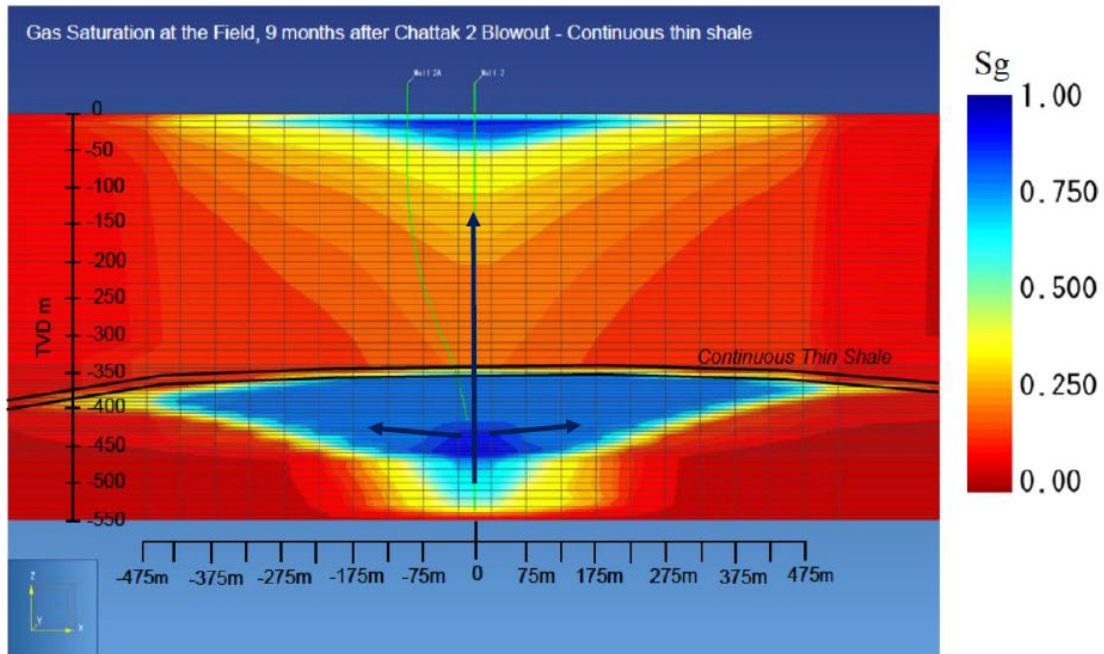


Figure 1. Estimated gas saturation within Intermediate Sand beneath thin shale zone and within Overburden 9 months after initial Blowout of Chattak 2 assuming continuous thin shale layer and not modelling other impermeable shale layers. (Figure 10 from Geomechanics Expert Report, 2016). Blue arrows indicate gas flow paths. Color scale on right is gas saturation.

346. These explanations and Figure 1 are followed by the following text and by Figure 2:

We note that while there is evidence of the thin shale in some of the well logs, there is no certainty that the shale is continuous. Considering the depositional environment, it may be continuous or discontinuous over the general area. We therefore also considered a scenario in which a thin shale layer is present, but not continuous, but as noted above, did not include in the model additional shale layers that are likely present. This scenario is shown in Figure 2. In this situation a significant amount of gas would still migrate laterally, but some would encounter areas with no shale allowing gas to flow upwards at these locations. The potential multiple vertical and lateral gas flow paths are indicated with vertical and horizontal blue arrows in Figure 2. Were the gas to encounter additional shale layers on its

upward migration, additional pockets would likely also form at those higher locations.

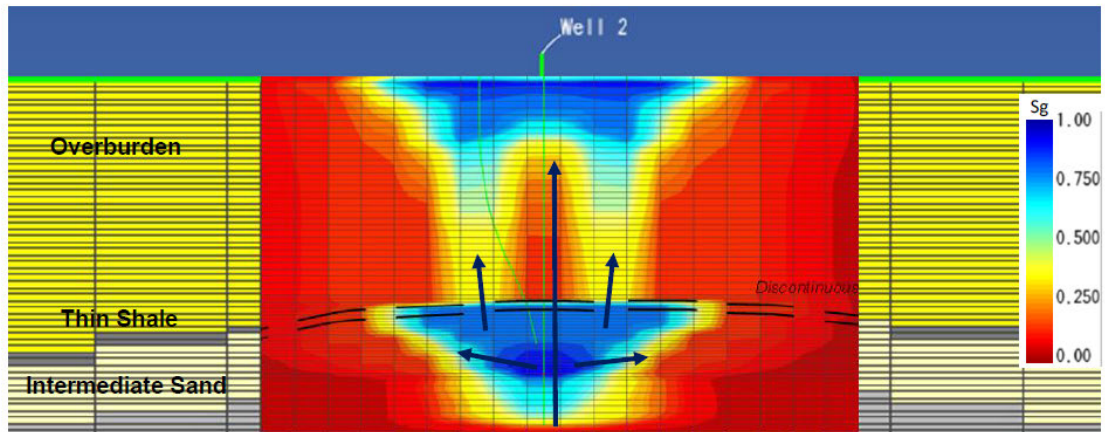


Figure 2. Estimated gas saturation within Intermediate Sand beneath thin shale zone and within Overburden 9 months after initial Blowout of Chattak 2 assuming discontinuous thin shale layer and not modelling any additional shale layers. (Figure 11 of Geomechanics Report, 2016, with stratigraphy overlay). Blue arrows indicate gas flow paths. Color scale on right is gas saturation.

347. In the Memorial on Damages BAPEx relies on another expert report, that of Ryder Scott, which represents this configuration of a plurality of shale layers as follows:²⁶⁸

²⁶⁸ BMD, page 97; see also Ryder Scott Supplemental Expert Report, page 31.

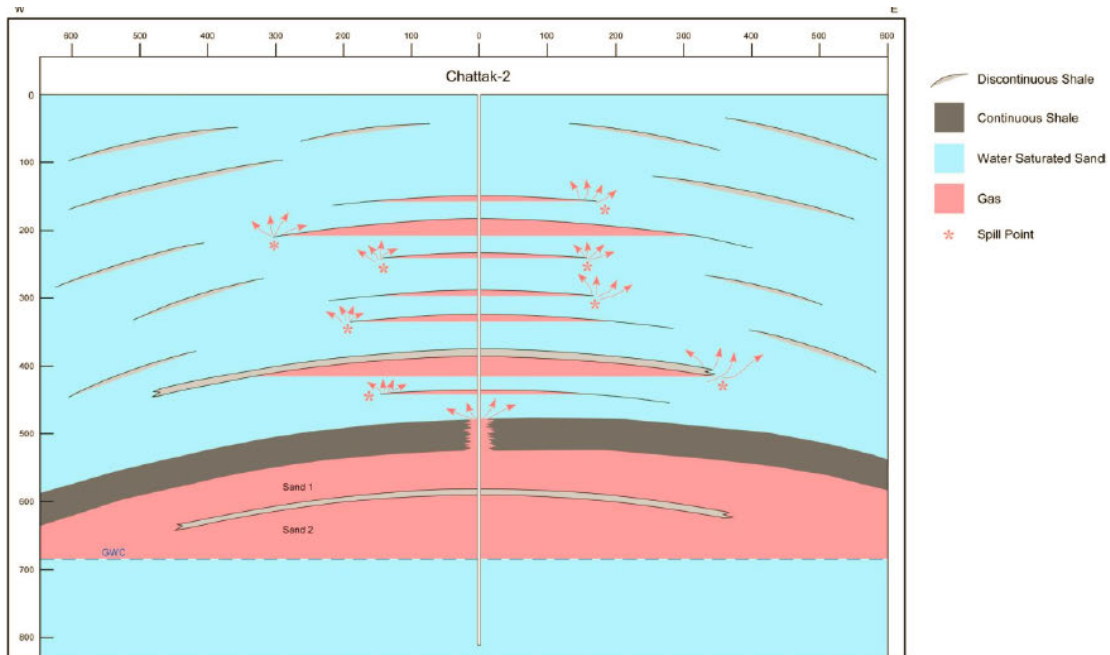


Figure 7: Ryder Scott Expert Report, p. 31, Exhibit 9. Conceptual diagram showing the features above Sand 1/2 that have the potential to trap gas from a breach of the Upper Marine Shale caused by the Chattak-2 blowout.³²⁵ GeoMechanics and Mr. Wilson have also produced similar diagrams. GeoMechanics Expert Report, p. 24; Wilson Expert Report, p. 92.

348. Exhibit 9 of the Ryder Scott Report, from where this “Conceptual Diagram” is taken, clarifies:

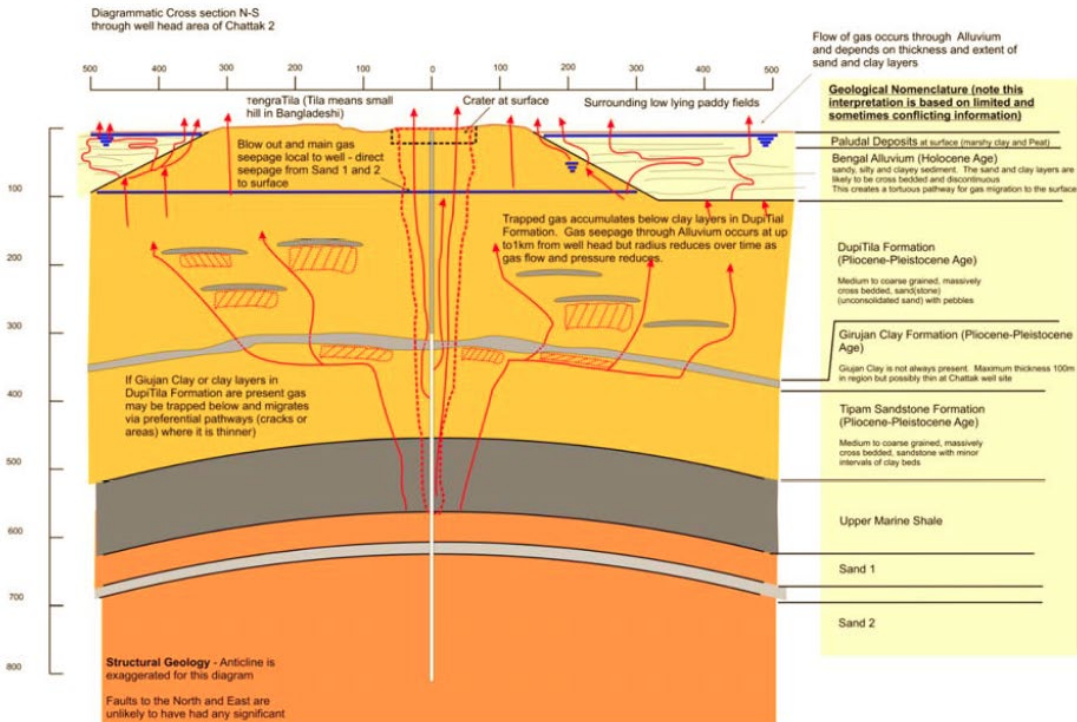
Although the available data limitations do not allow for the identification of the number and extent and position of the trapping features, numerous shale intervals have been identified in all Chattak West wells for which log curves capable of identifying shales have been provided. It is difficult to envision a scenario where there would be no shale intervals draped over the crest of the Chattak West structure in a position where they could trap gas.²⁶⁹

349. The representations in the GeoMechanics Report, mentioned in the explanatory note of the Respondents’ representation of the Conceptual Diagram, is essentially the same as Figures 1 and 2 from the Supplemental GeoMechanics Report, except that in that report arrows showing the flow of gas and some other details were added, whereas GeoMechanics assumes a single thin shale layer.²⁷⁰

²⁶⁹ Ryder Scott Expert Report, page 31, note at Exhibit 9.

²⁷⁰ GeoMechanics Report, page 24

350. A third representation of the geological development on which the Respondents rely can be found the first Wilson Report:²⁷¹



351. All of these explanations and their graphical representation state that the area above Sands 1 and 2 and above the Upper Marine Shale have a “thin shale capping the intermediate sand”, a layer that possibly is discontinuous, and a number of other thin shale layers.

352. The effect of these layers is described in the GeoMechanics Report as likely to “to diffuse gas migration laterally for several hundred meters”. The report concluded that

... [t]his would indicate that some significant gas remains trapped in the subsurface, presenting an ongoing hazard.²⁷²

353. The Respondents explain that the gas so trapped by the thin shale layers formed gas pockets which could lead to further blowouts, as the second

²⁷¹ Expert Report of Steven Wilson, 23 March 2016 (Wilson I), Figure 6.1, at page 92.

²⁷² GeoMechanics Report, page 28.

blowout had shown. In the Amendment, BAPEX presents the following representation of the Chattak 2A blowout:²⁷³

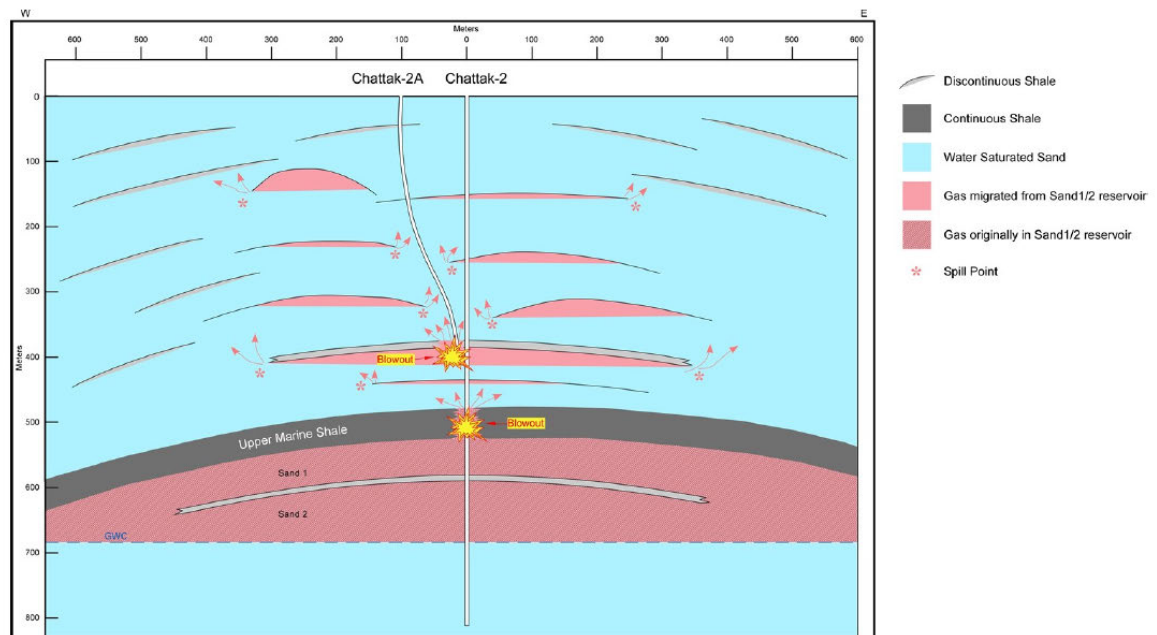


Figure 1. Schematic diagram showing the relationship between the Chattak-2 and Chattak-2A blowouts. The gas pocket that caused the Chattak-2A blowout is significantly shallower than the Sand 1/2 Reservoir and was not present prior to the Chattak-2 blowout. This gas pocket represents a drilling hazard and contains gas, which escaped from the Sand 1/2 Reservoir due to the rupture of the reservoir top seal (Upper Marine Shale) as a consequence of the Chattak-2 blowout.

354. In the Hughes Supplemental Report a drawing is presented with some further details:²⁷⁴

²⁷³ Amendment, page 11.

²⁷⁴ Hughes II, page 10.

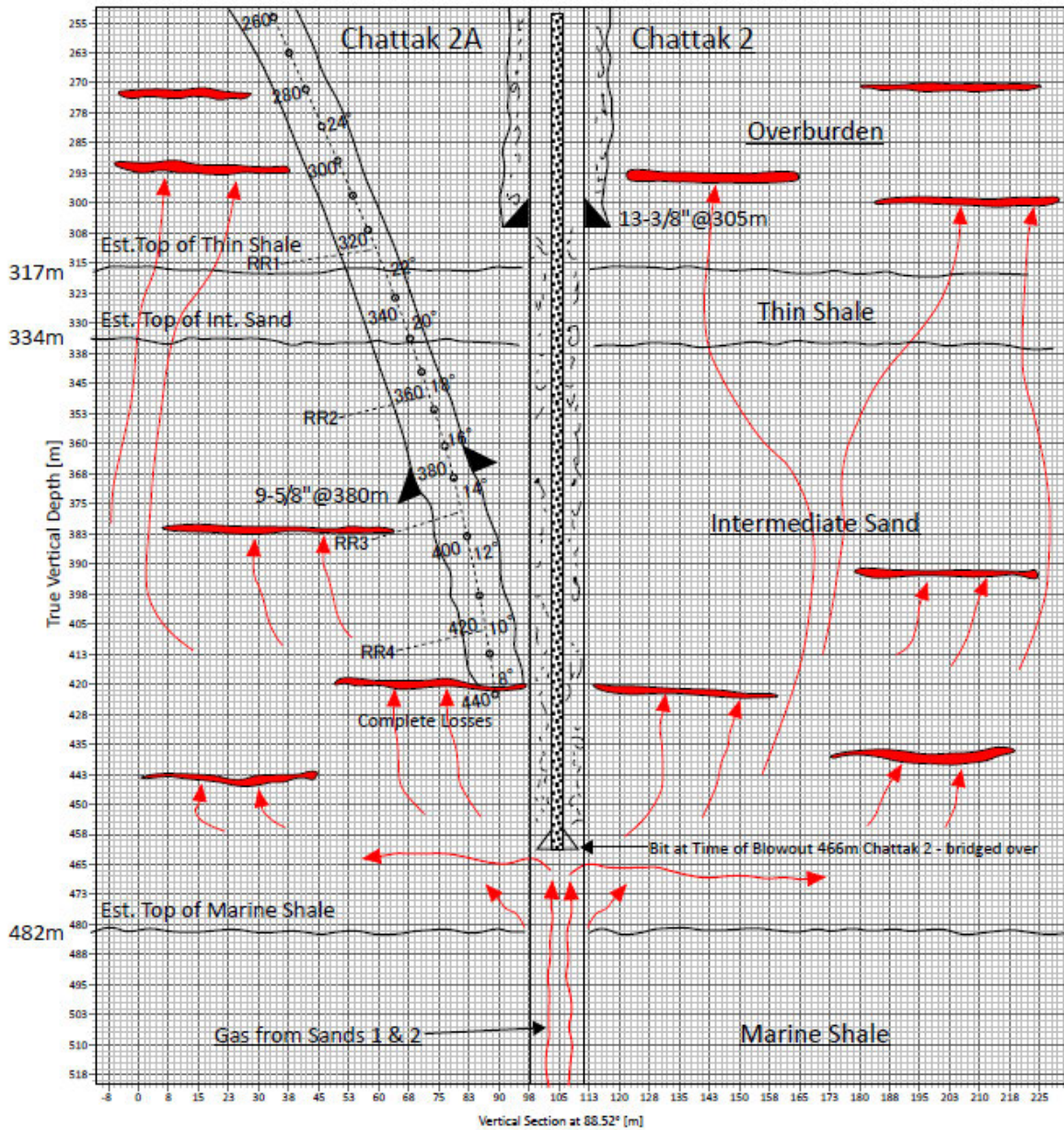


Figure 1 – Cross-Section View of Chattak 2 and Chattak 2A – June 24, 2005

355. The Hughes Supplemental Report provides the following explanatory Note:

The location of impermeable gas traps in the sands is notional. While it is extremely likely that they exist based on well data and the dispersion of the gas as it travels to the surface, it is not possible to know their exact location and size. We do know that there was trapped gas at the location of the Chattak 2A well blowout because this was above the reservoir seal and the well encountered a very large amount of pressurized gas. If there was not a trap at this location, the gas would have dissipated and not accumulated in large

*quantities at that location. The representation of the thin shale layer is based on the GeoMechanics model as expressed in their report dated March 22, 2016, which is consistent with the limited well data available. My representation assumes the existence of some areas of permeability in the thin shale layer.*²⁷⁵

356. **The Claimant** objects to these explanations, observing at the Hearing that it had been established during the Liability Phase that the cause for the second blowout was an “unexpectedly premature communication with [the Chattak 2] wellbore”.²⁷⁶ For the purpose of the present examination, the Tribunal assumes that Mr Hughes’ assertion is correct and that the Chattak 2A well blowout was caused by gas trapped by a layer of shale, supporting the assumption of a series of such layers, capable of trapping gas that escaped from the first blowout and migrated through the area above the Reservoir.

9.1.2 Geotechnical damage to the area above the Upper Marine Shale

357. Apart from the gas pockets formed by the thin shale layers, the Respondents and their experts describe a further circumstance that caused the hazard for future drilling in the Chattak field: geotechnical damage to the area above the Upper Marine Shale. The gas from the blowouts and the subsequent continued migration of gas to the surface caused geotechnical instability.

358. In the GeoMechanical Report this is described as follows:

- *The gas blowout experienced in the Chattak Field allowed relatively high-pressure gas to flow at high rate through shallower sediments and is likely to have caused additional geotechnical and geomechanical damage. Gas pressure exceeded fracture pressure in shallow sections. High rate gas flow transported solids, creating fractures and faults and surface caving. This presents geotechnical instability hazards in the near surface soils.*²⁷⁷

²⁷⁵ Hughes II, Note on page 10.

²⁷⁶ HT (Day 1), page 144.

²⁷⁷ GeoMechanics Report, page 2.

359. Similar explanations are contained in the reports of the other experts. The Respondents rely on them. They quote for instance from the reports of Mr Hughes:

...uncontrolled release of natural gas from Sands 1 and 2 over a 10-year period has caused the formations above the Upper Marine Shale to become artificially charged up with gas while at the same time lowering the bottomhole pressure in Sand 1 and presumably Sand 2 as well. ...[s]ubsurface soils above Sands 1 and 2 have now become unstable to the point where trying to drill a new well through those formations would cause undue risk and result in, at the very least, lost returns and a stuck drill pipe and, at the worst, another blowout if a pocket of gas in a charged up formation is released to the surface while drilling.²⁷⁸

9.1.3 The consequences of the drilling hazards

360. The Respondents and their experts conclude from the existence of these hazards in the area above the Reservoir that, as stated above, Sands 1 and 2 could not be safely drilled. The Hughes Supplemental Report for instance makes the following affirmations:

Any competent international oil and gas company would have realized that drilling additional wells in the Chattak West Gas Field would become hazardous because of the Chattak No. 2 blowout. This is because anytime a well blows out and subsequently craters and shuts off flow at the surface, there is a strong likelihood that gas still being released from the source of the blowout would become trapped in formations above that point. After the Chattak No. 2 well was originally shut in for well control on January 7, 2005, the weaker formations above Sands 1 and 2 broke down and became "charged" with natural gas. This charging up of shallow sands above Sands 1 and 2 was a direct and foreseeable consequence of the Chattak No. 2 blowout. It has created a significant risk of additional safety and well control problems for drilling within a 1,000-meter radius of the

²⁷⁸ Expert Report of Jeffrey Hughes, 23 March 2016 (Hughes I), page 3, quoted at BMD, paragraph 194.

*Chattak No. 2 wellbore and caused the blowout of the Chattak No. 2A well and made the further development of Sands 1 and 2 unviable.*²⁷⁹

361. While these risks in the Overburden above the Reservoir, according to the Respondents, excluded drilling through them to Sands 1 and 2, the lower sands remained accessible. They had to be drilled from outside the hazard zone. Relying on the Hughes Report, the Respondents explain that

*... the appropriate means of avoiding the hazard created by the Chattak blowouts is to move the surface location of operations to a distance of at least 500 to 1000 meters from their current location and to target only Sands 3 through 8. Doing so would obviate the need to drill through the area of gas-charged sands above Sands 1 and 2 and avoid the destabilised and fractured shallow sediments above Sands 1 and 2.*²⁸⁰

362. Again relying on the report of Mr Hughes, the Respondents explain that this method of reaching Sands 3 to 8 is not viable for drilling Sands 1 and 2. They state that it is

*... not possible to reach Sands 1 and 2 without drilling into the area above them that is likely charged with gas and contains destabilised and fractured sediments. In addition, because of the shallow depth of Sands 1 and 2, moving the surface location 500 to 1000 meters away would require highly deviated, near horizontal wells to reach the Sands.*²⁸¹

363. The Respondents quote Mr Hughes

*this is a challenging operation for most drilling rigs and crews working to the shale plays of the United States and would be particularly difficult for the types of rigs and crews available to work in Bangladesh.*²⁸²

364. Concluding their explanations, the Respondents state:

In Mr Hughes' opinion, the risks involved and the potential of all of these dangers to dramatically increase the costs of drilling and

²⁷⁹ Hughes II, page 9.

²⁸⁰ BMD, paragraph 196, relying on Hughes I.

²⁸¹ BMD, paragraph 197.

²⁸² Hughes I, page 4, quoted at BMD, paragraph 197.

*compounding the wells make it unadvisable to attempt to develop Sands 1 and 2 following the Chattak 2 blowout.*²⁸³

9.1.4 The Claimant's response concerning the alleged causes for the loss of the gas from Sands 1 and 2

365. The Claimant denies that Sands 1 and 2 can no longer be developed.
366. The Claimant argues that the relevant situation was that prevailing immediately after the blowouts. In 2005 – 2006, when it had successfully drilled Chattak 2C and 2B and proposed to drill production wells, “the Sands 1 and 2 reservoirs [...] were patently capable of being safely drilled”.²⁸⁴ It describes the contrary expert opinions as “little more than speculation underpinned by unqualified extrapolation and an invalid geotechnical model”.²⁸⁵
367. With respect to the period immediately after the blowouts, the Claimant refers to the 2C and the 2B wells that were drilled without the alleged risks materialising. It also referred to the discussions about drilling of a new production well that has been considered above in Section 8.3.2.
368. The Claimant also discusses in detail the explanations by the Respondents and their experts in support of the assertion that the drilling in the alleged hazard zone had become excessively dangerous and that drilling from outside this zone was not technically and economically viable.²⁸⁶ The Claimant contests the factual assumptions and the relevance of the expert opinions. Considering the GeoMechanics scenarios by which the Respondents seek to establish the presence of pressurised gas pockets below thin shale layers, the Claimant produces its own expert reports and concludes that GeoMechanical's

*assumptions that result in modelling significant gas trapped below a Thin Shale above the regional seal – the postulated significant drilling hazard – are utterly contrary to the facts.*²⁸⁷

²⁸³ BMD, paragraph 201.

²⁸⁴ CMD, paragraph 175.

²⁸⁵ CMD, paragraph 181.

²⁸⁶ CMD, section VII, pages 51 – 80.

²⁸⁷ CMD, paragraph 204.

369. Finally, the Claimant quotes from the testimony of Mr Wright at the November 2015 Hearing, when he gave examples how fields continued to be developed after a blowout. He explained that turning the relief well into a production well “is a fairly common thing”. He was “not aware of any other fields that a crater blowout has been drilled and killed the blowout but the field had to be abandoned because of that”.²⁸⁸ The Claimant also referred to the experience at the Moulavi Bazar field in Bangladesh, where a blowout occurred and the field subsequently produced a large quantity of gas.²⁸⁹
370. The Claimant concludes that the Respondents’ assertion that drilling into Sands 1 and 2 in the Chattak field is no longer viable “is entirely unsubstantiated and must be rejected”.²⁹⁰

9.1.5 The Tribunal’s position

371. The Tribunal notes that the Respondents’ assertions leading to the conclusion that the gas in Sands 1 and 2 is lost are contested by the Claimant on factual and methodological grounds. In the context of the present position the Tribunal is not called upon to make any conclusions on the substance of the Respondents position and on these objections by the Claimant.
372. For the purpose of the present decision, the Tribunal assumes that the assertions by the Respondents and its experts are correct and the reservoir of Sands 1 and 2 has become incapable of being developed.
373. At this stage, the task of the Tribunal is to determine whether the loss of the gas remaining in Sands 1 and 2, assuming it occurred as alleged by the Respondents, is recoverable. For this purpose, the Tribunal will examine the causal link between Niko’s breach, as determined in the Decision on Liability, and the damage claimed here.

²⁸⁸ CMD, paragraph 226, quoting from the transcript of the Liability Hearing on 7 November 2015, pages 1490 and 1491.

²⁸⁹ CMD, paragraph 227.

²⁹⁰ CMD, paragraph 7.

9.2 Is the alleged loss of the gas remaining in Sands 1 and 2 recoverable?

374. The Parties disagree about the question whether the alleged loss of the gas remaining in the Reservoir is direct or excluded by the second paragraph of Section 73 of the Bangladesh Contract Act or Article 27.2 of the JVA. The Tribunal will first examine whether the conditions are met for compensation as direct loss under the Contract Act.

9.2.1 Did the claimed loss arise naturally in the usual course of things from the breach?

375. **The Claimant** describes the lost gas claim of the Respondents as follows

... a purported (and factually unsustainable) sequence of events leading to an alleged need to abandon any production from [Sands 1 and 2]. Critically, the alleged sequence of events relied on by BAPEx renders the loss “consequential” or “indirect”, and therefore within the excluded types of losses.²⁹¹

376. For the Claimant the “insurmountable directional drilling risks [that] preclude the commercial development of Sands 1 and 2” are caused by several “supervening causes”, as considered in *Saint Line*, and, according to the definition in Black’s Law Dictionary, arise “from the result of the damage rather than from the damage itself”.²⁹² The “subsurface geological trapping mechanism and other ‘geotechnical and geomechanical’ effects” include in the course of events a “supervening cause”. The loss, therefore, “falls squarely within the category of ‘consequential’ and ‘indirect’ losses”.²⁹³

377. **The Respondents** deny that the chain of events leading to the loss included any intervening event. They argue that the loss was simply and directly due to “the flow of gas through the medium from which it was being extracted”. BAPEx reaches this conclusion by describing the first blowout until the well “bridged off” and then explains:

... the formation sands and shale packed off around the drilling string casing, which then redirected the gas underground. From there, the

²⁹¹ CMD, paragraph 6.

²⁹² HT (Day 1), pages 149, 150, 153; similarly already in CMD, paragraph 61.

²⁹³ CMD, paragraphs 62, 63; similarly HT (Day 1), pages 151 – 152.

gas was trapped by impermeable formations in the sands above the reservoir, and some of the gas found additional pathways to the surface. This caused changes in the sands above the reservoir and created serious drilling hazards through trapped gas and the continued seepage of gas to the surface that continue to the present day.

There is no intervening event of any kind here. This is nothing more than the operation of the law of physics giving rise to the natural and direct consequences of the blowouts. There is nothing more here than the flow of gas through the medium from which it was being extracted.²⁹⁴

378. **The Tribunal** determined in the Decision on Liability that Niko had breached its duty as prudent operator. This breach caused the first blowout and the release of gas from the Reservoir. This blowout and the gas so released did not cause by themselves the loss of the gas in the Reservoir. This loss, if it occurred, did so only because the overburden above the Reservoir, according to circumstances on which BAPEX relies, contained thin layers of shale and these layers were of a configuration and in numbers that they trapped gas. The pockets of gas so created were spread over a range up to and beyond 500 meters around the Chattak 2 well and were of such importance that drilling within this range became excessively hazardous; and drilling beyond this range would be excessively costly.
379. Considering the critical role of the thin layers of shale in this chain of events, the Respondents argue that “[s]hale and other impermeable formations are common throughout this region and in many regions of the world and do not constitute special circumstances”.²⁹⁵ The Respondents request that they be allowed to produce evidence in support of this assertion.²⁹⁶
380. For the issue considered here, the Tribunal assumes, without requiring evidence, that the assertion is correct; shale and other impermeable formations are common in the region.

²⁹⁴ HT (Day 1), pages 43 and 44.

²⁹⁵ HT (Day 1), page 46.

²⁹⁶ HT (Day 1), page 47.

381. The fact that shale layers and other impermeable formations are common in the region does not mean, however, that they are necessary and natural components of the overburden above the Reservoir. Without such shale layers, the gas that escaped from the Reservoir would have migrated through that overburden without forming any gas traps. The shale layers thus are an additional element of causation in the chain of events.
382. More important, the presence of layers of shale, as they are “common throughout the region”, are not a sufficient cause for the claimed loss. The size, configuration and location of such thin shale layers are by no means a standard phenomenon. The presence of such layers in the region does not allow predictions about the concrete situation in the Chattak field around the Chattak 2 well. In creating the scenarios on which they relied for their demonstrations, the Respondents’ experts had to make assumptions about them. A comparison of the graphic representations of these layers, as they have been reproduced above, is revealing. In each of these representations the layers differ in shape, size and location.
383. The position was clarified at the Hearing. The Respondents had shown the graphic from the Hughes Supplemental Report reproduced above which showed the thin layers of shale in the form of red lines. The Respondents’ counsel was asked:

And the red lines you have on your drawing are the artist’s imagination? There is no evidence for these?

Mr SMITH: No, there is no evidence for their location. There is evidence for their existence.²⁹⁷

384. The scenarios are assumptions by the experts. It is only on the hypotheses of scenarios adopted by the experts in which the thin shale layers had configurations that would retain gas in quantities that could create a drilling risk (and because in these scenarios such shale layers were placed at locations where the experts decided to place them) that the described effect would have occurred. If one thus considers the first scenario of GeoMechanics in their Figure 1 but on the assumption of a different shape and location of the thin shale layer, the result may have been that no gas was trapped, or gas was trapped at different locations, with different and possibly less drilling risks.

²⁹⁷ HT (Day 2), page 353.

385. In other words, accepting that thin layers of shale were present in the sand above the Reservoir by no means allows the conclusion that this sand was transformed into the large hazardous zone on which the Respondents rely as the reason for the inaccessibility of the gas remaining in the Reservoir. For this to occur, the layers had to be of a size and shape that they could trap pockets of gas large enough to cause a drilling risk and they had to be dispersed over an area of at least 500 meters from the Chattak 2 well so as to render drilling from outside this area economically unfeasible.
386. These specific circumstances, which are the necessary prerequisite for the development of the alleged drilling hazard, constitute an additional element in the chain of causation. In the opinion of the Tribunal, the alleged drilling hazard arising in these assumed circumstances cannot be considered as having arisen naturally, in the usual course of things.
387. Moreover, the alleged drilling hazard is not an absolute obstacle to developing Sands 1 and 2. It would be so only if Niko or any other developer shared the assessment of the Respondents' experts and were unable to either manage the risk described by them by adequate technology or drilling methods, or to organise their drilling operations in a manner that avoids the risk area. These are additional assumptions that remove the claimed loss further away from a situation arising in the usual course of things.
388. Finally, the Tribunal has considered that the effect described by the Respondents' experts occurred because the experts assumed that during the ten years between the blowouts and their observation of seepages in 2016, gas continued to escape from the Reservoir. This is explained clearly in the Hughes Report:

*The uncontrolled release of natural gas from Sands 1 and 2 over a 10-year period has caused the formations above the Upper Marine Shale to become artificially charged up with gas while at the same time lowering the bottom hole pressure in Sand 1 and presumably Sand 2 as well.*²⁹⁸

389. For this effect to occur, it must be assumed that the Chattak 2B relief well did not properly seal the Chattak 2 wellbore and based on the information

²⁹⁸ Hughes I, page 3.

provided no other measure was taken to reduce or stop the flow of gas from the Reservoir.

390. The damage for which the Respondents seek compensation under their second head of loss, thus would depend on several supervening events and would have developed only over time as the result of a failure to take any action to stop the allegedly continuing seepages. Such damage cannot be accepted as a damage that “naturally arose in the usual course of things” from Niko’s breach of its duties as prudent operator.
391. In any event, the intervening events would make such a damage “indirect” and “consequential” by any definition of these terms and thus would exclude the loss according to Section 73, second paragraph of the Contract Act and Article 27.2 of the JVA, as explained above in Section 7.3.

9.2.2 Did the Parties know, when concluding the JVA, that Niko’s breach of its duties as Operator would likely cause the loss of the gas remaining in Sands 1 and 2?

392. The Parties have also debated the question whether Niko’s liability for the second head of loss could be based on the second limb of Section 73, first paragraph, of the Contract Act, viz. whether the Parties, when they concluded the JVA, knew that the loss of the gas in the Reservoir would be a likely result of the breach which Niko committed. Since the Tribunal has concluded in the previous section that the loss is indirect and consequential, it would be excluded in any event by Section 73, second paragraph, of the Contract Act and by Article 27.2 of the JVA, as explained in Section 7.3 above. Given the importance of this claim and the consequences of the decision to exclude it, the Tribunal has also examined this possible basis of the claim.
393. **The Claimant** has contended that

... it cannot be said that the parties could have “contemplated as a likely result” of a blowout, the trapping of gas above the regional seal in quantities that would create an insurmountable drilling hazard in a 500m radius around the Chattak 2 well so as to require a new drilling location that would make drilling into the reservoirs unviable.²⁹⁹

²⁹⁹ CMD, paragraph 64.

394. Responding to a question of the Tribunal with respect to the Parties' knowledge of shale layers trapping gas,³⁰⁰ **the Respondents** stated at the Hearing:

BAPEX does not concede that the geological conditions of the Chattak field were somehow special circumstances, nor that they were not—that they were unknown or not within the reasonable contemplation of the Parties when Niko signed the JVA.

Shale and other impermeable formations are common throughout this region and in many regions of the world and do not constitute special circumstances. This is clearly an issue of fact that requires the assessment of evidence and Expert Opinions to be addressed during the complete evidentiary phase of these proceedings. And, to the extent the Tribunals wish to consider them, they must assume that these facts are as alleged by BAPEX.³⁰¹

395. The point has been considered already in the previous section, when the question was examined whether the shale and other impermeable formations eventuated in the “usual course of things” of a loss developing from a blowout. The Tribunal has accepted, for the sake of argument at the present stage of the proceedings, that the Respondents were correct, and thus assumed that such formations are common in the region. The Tribunal also assumes, for the present examination, that the existence of such formations was in the reasonable contemplation of the Parties when they concluded the JVA.

396. For the question that must be decided when addressing the second limb of Section 73, first paragraph of the Contract Act the knowledge of these formations is not the decisive point; it is the damage which the Parties must have known “to be the likely result from the breach” of the contract. That damage in the present case is the unavailability of Sands 1 and 2 and of all the remaining gas in the Reservoir. The Respondents do not allege that the Parties knew or should have contemplated that the breach of Niko's duties as Operator would likely result in the loss claimed by the Respondents.

397. The evidence before the Tribunal shows the contrary: even after the breach of Niko's duty had been committed and the Chattak 2 blowout had

³⁰⁰ Questions for the November 2020 Hearing, question 15.

³⁰¹ HT (Day 1), pages 46 and 47.

occurred, the Parties did not contemplate a loss as claimed by the Respondents. They assumed that drilling the sands above the Reservoir remained possible. As discussed above in Section 8.3.2, Niko submitted work programmes for drilling one or more production wells. BAPEX and the Government did not object that the drilling of such wells had become too hazardous or that the gas in the Reservoir had been lost; they rather posed conditions of performance which Niko did not accept. The development of the Reservoir, in the eyes of the Parties, remained technically feasible and not precluded, despite the blowouts and the hazards attributed to them.

398. This excludes, in the eyes of the Tribunal, that the Parties, when they concluded the JVA, knew or even contemplated these hazards and a resulting loss of the gas from the Reservoir as a likely result of a breach of Niko's obligations as the Operator.
399. **The Tribunal concludes** that the Second Head of Loss for which the Respondents claim, if it were found to have occurred, would not be a damage that had to be compensated under Section 73, first paragraph of the Contract Act. In any event it would be excluded by the second paragraph of that section and by Clause 27.2 of the JVA. **The Second Head of Loss is not recoverable.**

10. THE THIRD HEAD OF LOSS: ENVIRONMENTAL LOSS CAUSED BY THE CHATTAK 2 WELL BLOWOUT

400. The Third Head of Loss comprises a large group of losses including “immediate impacts on the local population, agriculture, pisciculture and environment of Tengratila” as well as “long-term effects on the environment and people in Tengratila”.³⁰² These losses frequently were referred to as “**environmental losses**”. The Tribunal will use this term to refer to all losses that may enter into the Respondents’ third head of loss, including losses to the health and property affected by the blowouts.
401. The Tribunal is mindful of its decision that Niko is liable only for the first blowout of the Chattak 2 well that occurred during the night of 7 January 2005 and not for the second blowout that occurred on 24 June 2005 during the drilling of the Chattak 2A relief well. The Tribunal is also aware that one of the questions that remains to be decided concerns the gas that escaped from the Reservoir after the second blowout and, according to the Respondents, is part of the loss for which Niko is responsible, despite the Tribunal’s finding about the liability for that blowout.
402. Since much of the Parties’ argument and evidence concerning the damage caused by the blowouts does not distinguish between the two blowouts, it seems inevitable that both blowouts must be considered. This does not mean that the distinction may be disregarded when determining the losses which Niko must compensate.
403. Before examining the loss claimed and the question whether it is recoverable, the Tribunal sets out briefly the context: the village of Tengratila and the events of the first blowout as it was perceived there.

10.1 Tengratila and the blowouts

404. The wells drilled by Niko in the Chattak West field, are in the area of Tengratila, a village in North-West Bangladesh. Messrs Betton, Borthwick and Leinster, who visited the village in February 2016, describe it as follows:

Tengratila is a village of 3,387 people located in the Surma Union (population approximately 25,000) of the Dowra Bazar Upazila

³⁰² BMD, paragraph 241.

(population approximately 250,000), of the Sylhet Division (population approximately 10,000,000), of Bangladesh (population 151.6 million (2013)).It is comprised of several smaller villages: Tengratila proper, Ajabpur, Girish Nagar, Koijajuri, and Shantipur.

Tengratila proper, Ajabpur and Girish Nagar, which are situated around a fenced area where Niko’s offices and wells are located (the “Niko Compound”) comprise some 200 buildings, including dwellings, school buildings, a Mosque, community buildings, shops and other small businesses. Many of these are set amongst trees, which provide shade and may also produce fruit. Many houses have associated vegetable plots and there are also large areas within the village set aside for vegetable production. The main arable farming land is given over to rice paddies and these surround the village in all directions. At the time of the visit these were in various stages of production, some flooded, some recently planted and others were dry with rice growing whilst others were apparently fallow and awaiting the next stage. Also in and around the village are a number of fish ponds which are used for the production of fish. Some ponds are used as breeding areas for the production of fingerling fry, which then are transferred to other ponds for growing on to marketable size. A total of 17 ponds were observed during our site visit.

An open area adjacent to both the school and the Niko Compound is essentially a play area for the school children who use it during breaks in the school day and after school. Cricket is played on a regular basis on this ground.³⁰³

405. The Respondents produced the following map of Bangladesh, showing the location of Tengratila and Sylhet region:³⁰⁴

³⁰³ Expert Report of Clifford Betton, Ian Borthwick and Paul Leinster, 23 March 2016 (Betton et al Expert Report), paragraphs 147 – 149.

³⁰⁴ BMD, page 168, Figure 11.

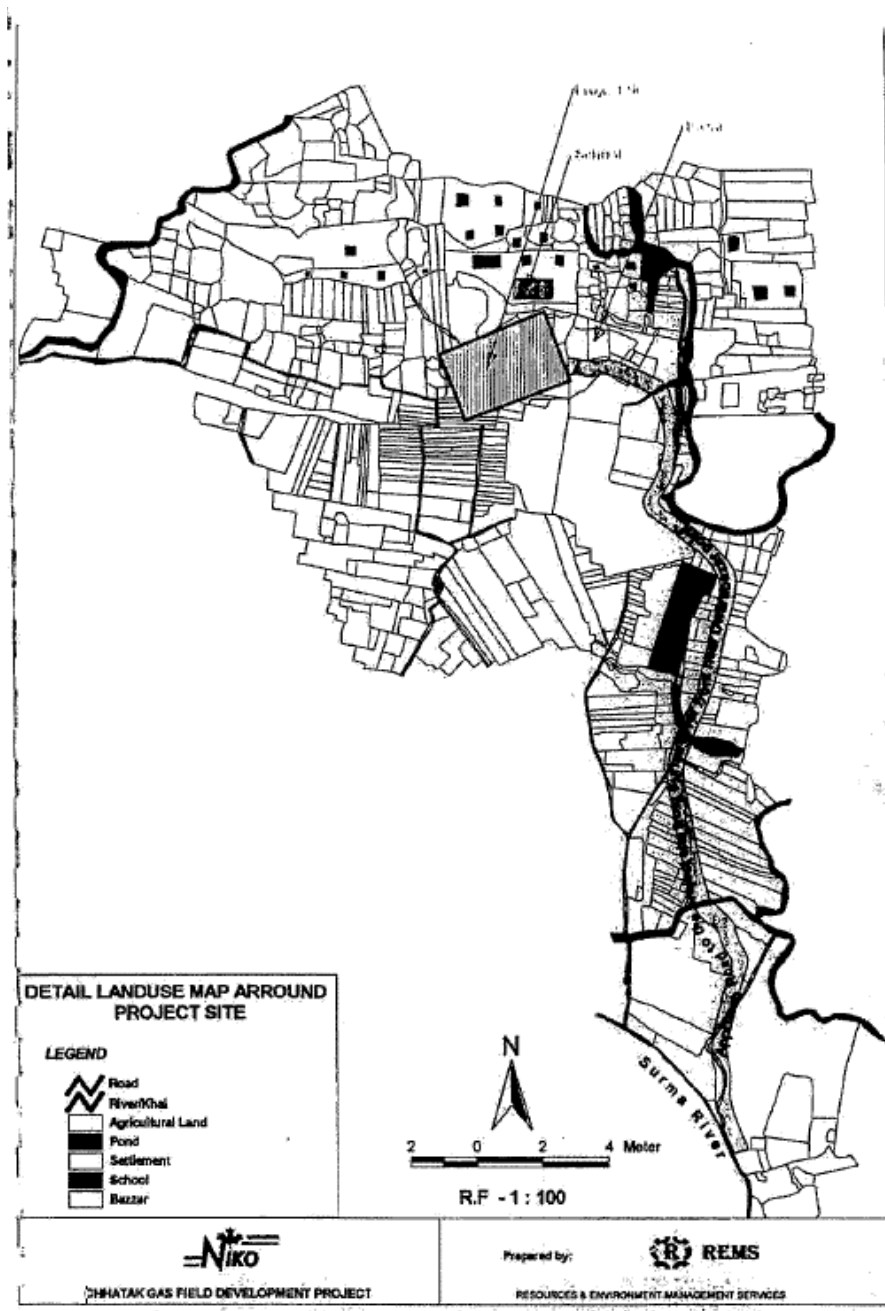


406. As to Tengratila itself, the Respondents produced the following map, showing Tengratila and the Niko compound:³⁰⁵



³⁰⁵ BMD, page 170, Figure 12.

407. The map below, taken from the Niko Environmental Impact Assessment³⁰⁶ and reproduced in Second Environmental Losses Report of 13 April 2005³⁰⁷ shows land use around the Chattak project:³⁰⁸



Map - 5

³⁰⁶ Niko Environmental Impact Assessment, June 2004, Exhibit R-72, Map 5.

³⁰⁷ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 8.

³⁰⁸ See also Niko Environmental Impact Assessment, June 2004, Exhibit C-13, Map 5.

408. The Parties produced a number of documents which record the blowouts and their immediate impact on the area and its inhabitants.
409. The Respondents produced **witness statements** of two persons testifying about their personal experience.
410. **Mr Farid Uddin Ahmed** was the headmaster of the Tengratila Secondary School between 1998 and 2015. The school is very close to the Niko compound. His witness statement contains the following passages:

When the first blowout happened, I was at my home. I heard a loud noise and went to the hill overlooking the Niko compound. My neighbors did the same. Then I saw an explosion. Sand, rocks and black smoke shot into the sky, like a rainbow, and landed on the buildings in the village. Like many others, I ran away to find my family and make sure they were safe. We took refuge at the primary school in Tilagaon, where my wife taught, about 2 kilometers away. We could feel the vibrations from the blowout even there. We were scared and we decided to stay at the home of a friend who lives in Lakshmipur, about 5 kilometers away. We spent two nights there.

Once we saw that the fire had died down, we decided to return home to Tengratila. When I returned home, the earth and the houses were still shaking and vibrating. Sand and rocks covered the village, and some sand continued to rain down from the sky. My house had lots of cracks in the wall. I received Tk 10,000 from Niko as compensation for the damage to my home, but it cost me about Tk 50,000 to repair.

[...]

The blowouts had a negative impact on the education and health of my students. After the first blowout, we did not hold classes for approximately two weeks to one month. The school building had cracks in the walls. But then we decided that we needed to open the school for the eighth and tenth grade students, who had important exams coming up. Some students came to these classes.

January is the enrolment time for our school. Due to the blowouts, there were many students who did not return to school. Overall, we lost about 20% of our student population. Some of the students were too afraid to return, and others were concerned about the risk of collapse of the damaged school building. Some of the students had

*moved elsewhere to continue their studies while others had stopped studies altogether, due to the disruption in their lives caused by the blowouts.*³⁰⁹

411. Mr Ahmed described other damage that occurred in the village including the following:

In addition to serving as a school headmaster, I also lease rice paddy fields and I have a garden where I grow jackfruit, lychee and mango. Following the explosion, I saw that my cultivated land was completely covered with a thick layer of sand. The boro rice crop had just been planted, and it was completely destroyed. The aman rice crop, of which there are two harvests per year, also suffered. The crops gradually improved over the years, finally returning to near normal around 2012. However, the areas surrounding the gas field have not come back to any normalcy.

The fruit trees in my home garden lost their leaves a few days after the first blowout. Some of them died and we had to replant some trees. The growth of the trees that survived was stunned [...]

*At the time of the blowouts, I owned two fish ponds, which are near my house [...] I rented them [...] in the first year after the blowout the people who had rented the ponds from me [...] explained [...] that they could not sell the fish caught in these ponds. During the year following the blowout, they said that all the fish slowly died in the pond. ...*³¹⁰

412. **Md. Shahjahan**, a former headmaster of the Tengratila secondary school, who subsequently held other public functions, resides in the Girish Nagar section of Tengratila, less than one kilometre northeast of Niko's compound. He explained that, because of his functions, "villagers come to [him] to discuss their problems"; therefore he is "familiar with the harms suffered by the inhabitants of Tengratila following the two blowouts in 2005 at the Niko compound". In his witness statement he wrote:

The blowouts were scary events. When the first blowout happened, I was at home and heard a very loud sound. I felt the ground shaking up and down. Many people fled from their homes. Afterwards, sand covered the village and three kilometers around. The second time there

³⁰⁹ Witness Statement of Farid Uddin Ahmed, 5 March 2016 (WS Ahmed), paragraphs 4 – 8.

³¹⁰ WS Ahmed, paragraphs 12 – 14.

was a blowout, the explosion was louder. Sand blanketed the village again. After the blowouts, we noticed that gas was coming out of the ground, producing bubbles in places where water accumulated on the ground. It was worse after the second blowout. Never before had we observed bubbles or gas seepage like this in our community. The smell of the gas disturbs our community.

The sound of the explosions damaged people's ears. People ran away from the Niko compound, and in so doing, hurt themselves by tripping and falling. More concerning, after the blowouts, community members began to complain to me about health problems that had previously been rare in our community. After the second blowout, people came to me to complain about the problems they had breathing. ...³¹¹

413. Some of the reports that will be discussed in further detail contain accounts of the events collected from the inhabitants and observations made shortly after the events.

414. The first report on the incident seems to be **Niko's "Chattak 2 Well Control Incident and Blowout - Draft Report" of 11 January 2005** which contains the following passages:

There were no injuries or fatalities. The flow was sweet dry gas with no liquids of any description. On 9 January 2005 at 09:30am, flow diminished and extinguished. Area inspection indicated small flares through fissures in and around the drill site. Gas flare continues to decrease daily. The field is being monitored with daily site visits. Full investigation is underway by all parties concerned.³¹²

415. The **First Environmental Losses Report**, dated 17 January 2005, contains the following description of the effect of the first blowout:

There are 1400 families in Tengratila village and 600 families in Ajabpur village. The total population of these two villages is about 5000. Once the fire incident took place with a deadly sound including a strong earthquake on the morning of 01-08-2005, it was announced on the mosque's loudspeaker and the villagers were asked to take shelter at a safe distance. Although it was possible to secure peoples' lives, the safety of personal assets was not certain. Because of the

³¹¹ Witness Statement of Md. Shajahan, 6 March 2016, paragraphs 6 and 7.

³¹² Chattak 2 Well Control Incident and Blowout – Draft Report, 11 January 2005, Exhibit C-21.

rapid abandonment of households, looting of daily consumable goods of the villagers including cattle, TVs, and valuable, movable property took place. Forcefully erupted sand-stone emanated, which along with extreme heat and noise, an earthquake, and the fire, made the villagers frightened. Several households and more than one hundred shops of the market located at the eastern boundary of the gas well were closed. On the day of inquiry [the Committee visited the location on 10 January 2005] the committee found only one shop opened. However, there is no necessary equipment as per demand. The supply of gas and electricity in said area was stopped immediately after the accident. To date, the villagers have not returned to their homes. A crack was found in the yard of the household of Mr. Jahir Miah, father-Late Alauddin. It seems that it might be caused by the fire incident and earthquake which took place in the morning of 01-08-2005. Household goods of the villagers including wealth and environment were widely damaged.³¹³

416. This report also describes the security measures taken by the local authorities:

The Local Administration, Police Administration, BDR Authority deployed sufficient police and BDR forces to ensure the security of the gas well area. The danger point has been marked by flying red flags, and the police administration has used loudspeakers to warn people not to enter the danger zone. It seems that it may be possible to ensure safety during daytime, but the same could not possible during night time.³¹⁴

417. This report also contains as an attachment a **letter dated 16 January 2005** to the Department of the Environment, in which **Mr Mercier**, Niko's then Vice President Bangladesh Operations, responds to an enquiry by the Department of 15 January 2005. In that letter Mr Mercier explains that he just returned from a visit to the site and reports:

The blow has reduced to a minor blow and I estimate that blow to be less than 1'000'000 cubic feet per day and it has been reported to me that this flow is decreasing daily. There are still several small fires

³¹³ Quoted from the English translation of First Environmental Losses Report attached to Second Environmental Losses Report, Exhibit Annex R-2(bis), page 5.

³¹⁴ First Environmental Report attached to Second Environmental Losses Report, Exhibit Annex R-2(bis), page 4.

around the perimeter of the main crater. Two water wells are flowing clean water.

The gas release has polluted around the well site. The pollutants are comprised mostly of mud and sand and water. They have flooded the rice field north of the location. The diesel fuel tanks on site have been emptied and the fuel is being stored at a tank near the jetty.

Clean up and removal of salvageable items has begun. Location construction will begin in the next few days for the construction of the relief well.

[...]

Regarding the affected residents nearby, Niko is currently negotiating settlement with the all affected residents.

418. The **Local Losses Committee** commenced its work in early March 2005 and produced a report of 8 June 2005 containing the following description:

After the incident of the fire in Tengratila Gas Field, the villagers were instructed through loudspeaker and local announcement mechanisms to leave the houses of the area and to take safe shelter in a nearby area. Their movable properties were damaged at the time of leaving the houses.

419. The Local Losses Report describes some of the effects noted at the time of the report:

Still now bubbles are forming in the water bodies and ponds nearest to the gas field. Water is falling forcefully from different tube-wells due to the pressure of gas. Gas is emanating from the mud of the yard of the households. Gas is emanating in fine lines from the sand level of the yards of different houses. As a result, the water level of the surface is suffering from drought, and branches and leaves of trees of the nearby area are fading and drying. The situation is still so dangerous. NIKO has started drilling of the new well at a little distance from the old well. The estimation of compensation depends very much on the

*success of drilling of the new well, and thereby stopping the gas blowout.*³¹⁵

420. As described above, immediately after the first blowout, Niko contacted **Safety Boss** Inc, a Canadian well control and safety consultant. The personnel of this firm arrived at 9 January 2005. Their report for the period from 9 – 12 January 2005 starts by the following account about the information collected:

*On 07 Jan 2005 @ 20:40 during the kick control procedures the flow diminished through the manifold and began to come to surface around the rig @ approximately 21:00. Gas and debris rapidly increased in volume and velocity. Flow around the wellbore was estimated to be up to 100m high, carrying with it tremendous amounts of debris including sand, rocks, bricks and smaller parts of drilling equipment. The rig fell to the SSE and shortly after that the flow ignited, initial flame height also estimated a 100m. Within a few hours from ignition the entire substructure and mast disappeared into the crater. Gas flow reported through fissures up to 100m away with the main part of the flow being concentrated within the crater.*³¹⁶

421. The Safety Boss personnel then present their own Initial Observations:

The well bore crater was oval shaped approximately 70m by 30m, with the long axis being from hole center to SSE, the banks around the crater were 5 to 10m above the original GL. Numerous small fires (10 to 20) were burning ail around the crater bowl with the larger fires being along a fissure extending approximately 40m SSE from well center. Maximum flame height was 15m. Outside of the crater the entire area within 100m of well center including all the equipment was covered with sand and surface dirt to a depth of .5 to 2m deep. The conductor pipe with an internal csg string was visible approximately 5m below GL, both pipes are badly abrasion eroded, no drill pipe was visible. The drilling rig mast and substructure had completely disappeared.

[...]

³¹⁵ Local Losses Report, Exhibit Annex R-3(bis), paragraphs 5 and 9.

³¹⁶ Safety Boss, Summary Report, 24 January 2005, Exhibit C-23, page 1.

Priority Issues

1 - Public safety is the primary concern. There are numerous residents in the immediate area, some as close as 60m (all distances are from well center), many within 200m, as well there have at times been several hundred spectators encroaching within the potential hazard area.

Gas flow up through the ground is unpredictable, the gas will seek the path of least resistance to surface, and as flow channels collapse or become plugged the flow goes elsewhere. The usual circumstances is for the majority of the flow to concentrate near the well center and/or to areas where there is less overburden pressure such as mud pits, sumps, water wells and other depressions,

The most serious safety concern is the potential accumulation of unignited or non-burning gas vapors drifting into areas where people are. The longest isopleth of a burnable fuel/air mixture, commonly known as a 100% LEL (lowest explosive level) is thought to be 100m from well center at flow conditions as reported at 10 AM on 10 Jan. As long as the fire(s) remains burning this risk is minimal.

The flow rate or fire size waxes and wanes over a period of a few hours however the overall flow rate over the observation period covered by this report has continued to diminish substantially. An approximate estimation is that the flow has diminished by 60 to 95%.

[...]

Summary

Although much national attention has been focused on this event it is in relative terms not a serious event. In evaluating this it is important to note the following;

1 - No injuries or loss of life occurred.

2 - The gas flow was & is dry and sweet, likely 100 % methane with no H₂S.

3 - *Environmental damage is minimal involving formation sand, displaced surface soil and near surface soil and it is contained almost entirely within the Niko owned land.*

4 - *No salt water or liquid hydrocarbons were involved.*

[...]

422. Niko engaged **Mr Randal Glaholt of Tera Consultants**, Calgary, whom Mr Adolph describes as an “environmental specialist who had been retained by Niko to oversee environmental monitoring activities.”³¹⁷ Mr Glaholt first visited the Chattak site in December 2003. After the first blowout, he returned to Bangladesh on 22 January 2005,³¹⁸ where he together with Crown Agents continued to be responsible for Niko’s environmental monitoring. His first report, dated 26 January 2005, contained the following passages:

The uncontrolled gas release self-ignited at 06:55 hrs, creating a flare approximately 100 m in height and projecting bricks and a large quantity of soil around the well site and surrounding area, including portions of the village of Tengratila. The gas flare burned aggressively for approximately 21.5 hours before self extinguishing at about 09:30 hrs on January 9, 2005. The escaping gas again self-ignited by 12:00 hrs on January 9, 2005: however, at this point the fire was significantly reduced and confined to a series of smaller burn areas peripheral to the blowout crater. Commencing January 9, 2005, NIKO’s blowout specialists and security personnel established an expanded 1 km emergency zone in which local residents have been encouraged to avoid. NIKO has maintained full time site security staff on site on a 24-hour basis since the blowout.

During the first two days of the blowout, escaping gas created a geyser of native sand/soil and some drilling mud (KCI polymer-based). Projection of material around the well bore has created a broad cone of soil approximately 2 m+ high around well centre which has filled with water/mud to an undetermined depth. Soil/sand debris has been most conspicuously spread over portions of an area approximately 200 m x 400 m adjacent to the well site, though some fine dust has been reported as far as 2 km away. Mineral debris

³¹⁷ WS Adolph I, paragraph 118.

³¹⁸ Witness Statement of Randal Glaholt, 29 May 2014 (WS Glaholt I), paragraphs 6 and 12.

blown from the well has variably blanketed adjacent ground, paddy, vegetable plots, fruit trees and native vegetation in a generally northwest direction with some accumulations exceeding 10 cm. The blowout has produced an undetermined volume of water and has pressurized near-surface aquifers resulting in positive flow from at least seven water wells. Two formerly dry paddy areas have become flooded and are also being used for containment of excess flow from the well site.

[...]

As of January 26, 2005, there have been no injuries associated with the blowout. Heat from the initial flare has killed or heat-damaged a number of trees (including mango, coconut, betel nut and bamboo) and herbaceous vegetation within approximately 200 m of the well site. Some local vegetable, rice and pineapple crops have been partially blanketed by soil thrown from the well site area. At least two fish ponds appear to have been adversely affected. Significant natural habitat for wildlife species is not present in the area and so is unaffected. As mentioned, a total of seven water wells (two on NIKO property, five in the village of Tengratila) have been documented with positive flow which previously required hand pumping. Vibration of the earth and projectiles caused by the blowout has resulted in some minor structural damage to local buildings. Fire has destroyed one residence and one of NIKO's office buildings. A powerline support has been weakened as a result of soil liquefaction associated with gas release.³¹⁹

423. The **monitoring reports of Crown Agents and Tetra Consultants** contain further information about the blowout and its effects. The following passage from the first bi-weekly reports, dated 28 February 2005, provides some additional information:

Particulate material projected from the well bore was also spread by the prevailing wind in a northwesterly direction over portions of the village of Tengratila and outlying agricultural lands. In some cases bricks and other objects projected from the well site penetrated Corrugated Galvanized Iron Sheet (CGI) roofing of village residences.

³¹⁹ Terra Environmental Consultants (Randal Glaholt): Environmental Site Inspection Report, 26 January 2005, Exhibit C-25, page 2.

Heat from the initial gas flare damaged trees and other vegetation within approximately 200m of the well site. Ground vibration during the blowout was sufficient to crack the walls and foundations of several structures in Tengratila and NIKO's [Chattak] compound. Escape of gas into the near surface sedimentary layers has raised the water table and created artesian flow at a number of tube wells in the immediate area. Monitoring of gas release from cracks in the ground in proximity to the well site has resulted in longer term evacuation of some residents.³²⁰

424. These factual descriptions by observers during or shortly after the blowouts are provided as general background to the examination of the issues considered below. They are not intended as factual findings of the Tribunal and do not prejudice the Tribunal's decision on compensable losses.

10.2 The reports on environmental losses

425. Following the first blowout, the Government set up a number of committees which, as explained above, investigated the blowouts and related matters and prepared reports (the **Committee Reports**). Several of these committees assessed the environmental losses. The Committee Reports have been referred to in the arbitration and, in the opinion of the Tribunal, may be particularly relevant for the assessment of the environmental losses. They are of interest also with respect to the methods adopted by these Governmental Committees and the scope of their assessment when they sought to include not only the immediately apparent losses but also those expected to occur in the longer term.
426. The Tribunal will consider specifically the Governmental Committees, other contemporaneous reports and the more recent expert reports presented in the arbitration. The Tribunal's choice of the reports mentioned below does not prejudice the decision on the evidence relevant for its decision.

³²⁰ Crown Agents Services Limited and Tetra Consultants, Bi-weekly Reports, 28 February 2005, C-29, page 1.

10.2.1 The Governmental Committees and their reports

427. The Government's **First Environmental Losses Report**,³²¹ dated 17 January 2005 as mentioned above, was prepared shortly after the first blowout by the "Committee for Estimation of Environmental and Forestry Losses caused by the fire created in Tengratila Gas Field in Sunamgonj". It comprised members of the Ministry of Environment and Forrest, its convener being the Director General of the Department of Environment in that Ministry.
428. The committee members visited the site, spoke with representatives of the local authorities and of the population, and consulted newspaper reports of the incident. They also considered the latest report by Niko and questioned Mr Kashem (or Qasim) Sharif, the President of Niko, about measures taken by the company.
429. This committee considered the reasons for the blowout and observed that it was "only the recurrence of the blowout which took place in the Maguchora well of Sylhet in 1997". It mentioned a report by Niko according to which "the surrounding environment has been damaged by the mud, sand and contaminated water caused by blowout".³²²
430. Apart from the effect on the local population, as quoted above, the report describes:
- (i) Effects on forests, including the following comments:

... it was found that there is no government forest within several kilometers surrounding the place of incident. However, the neighboring villages are rich with personal and communal forests. It seems that this blowout caused incredible damage in said village. Huge damage occurred in the rain tree, mango, jackfruit, kazi guava, olive, coconut, betel-nut, bamboo cluster, pineapple, and vegetable gardens. Due to the fire incident, the leaves of nearby trees were burned and have turned brown. There is a possibility that gardens located in remote places will be affected over time. There is the

³²¹ First Environmental Losses Report, Exhibit Annex R-1; the quotes are from the slightly different translation attached to the Second Environmental Losses Report, Exhibit Annex R-2(bis).

³²² First Environmental Losses Report attached to Second Environmental Losses Report, Exhibit Annex R-2(bis), pages 3 and 4.

*possibility of a negative effect on the rural economy and environment due to this gas disaster.*³²³

(ii) Effects on agricultural crops

*A 2-3 inch layer of sand has been deposited on the nearby agricultural land. Because of sand blasting during the fire incident, the sand spread out to surrounding places. It seems that the quantity of sand is more on the northern side of the well (photo-3). As a result, organic matter and micro-fauna has been damaged. At present, there is the possibility of a reduction of current agricultural crops (mainly rice) and coming agricultural crops.*³²⁴

(iii) Effects on dwellings of birds, avian migration from the affected area, and disturbance to the “rural biodiversity”.

(iv) Air pollution: the report mentions “the presence of sand mixed with air [...] felt up to several kilometers from the place of the incident” and “black smog”.

(v) Educational system: the report mentions that local educational institutions are closed and the “educational system is being interrupted”.

431. The report also states that more time was required to estimate the environmental losses and adds:

*[T]o estimate the environmental losses, we need to wait one or more harvest seasons, and then on the collection of systemic data and information and after analyzing the same, the proper amount of losses can be estimated. There is no need for the formation of a separate committee to estimate the environmental losses. This Committee can estimate the losses by co-opting competent representative from the local administration and concerned department of field level.*³²⁵

432. In conclusion, the committee made recommendations with respect to the prevention of future incidents as well as the assessment of the environmental losses:

³²³ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 5.

³²⁴ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 5.

³²⁵ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 6.

- (1) *In light of above discussion, instruction can be issued to this Committee to submit a supplementary report after 6 (six) months, since it may take a long time to estimate the environmental losses. The amount of environmental losses will be mentioned in said complementary report.*
- (2) *Measures can be taken through the competent authority of the government upon estimating the amount of overall losses by inter-ministerial committee and compensation can be realized.*³²⁶

433. Following this report of the First Environmental Loss Committee, a **Divisional Sub-Committee** was formed within the Department of the Environment on 30 January 2005 “to observe and monitor the environmental situation after the blowout, and this Sub-Committee has also submitted its first Report”.³²⁷

434. A new committee was then formed on 4 February 2005, which produced the **Second Environmental Losses Report** on 13 April 2005.³²⁸ The mandate of this new committee was “to estimate the losses relating to environmental damage due to the fire that spread in the Tengratila Gas Field”. The convener was again the Director General of the Department of the Environment. Representatives of BAPEX and Niko were among the six members of this committee, which co-opted three “specialists” to “facilitate its activities”.

435. The committee inspected the Field on 4 April 2005 in the presence of “Professor Moinuddin Bahar, representative of the Honorable Member of Parliament Mr. Kalimuddin Ahmed and [of an] Officer of Doarabazar Sub-district”. The committee members observed at this occasion

... the gradual increase of the impact zone toward the north and south since the blowout. Blowout bubbles, debris, seepages, contaminated mud-water, etc. have been spread over the surrounding 2-3 km of the main Crater. The Committee observed that the level and impact of the

³²⁶ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 6.

³²⁷ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 1; the report of the Sub-Committee has not been produced.

³²⁸ Second Environmental Losses Report, Exhibit Annex R-2(bis).

*adverse reaction has been increasing gradually on the environment and neighboring area after the blowout.*³²⁹

436. At a meeting on the following day the committee heard the District Police Superintendent, Additional Deputy Commissioners, Agricultural Officers, Fishery Officers, and Forestry Officers, “including representatives of all the concerned organizations”. In its subsequent deliberations the committee also considered “... information collected by the committee at field level over time, the information submitted by NIKO Resources (Bangladesh) Ltd., the report of losses of forest assets in the light of the survey conducted by Forestry Division, and opinions given by the Deputy Commissioner of Sunamganj, the Police Superintendent, the Fishery Officer, the Agricultural Officer”.

437. In its report, the committee considers and quantifies the losses in the following eight categories:³³⁰

(1) Losses caused by atmospheric pollution

(2) Damage to vegetation, i.e. forest resources

(3) Losses of agriculture and fisheries

(4) Damage to water resources

(5) Losses of soil resources

(6) Losses of ecosystem

(7) Health effects

(8) Impact on education and livelihood

438. In each of these categories the report identifies amounts for (i) immediate losses, such as the pollution caused by the release of CO₂ or losses to the “production of trees” and “production of crops” and the “losses to education and social lifestyle” of 200 students; (ii) for actions of remediation, such as estimated costs to “supply and install two deep tube wells for 600 families”, the “[r]ehabilitation of [400] traumatised people”; and (iii) long term damage and remediation, such as “20 years for 4 hectares of land” as “costs due to

³²⁹ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 1.

³³⁰ Second Environmental Losses Report, Exhibit Annex R-2(bis), page 2.

loss of sequestration facility for CO₂” and the “[c]ost over 20 years to restore the ecosystem”.³³¹

439. The report then presents the assessment in the form of the table below:

Accounts of the losses mentioned in the above paragraphs 1 to 8 have been given in the table below:

Para. No.	Type of Losses	Unit Price	Amount of losses	Remarks
1.	<i>Losses due to Air Pollution:</i>			
	(a) Pollution caused by release of CO ₂ (created due to burning of gas)	BDT 960	38185714.20	739776.79 tons of CO ₂ have been released due to burning of 1.5 billion cubic methane gas
	(b) Release of CO ₂ due to burning of trees	Do	314880.00	128 tons for 4 hectares, 32 tons in every hectare

³³¹ Second Environmental Losses Report, Exhibit Annex R-2(bis), table at page 5.

Para. No.	Type of Losses	Unit Price	Amount of losses	Remarks
2.	<i>Losses of trees and forest resources</i>			
	(a) Losses related to production of trees and forest resources		14653224.40	As per estimation of Forestry Division
	(b) Re-plantation cost		8176900.00	Do
	(c) Cost due to loss of sequestration facility for CO ₂	BDT 6400/ hectare	512000.00	20 years for 4 hectares of land
	(d) Cost due to loss of sequestration facility of CO ₂ in agriculture	Same as above	7360.00	Cost has been estimated against loss of 5% of the forest over 23 hectares of land.
3.	<i>Losses of agriculture and fisheries</i>	-	-	The Committee formed by the Deputy Commissioner concerned will estimate the losses, which are to be included in this account.
4.	<i>Losses of water resources</i>			
	(a) Sources of drinkable water	-	20000000.00	Costs estimated to supply and install two deep tube wells for 600 families.
	(b) Aquifer	-	40000000.00	Purification cost estimated.
	(c) Fishery Pond	-	5000000.00	Purification cost estimated.
	(d) Damage to agricultural production	-	100000.00	Production cost estimated.
5.	<i>Losses of soil resources</i>			
	(a) Deadly affected area	-	5000000.00	Losses of production of crops for 3 years.
	(b) Semi-affected area	-	5000000.00	Losses of production of crops for 2 years.
	(c) Less affected area	-	2500000.00	Losses of production of crops for 1 year.
6.	<i>Losses of environmental system</i>			
	(a) Rehabilitation cost	-	10000000.00	Cost over 20 years to restore the ecosystem.
	(b) Management cost	-	5000000.00	
7.	<i>Losses related to health</i>			
	Rehabilitation of traumatized people	BDT 400,000 per person	160000000.00	For 400 people

Para. No.	Type of Losses	Unit Price	Amount of losses	Remarks
8.	Losses to education and social lifestyle	BDT 200,000 per	40000000.00	200 students
Total amount of losses			BDT 354450078.60 only	

440. The report records that representatives of Niko attended the final meeting of the committee on 12 and 13 April 2005 and adds:

The NIKO Representative agreed with all the measures considered for estimation of the losses. However, the emanation of the supposed quantity of gas and the amount of losses in different sectors are not acceptable to them in the current stage. He proposed that the Committee reach a collective decision through discussion and more time. Since it was mandatory to submit the report within a shorter timeframe, the NIKO Representative did not sign the Report prepared by the Committee relating to the environmental losses, but he (NIKO) submitted the written statement (copy enclosed).³³²

441. In the version of the Report produced by the Respondents the only attached written statement by Niko is the letter of 16 January 2005, quoted above in Section 10.1, in which Mr Mercier, Niko's Vice President Bangladesh Operations explains that he had just returned from a visit to the site and reports on his observations. The Claimant produced the letter which **Mr Adolph**, Niko's Country Manager, addressed to the convener of this committee on **13 April 2005** with the reference "**Niko's response to DoE Estimate of Environmental Costs**". The letter contains the following passages:

... at this time Niko is unable to agree with the cost estimate or respond in detail on such short notice with so little information on how the assessment was derived.

In principle, we agree with the various sectors which have been considered in the impact evaluation and many of the technical concepts being applied. However, at the present time, we cannot accept the valuations of loss related to such things as estimations of gas volume released, water resource damage, soils resources, and others.

Given that the uncontrolled release is still occurring and relief well drilling has not been completed, we believe in many cases it is premature to draw conclusions as to the actual environmental effects or costs. Niko is engaged in an active and intensive environmental monitoring program to track environmental change and community

³³² Second Environmental Losses Report, Exhibit Annex R-2(bis), last page.

impacts associated with the accident. Once the blowout is controlled and stopped BAPPEX-NIKO and the Government will be in a much better position to assess environmental damage and any costs arising. Conversely, we do feel costs for many direct community damages (eg. damaged houses, crop loss in current crop year, burned trees, lost business, and health) could be dealt with and awarded to affected community members soon after the Deputy Commissioners Sub-Committee has completed its work.

As you are well aware, Niko has been paying 6,000 Taka/month to all relocated families since the blowout. Niko, as a responsible corporate citizen in Bangladesh, is committed to compensating those directly, immediately and adversely affected by the accident; paying for temporary relocations of families; repairing reasonable damages; and or providing replacement services. At the same time it is important to Niko and our industry that any assignment or award of costs be based on coherent and fair application of existing government policy.

Regrettably, Niko cannot at this time agree to endorse the Committee's report as it now exists. However, we hereby request that this letter be included with the report so as to indicate our willingness to continue an open, transparent, and informed dialogue with DOE and all other government bodies charged with the responsibility of evaluating the effects of the accident at Chattak 2.³³³

442. The “direct community damage” to which Mr Adolph referred in this letter was the subject of examination by another committee. Further to a decision of the Energy and Mineral Resources Division of 2 March 2005, a committee for the estimation of local losses (the **Local Losses Committee**) was formed. Before the second blowout the committee issued on **8 June 2005** the **Local Losses Report**. This committee was chaired by the Deputy Commissioner Sunamganj. “[A]n effort was taken to inspect in the field and to estimate the losses” with the assistance of several concerned officers of the Doarabazar Sub-district, the UP Chairman concerned and the Sub-district Executive Officer.

³³³ Letter from Niko to the Department of Environment, 13 April 2005, Exhibit C-32.

443. Niko participated in the activities of this committee and its position and actions are recorded in the Report. In his witness statement, Mr Adolph states:

In contrast to the experiences with the other two Environmental Committees, Niko was frequently updated by the Local Loss Committee. From time to time, Niko had the opportunity to provide its perspective on the Local Loss Committee's work and findings, through Niko's nominated representative, Mr Syed Moteshamul Islam.³³⁴

444. The report describes how the information was gathered with the assistance of the local authorities and mentions the tables listing in great detail the names of the persons and businesses affected and the loss suffered by each of them:

The authorized officers went to the affected houses in the field and prepared the report of losses. 165 families, 118 businessmen, and 4 firms were enlisted as affected in the report. The amount of losses of every affected individual (family) has been estimated separately. As per the list prepared, the amount of total losses in terms of homes, agriculture, fishery including affected firms, and other sectors is BDT 11,327,000/- (Appendix A, B, and C).³³⁵

445. The committee grouped the losses it estimated in seven categories:

(a) Damage to houses in the affected area;

(b) Affected fruit garden and trees;

(c) Crops of damaged land and vegetable fields;

(d) Affected fishery;

(e) Damage goods of shops and businesspeople in Tengratila Bazar;

(f) Damage to primary schools, the mosque, madrasah, etc. situated in the area concerned.

³³⁴ WS Adolph I, paragraph 152.

³³⁵ Local Losses Report, Exhibit Annex R-3(bis), page 1.

(g) Damage to the mosque, primary schools, madrasah etc., situated in the area concerned.³³⁶

446. The report describes the manner in which compensation was assessed, collected from Niko and distributed to the local population:

To reduce the immediate losses and problems of the people, NIKO Authority assured that the people surrounding the gas field will be provided with financial help. On 01/17/05, The Deputy Commissioner, with assistance of the Upazila Nirbahi Officer, other Upazila Officers, and the UP Chairman concerned and in presence of the honorable Member of Parliament, distributed a total of BDT 3,080,000/- amongst the 616 families at the rate of BDT 5,000/- for each family which was paid by NIKO.

The NIKO authority advised 57 seriously affected families, who were nearby the risky area and also affected by the fire in Tengratila, to stay in a remote area leaving their households. These 57 families were provided monthly allowances for 2 (two) months at the rate of BDT 6,000/- from February 2005. Since the problems of these families have already increased, they are being paid BDT 10,000/- per family since last April 2005. NIKO hopes, once the risk of danger is removed after the drilling of a new well, that these families will return to their households. Otherwise, the matter related to compensation and rehabilitation of said families will have to be determined separately.

In response to the claims of the local people about the damage to educational institutions, the mosque, madrasah, etc. within some villages nearer to Tengratila gas field including the village Tengratila, the NIKO Authority, under the mediation of local members of parliament, committed to pay BDT 30,000/- (thirty thousand) to each of the three educational institutions of the area concerned and BDT 10,000/- to each of 57 schools and social institutions. The NIKO representative assures that this money will be paid very soon. Due to said reason, these enterprises were not included in the list of compensation while it was prepared.³³⁷

447. In a similar approach adopted with respect to compensation for the losses concerning the Tengratila High School, the Tengratila Primary School and

³³⁶ Local Losses Report, Exhibit Annex R-3(bis).

³³⁷ Local Losses Report, Exhibit Annex R-3(bis), paragraphs 5, 6 and 7.

the mosque, estimates were made at BDT 305'000, BDT 50'000 and BDT 200'000, respectively.

448. The Report does not include an estimation of long-term losses and provides the following explanation:

*The measures related to losses for the long-term effect on the land and environment of the area concerned caused by the fire is not covered under this committee. The permanent adverse effect on the agricultural land, gardens, fishery, and trees of the affected area observed by the committee would cause a larger type of danger to the locality. In that case, it would be required to estimate losses separately.*³³⁸

449. Following the **second blowout** the assessment of the Local Losses Committee was completed and the related losses due to the second blowout were assessed. The Deputy Commissioner Sunamgonj communicated the assessment to Niko by a **letter of 31 August 2005**, containing the following passages:

Due to the exploration [sic] of 2nd time in Tengratila Gas field area as for the compensation of 32 victimized families Total Tk.3,44,000/- was fixed as losses. Regarding payment of the amount as for compensation, a decision is made also in the meeting of dated 23/8/05.

*In the above mentioned condition, the losses of the three families excluded from the list of victims of the conflagration of dated 7/1/05 and as for the compensation of victims of conflagration of 2nd time dated 24/06/05 32 families respectively Tk. 7,37,520/- and Tk. 3,44,000/- Total Tk. 10,81,520/- (Ten lac eighty one thousand five hundred twenty) as for the compensation of the victims of Tengratila Gas field conflagration, the Niko Resource Ltd. may be issued order.*³³⁹

450. Mr Adolph explained that this request was fully met by payment from Niko, as had been the losses quantified in the Local Losses Report. He also

³³⁸ Local Losses Report, Exhibit Annex R-3(bis), paragraph 4.

³³⁹ Letter from the Deputy Commissioner, Sunamgonj to Niko, 31 August 2005, Exhibit C-50.

mentioned a subsequent request in a **letter of 4 January 2006**,³⁴⁰ containing the following passages:

On 26/06/2005, a total of 625 family was variously affected including more new 09 (nine) families due to 2nd time fire explosion at the Gas field. These affected people are continuously demanding for compensation to the Government.

Due to 2nd time fire explosion a house was burnt to dust due to gas bubbling at the house premises and the amount of loss was taka 1,33,000/- (One Lac and Thirty Three Thousand Only).

A minimum total amount of Taka 31,25,000/- (Thirty one lacs and Twenty Five Thousand Only) may please be paid among 625 affected families @ Taka 5,000/- (Five Thousand) per family as forthcoming Holy Eid-Ul-Azha and taka 1,33,000 (One Lac and Thirty Three Thousand Only) can be paid to the house owner of one burned house.³⁴¹

451. According to Mr Adolph this amount also was paid by Niko. He states that the **total amount paid for local losses was BDT 19'451'520 corresponding to USD 300'262**.³⁴²
452. Immediately **after the second blowout**, a team of four members from the Ministry of Environment and Forests inspected **on 25 and 26 June 2005** the place of the incident and prepared the **Report of the Inspection Team** formed for estimating the environmental losses.
453. The undated report of that team is attached to the Third Environmental Losses Report. It records the statement of the Deputy Commissioner Sunamgonj that the “losses caused by the blowout of the relief well do not spread widely like the blowout explosion that happened in well no. 2 [...]”. It also records observations that “the new fire is scorching the trees [a]round the relief well”, “water gushing out due to upward gas pressure” and that the “residents complained that this water contained arsenic”. The report refers to the earlier valuation of environmental damage and states that “the extent of environmental damage due to the current relief well

³⁴⁰ WS Adolph I, paragraphs 165 and 166.

³⁴¹ Letter from the Deputy Commissioner, Sunamgonj, to Niko, 4 January 2006, Exhibit C-63.

³⁴² WS Adolph I, paragraph 167; *see also* the Claimant’s description in Niko’s Reply, paragraphs 154 *et seq.* and 186 *et seq.*

blowout is hard to assess and finalize instantaneously”. The report closes by a number of recommendations especially with respect to safety measures and monitoring by Niko.³⁴³

454. After this inspection a new committee was formed by the Ministry of Environment and Forests on 30 June 2005 (the **Third Environmental Losses Committee**). This committee produced its report dated **15 September 2005 (Third Environmental Losses Report)**.³⁴⁴ The report of this committee is of particular importance, as the amounts assessed by it are the amounts claimed by the Government and Petrobangla in the Money Suit. The Respondents described the activity of this committee and summarised its assessment in the BMD.³⁴⁵ The Tribunal therefore considers its findings with particular attention.
455. This committee was composed of seven members from the Ministry of Finance, the Department of Environment, BAPEX and a Divisional Forrest Director and its convener, the Additional Secretary and Chairman of the Bangladesh Forrest Industry Development Corporation. Niko was not represented on this committee. As its members did “not have sufficient technical knowledge and scientific concept about all the matters to consider the sectors of environmental losses properly”, the committee co-opted “one soil specialist, one underground water specialist and one environmental specialist”. It also co-opted the Additional Deputy Administrator (Revenue) in order “to maintain the coordination with District Administration”.
456. The defined mandate of this new committee was “to estimate the long-term potential losses including earlier environmental losses due to the second fire happening in [Chattak] Gas Field (Tengratila) of Doarabazar Sub-District of Sunamganj District”. In fact, however, the scope of its activity and assessment was broader: it reviewed the assessment of the Second Environmental Loss Committee and concluded that its “materials or points of environmental losses [...] are facts and are accurate”.³⁴⁶ It considered the “environmental and ecosystemic losses that have occurred due to the 2 consecutive explosions”,³⁴⁷ and included losses which Niko had paid

³⁴³ Appendix A to the Third Environmental Losses Report, Exhibit Annex R-5(bis).

³⁴⁴ Third Environmental Losses Report, Exhibit Annex R-5(bis).

³⁴⁵ BMD, paragraph 329.

³⁴⁶ Third Environmental Losses Report, Exhibit Annex R-5(bis), sections 1, 2.1.

³⁴⁷ Third Environmental Losses Report, Exhibit Annex R-5(bis), section 3 at page 5.

already to the District Administration in the assessed amount, which had “distributed it among those concerned”.³⁴⁸

457. The Third Environmental Losses Report summarises findings of the Inspection Team and concludes that it was instantly apparent to the members of that team “that the harm due to air pollution and amount of losses of trees, soils, and water resources has been increased”.³⁴⁹ The report described the committee’s activities and the delegation of the loss estimation to different departments. The committee also examined whether

*... NIKO had taken the environmental clearance certificate systematically or not, and which conditions were in the clearance certificate issued by the Department of Environment and so on. Moreover, the report on all other accidents, namely Magurchora, Haripur, etc., were also reviewed.*³⁵⁰

458. In the report the losses “that have occurred due to 2 consecutive explosions” are grouped in 12 categories as follows:

- (i) Losses of Gas Resources: as they are estimated by another committee, these losses were not included in the report.
- (ii) Loss due to atmospheric pollution: this is the highest loss amount, corresponding to some USD 4.2 million³⁵¹ and about one third of the total loss. The committee estimated the total amount of CO₂ emissions and applied USD 15 as the average Shadow Price for the emission. The Report concludes:

As a signatory of the United Nations Framework Convention on Climate Change Agreement, Bangladesh is internationally liable to mitigate the greenhouse gases. Having this background, the Committee has estimated the amount in US Dollars and Taka and they have done sequestration because of seepage of 280,828 tons of CO₂ into the air. In this sector, the Committee estimated BDT

³⁴⁸ Third Environmental Losses Report, Exhibit Annex R-5(bis), section 3.6 Agricultural Sector.

³⁴⁹ Third Environmental Losses Report, Exhibit Annex R-5(bis), page 4.

³⁵⁰ Third Environmental Losses Report, Exhibit Annex R-5(bis), page 4.

³⁵¹ The amount is indicated in USD in the report since the calculation is based on prices in that currency and converted at BDT 66 to 1 USD; see Third Environmental Losses Report, Exhibit Annex R-5(bis), page 6 and footnote 1.

278,019,864.00 as losses. Plantation work can be taken to offset emitted CO₂ using this money to be collected as compensation.³⁵²

- (iii) Displacement of population: the report assumes that 25 families had been displaced and their houses had to be repaired. The report concludes:

In this sector, the losses have been estimated; if it is possible to install the relief well, then this amount will be BDT 7,840,000, and if it is not possible to install the relief well, the cost will be BDT 49,000,000.00. This money realized as compensation can be distributed among the affected people through District Administration.

- (iv) Losses in business: the loss is quantified by the costs of construction for tin-shed or half-concrete houses, assuming that the relief well is successful; otherwise, the businesses would have to be reconstructed in another location. The section concludes as follows:

Amount of losses has been estimated in this sector; if the relief cost [recte: well] gets installed, then the cost is BDT 9,100,000, and if it is not possible to install the relief well, then the cost is BDT 45,500,000. This money realized as compensation can be distributed among the affected people through District Administration.

- (v) Losses of trees, forest resources and vegetation: The report relies on an estimate of the Sylhet Forest Division³⁵³ and states that it considered that “villagers stated that in their opinion it would require 20 to 30 years to grow a plant from its planted state to reach he current size”; and it considered CO₂ sequestration facilities, accepting that “one hectare of land of tropical evergreen forest can sequestrate an amount of carbon of which is USD 100 per year”. The section concludes:

In this sector, the amount of losses has been estimated at BDT 33,898,311.00. Out of this, BDT 33,073,311.00 can be distributed among the villagers through District Administration against losses due to impact on trees, forestry resources, and vegetation. Other than that,

³⁵² Third Environmental Losses Report, Exhibit Annex R-5(bis), section 3.2.

³⁵³ Third Environmental Losses Report, Exhibit Annex R-5(bis), section 3.5 refers to an Appendix B which is not included.

the remaining BDT 825,000 received for compensation of CO₂ sequestration can be spent on forestation.

- (vi) Agricultural Sector: The report states that “initially dust and smog was spread out to around 10 to 20 kilometers”. Considering the effect on agricultural production the report states: “The detailed losses relating to the losses and damage of production and of the agricultural land have been estimated by the Committee formed by the local Deputy Commissioner”. The report concludes:

In accordance with the report of the District Administration, a loss of BDT 4,319,316.00 has been estimated in this sector.³⁵⁴ It is known that the District Administration has already realized this amount from NIKO and distributed it among those concerned.

- (vii) Loss in fishery sector: The committee of the Deputy Commissioner had estimated after the first blowout the losses related to fishery production.³⁵⁵ The Third Environmental Losses Committee explains that it found it not possible to estimate the increase and decided to quantify the loss by reference to the cost of restoring “the environment fit for fish husbandry”. It calculates the costs of “purification of water, re-digging and increasing fertility” with respect to 24 small and large ponds. The report concludes:

A loss of BDT 7,557,477.00 has been estimated in the sector. As per report of the District Administration, BDT 2,049,957.00 out of that amount has been realized as compensation in this sector and distributed among those concerned. If the other outstanding BDT 4,800,000.00 and BDT 707,520.00 is realized, it can be distributed among those concerned through District Administration.

- (viii) Losses in water resources: this is the third largest item of the loss calculation, amounting to over USD 1 million. The committee observes that

... due to the consecutive accidents, surface and underground drinking water has been seriously affected. In the Tengratila region, the only

³⁵⁴ A table attached to the report lists 112 families, almost all from Tengratila, showing their loss with a total of this amount.

³⁵⁵ The report refers to an Appendix C with the estimate; Exhibit Annex R-5(b) does not contain such an appendix. The table mentioned in the previous footnote does however also show the losses which some of these families suffered in the fishery sector.

source of pure drinking water is underground water. People of this locality collect the water through a tube-well. At present, water from the tube-well is completely undrinkable. It is also not possible to use this gas-mixed tube-well water for the purpose of cooking and bathing.

[...]

Arsenic was found in 3 water sources out of 10 existing water sources of the said area. After the gas well accident, the water of all the water sources has been tested in a laboratory, and it was found that the quantity of arsenic has increased in the water of all the tube-wells. As a result, villagers are not using this water in any work.

The committee proposes to drill a deep tube-well in a distant area, away from the site and deliver the water to the village by a pipeline:

Since gas emissions are still going on in different places in the two villages near the place of incident, it is not safe to drill a well therein to supply water. In the said estimation, it is proposed to set up a deep tube-well in a place 5 km away from the place of incident, and to bring the water through a pipeline and then to distribute it among the affected villages (Tengratila and Ajobpur). A brief estimation of the reconstruction of the water supply system and rehabilitation of the affected water layer is given below in the following two tables.

An additional remedial action consists in rehabilitation of the aquifer:

... it is proposed to make the water enter underground by means of recharging, so that the natural balance underground can be reset.

The various cost items of these two remedial actions are set out in two tables. The report then concludes:

A loss of BDT 69,700,000 has been estimated in the sector. The committee has recommended arranging the supply of pure water urgently in the affected area through the Department of Public Health Engineering at a cost of BDT 20,200,000 out of the said money. The other BDT 49,500,000 is realizable against losses of damaging the aquifer.

- (ix) Loss of soil resources: The report identifies the most affected areas and describes the effect:

The hill, vale, and lower area adjacent to the well have been affected by gas and sand blasting due to fire in the gas well. Adjacent Tengratila Bazar, households, fruit, and vegetation on the hill are affected by fire. Underground sand, mud, including gas, has spread out surrounding 2-3 km of the main crater.

The report identifies four categories of land according to the impact of the blowouts and estimates the time for their rehabilitation: for the “deadly affected area” ten years are required, for the “very affected area” it is three years, for the “semi affected area” two years and for the “less affected area” one year. Two tables annexed to the Report show the required fertiliser for restoring soil fertility and the results of a chemical analysis of soil samples.³⁵⁶

The report concludes:

BDT 17,043,105 has been calculated as losses in this sector. This amount of money can be spent through Soil Resource Development Institute and District Administration to develop the affected land of the affected area.

(x) Loss of Ecosystem: The report describes the effect of the blowouts in the following terms:

Trees, water body, agricultural land, and hillock existing in the rural neighborhood system around 1 km of the main crater have seriously been affected due to the explosion blowout in the Tengratila Gas Field. Habitats of birds, different species of rural animals, amphibians, soil worms and soil-based animals and plants in the ecosystem have been damaged and as an instant reaction, several species of the fauna in the area have locally eliminated. It is assumed by the committee that topsoil of around 1 km has been completely damaged.

The committee “has prescribed the long-term restoration and rehabilitation procedure” and estimated its costs. The report states that the committee was aware of the overlap of this programme with remedial action in loss items (v), (vi) (vii) and (viii) and that it avoided double counting. The report concludes:

³⁵⁶ Third Environmental Losses Report, Exhibit Annex R-5(bis), Appendix tables Gha 1 and 2.

A loss of BDT 20,000,000.00 has been calculated in this sector. A proper program can be undertaken to restore the ecosystem in the affected area through the Department of Environment and Department of Forest, using the money realized against compensation.

- (xi) Health related losses: the report describes the effect of the first blowout on the local population:

Villagers living within 2-3 km were frightened as an instant reaction to the first explosion happening in Tengratila Gas Field. Such type of panic has been the cause of irreparable damage to their mental and physical health. While the panic-stricken people were running to escape, different body parts such as the hands or legs of many people got broken and in case of women, incidents like miscarriage or early delivery took place, as mentioned in the report of the committee formed after the first blowout. The current committee finds in the field level that no firm has recorded detailed statements of these factors. However, upon discussion with local people, it becomes clear that almost everyone from the affected villages has been sick mentally and physically ever since, long due to continued deadly sound pollution. Besides, a lot of dust and poisonous gas spread out due to the two consecutive blowouts and have created instant health problems for the people living within 5 km of the surrounding villages [...]

The committee adds: “The panic has been raised due to the second blowout, and the health risk to almost all the nearer villages has increased”. The proposed solution consists in a payment to all villagers, calculated as follows:

... the committee agreed to pay compensation equivalent to two years’ income for all family members of two villages (Tengratila & Ajobpur) of the said area. It is mentioned in the report of the District Administration that the number of families in the two affected villages is 197. The national average family size of Bangladesh is 5.5 members (Reference: Census, 2001). At present, per capita monthly income is approx. BDT 2500. Accordingly, total BDT $(1084 \times 2500 \times 24)$ = BDT 65,040,000 is fixed as compensation. Although this amount of compensation is very little compared to the international compensation rate, the committee, by considering the socio-economical condition of Bangladesh, has made this decision (Bangladesh Economic Census 2004).

The committee also recommends to set up a hospital (“including a mental health care service-providing department”) which Niko would operate for five years. The estimated costs were BDT 50 million for the set-up and BDT 25 million for the five-year operation. The amount for this proposal is, however, not included in the Committee’s valuation of the health-related losses. The report concludes the assessment of this item of losses:

A direct loss of BDT 65,040,000 has been estimated in this sector. Considering the spatial and temporal duration, if the indirect losses are estimated, this amount will increase. The committee proposed to distribute the money to be realized among the 1084 members of 197 families through District Administration. The money required for the setup of a hospital and its operation is in addition of this recommended amount.

- (xii) Loss of education and social livelihood: The report describes the effect of the blowouts on the educational system:

Several hundreds of students of Tengratila High School and Primary School were deprived of normal education for half a year in the beginning of the session after the first fire in Tengratila Gas Field. In this situation, all the students have to lose one year before attaining their expected career. On the other hand, many students would drop off for a lifetime. Considering the uncertain situation of student life, the committee has included the rehabilitation cost in the estimation, required for those who drop out of education at the national average of 2 per family.

The committee proposes financial compensation of BDT 400’000 for each of an estimated number of 394 students; the number is calculated by reference to the 197 families in the two affected villages, using the average number 5.5 members per family, with an average of two students. In addition to the amount so calculated the Committee is of the opinion that Niko should set up a primary school and a high school in a safe place and operate these schools for five years, at the estimated costs of BDT 10 million for setting up and BDT 5 million for the operation.

Moreover, the Committee decided to set up a sports field, open space (park), and club to provide entertainment facilities in the locality to recover the loss of social livelihood of the local people, and also decided to include the same as a part of the compensation.

The costs for the sports field and its operation, BDT 5 million and BDT 2.5 million, respectively, as well as the schools and their operation are not included in the overall assessment of the losses. The report concludes on this item of loss:

BDT 157,600,000.00 has been estimated as direct compensation in this regard, which can be distributed among the affected people through District Administration. Money needed for the development of the primary and high schools, setting up of the sports field, park, and open space, including overall environmental development, will be in addition to this amount.

459. The total environmental losses at which the committee arrives, distinguished between the assumptions that the relief well succeeded or failed. In the former case the total was BDT 768'023'973 (corresponding to some USD 12 million),³⁵⁷ in the latter BDT 845'583'973 (corresponding to some USD 13 million). The Tribunal notes that in the Money Suit, the Government and Petrobangla claimed the latter amount.
460. The report closes by setting out in a table the final amount in each of the eleven categories in which it assessed the environmental losses. This table is reproduced below:

Total amount of environmental losses

S.I No..	Type of losses	Unit Price	Amount of loss (BDT)	Remark
1.	<i>Loss due to air pollution</i>			
	(a) CO ₂ emission-related pollution (due to burning of gas)	BDT 990/per ton	278,019,864.00	280,828 tons of CO ₂ emitted by burning 2.98 billion cft methane
	(b) CO ₂ emitted by burning of trees	<i>Do</i>	405,900.00	82 tons per hectare, 410 tons in 5 hectares, and 15 USD per ton
2.	<i>Loss due to displacement</i>			
	(a) Repairing of houses	80,000 per house	7,840,000.00	Repair cost is applicable for tin-shed and half-concrete tin-shed

³⁵⁷ Calculated by Niko at BDT 64.07 per USD, the average yearly exchange rate for 2005 listed by OANDA (See C-CD.2, footnote 239).

S.I No.	Type of losses	Unit Price	Amount of loss (BDT)	Remark
	(b) Construction of house with land	500,000 per house	49,000,000.00	Construction cost is applicable for tin shed or semi-concrete tin-shed (with land)
3.	Business losses			
	a) Shop repairs	100,000 per shop	9,100,000.00	For business costs and capital
	b) Construction of new shop in flexible place	500,000 per shop	45,500,000.00	Construction cost of shops in suitable place and business capital
4.	Loss of vegetation			
	a) Loss of vegetation	-	33,073,311.00	As per estimation of Forestry Division
	b) Cost for loss of CO ₂ sequestration facility	6600/hectare	825,000.00	for 25 years in 5 hectares of land
5.	Loss in agriculture sector			
	a) Losses in agriculture sector	-	4,319,316.00	Amount of losses has been estimated by the committee of the Deputy Commissioner concerned
6.	Loss in fishery sector			
	a) Losses in fishery sector	-	2,757,477.00	Do
	b) Natural environment restoration cost in pond	200,000 per pond	4,800,000.00	Re-digging and ecosystem development cost to restore each of the 24 ponds
7.	Loss of water resources			
	a) Reconstruction of water supply system	-	20,200,000.00	To drill a tube-well at a distance of 5 km, and to supply water in two affected villages using pipeline
	b) Restoration of affected aquifer	-	49,500,000.00	Purification cost estimated
8.	Loss of soil resources			
	a) Deadly affected area	-	2,000,000.00	Material cost estimated to restore the fertility of the land in affected area. Losses relating to 10 years of food safety, cultivation risk, agricultural and environmental damage would also be estimated.

S.I No.	Type of losses	Unit Price	Amount of loss (BDT)	Remark
	b) Very affected area	-	7,000,000.00	Losses in crop production of 3 years
	c) Semi-affected area	-	50,000,000.00	Losses in crop production of 2 years
	d) Less affected area	-	3,043,105.00	Losses in crop production of 1 year
9.	Loss in ecosystem			
	Cost in long-term ecosystem management	-	20,000,000.00	20-year ecosystem reconstruction program
10.	Damage to health			
	a) Rehabilitation for traumatized people	2 years @ BDT 2500/per year/per person	65,040,000.00	For 1084 affected people (197 families, per family consists of 5.5 members)
	b) Hospital setup cost	-	50,000,000.00	Onetime allotment. Mainly for the area of Tengratila and Ajobpur & surrounding
	c) Operation cost	per year 5,000,000	25,000,000.00	Operation cost for minimum 5 (five) years

11.	Losses of education and social livelihood			
	a) Losses of education and social livelihood	BDT 400,000.00 per person	157,600,000.00	two persons from every family, that is total 394 students of 197 families, one-off
	b) Development/setup of Primary and High School	-	10,000,000.00	Having modern facilities
	c) Operation cost	BDT 1,000,000 per year	50,00,000.00	Operation cost of minimum 5 years
	d) setup of sports field, open field and club, and promotion of environment	-	5,000,000.00	For Tengratila, Ajobpur, and surroundings
	e) Operation cost	BDT 500,000 per year	2,500,000.00	Operation cost for minimum 5 years
Total losses (if the relief well is successful)			768,023,973.00 (seven hundred sixty-eight million, twenty-three thousand, nine hundred seventy-three)	
Total losses (if the relief well fails)			845,583,973.00 (eight hundred forty-five million, five hundred eighty-three thousand, nine hundred seventy-three)	

10.2.2 Other contemporaneous reports

461. Prior to starting work in the Chattak field, Niko prepared in the name of the BAPEX/Niko Joint Venture an **Environmental Impact Assessment**

(EIA), dated June 2004,³⁵⁸ which was approved by the Department of Environment.³⁵⁹ The EIA contains a chapter providing Existing Baseline Environmental Data, including information about Ambient Air Quality, Soil Characteristics and Agricultural Land Types, Ecosystems, Water Resources Use. The Respondents recognise the importance of an EIA baseline data for determining the extent of the environmental damage. They are, however, of the view that Niko failed to study and determine baseline data that should have been part of its EIA.³⁶⁰ Niko's EIA also contained a chapter entitled "Environmental Management and Mitigation Plan" containing a section on Disaster Management and Emergency Response.

462. As mentioned above, the first report after the first blowout seems to have been **Niko's "Chattak 2 Well Control Incident and Blowout - Draft Report" of 11 January 2005**³⁶¹ and Niko's **letter dated 16 January 2005** to the Department of the Environment.³⁶² This was followed by the **report of Safety Boss** from which extracts have been quoted above in Section 10.1.³⁶³
463. Niko had engaged **Mr Randal Glaholt (Tera Consultants Ltd.)** from Canada as environmental consultant and sent him to the site after the first blowout. He provided a **first report**, dated 26 January 2005,³⁶⁴ reporting on losses determined during the monitoring. Starting with a first report on 28 February 2005,³⁶⁵ **Crown Agents jointly with Tera Consultants** reported on a biweekly and later on a monthly basis on their monitoring and its results. According to Mr Glaholt the 46 **Monitoring Reports** during the period until 31 December 2008 "provide a comprehensive picture of the nature and extent of the environmental and social impact of the two blowouts".³⁶⁶ **Mr Glaholt** reports also in his **first witness statement** on

³⁵⁸ Niko Environmental Impact Assessment, June 2004, Exhibits R-72 and C-13.

³⁵⁹ CMD, paragraph 141, relying on Second Witness Statement of Randal Glaholt, 5 September 2020 (WS Glaholt II), paragraph 16.

³⁶⁰ BMD, paragraph 376.

³⁶¹ Chattak 2 Well Control Incident and Blowout – Draft Report, 11 January 2005, Exhibit C-21.

³⁶² Attached to the Second Environmental Losses Report, Exhibit Annex R2(bis).

³⁶³ Safety Boss, Summary Report, 24 January 2005, Exhibit C-23.

³⁶⁴ Tera's Environmental Site Inspection Report, 26 January 2005, Exhibit C-25.

³⁶⁵ Crown Agents and Tera Consultants Biweekly Reports, the first of which dated 28 February 2005, Exhibit C-29.

³⁶⁶ WS Glaholt I, paragraph 20.

his observations of the “environmental and social effects” of the blowouts.³⁶⁷

464. In the context of the work of the Second Environmental Loss Committee, Niko provided comments on the assessment by the letter which **Mr Adolph**, Niko’s Country Manager, addressed to the convener of the Committee on **13 April 2005** with the reference “**Niko’s response to DoE Estimate of Environmental Costs**”.³⁶⁸ Extracts of the letter have been quoted above in Section 10.2.1.

10.2.3 Expert reports in the arbitration

465. The Claimant produced with Niko’s Reply of 29 May 2014 an expert report by **Mr Robert D. Kemp** of AMEC Environment & Infrastructure, Calgary, dated 29 May 2014. Mr Kemp had been instructed to determine the “extent to which the Government of Bangladesh or its instrumentalities suffered any monetary loss or damage as a result of atmospheric pollution (if any) that occurred as a result the loss of control incidents”. He concluded:

Because Bangladesh has no mandatory requirement to reduce carbon emissions, there is no loss in relation to carbon emissions.

*The air quality review is limited by a lack of air quality data collected during the events. Therefore monitoring data for the Alberta blowout is used as a comparative event. This data suggests that air quality at distances over 1 km would not be significantly impaired. The expected behaviour of the plume from a vigorously burning well fire would tend to move pollutants away from the immediate area, reducing air quality impacts around the Chattak well. Moreover, air quality in the Chattak well area appears to have recovered to pre-drilling conditions, as might be expected with short-duration transient events.*³⁶⁹

466. As mentioned above, the Tribunal appointed **Mr Ian Wallis** of Theon Ltd. Westhill, Aberdeenshire, UK, as independent expert to review Mr Kemp’s opinion and express his view on methodology used and conclusions reached. Mr Wallis produced a report, dated 8 June 2015, in which he

³⁶⁷ WS Glaholt I, paragraphs 37 – 112.

³⁶⁸ Letter from Niko to the Department of Environment, 13 April 2005, Exhibit C-32.

³⁶⁹ Expert Report of Robert Kemp, 29 May 2014, paragraphs 23 and 24.

found the methodology used by Mr Kemp “valid and appropriate” and his conclusions “valid”.

467. The Respondents engaged **Dr Ian Borthwick** of Borthwick & Associates, at Compton, Berks, UK, who produced a first report, dated 31 August 2015 (**Borthwick I Report**).

468. Dr Borthwick expressed the view that Mr Wallis “did not conduct an adequate critical review of the technical issues arising from Claimant’s case” and criticised his focus on greenhouse gases. Dr Borthwick stated:

Greenhouse gasses are only a minor part of the environmental, social and economic damage caused by this type of incident. The two blowouts were a catastrophic incident resulting in a substantial release of unrefined hydrocarbons and associated pollutants into the groundwater, surface water, soil and air. There was an extensive interface between the raw gas and natural gas liquids migrating to the surface, releasing toxic contaminants into the intervening soils and water. The Tribunal Expert failed to acknowledge and comment on the substantial environmental, social and economic impact described in the Committee Reports. He failed to note that these descriptions are fully consistent with the impacts of this type of hydrocarbon pollution event and failed to provide any context for the Tribunal to understand the nature of the Chattak blowouts.³⁷⁰

469. The Borthwick I Report adds further criticism of the Wallis’ report and states that Mr Wallis “should have submitted to the Tribunal that a different approach would be necessary to properly assess the facts”.³⁷¹

470. Concerning the valuation of the loss due to carbon emissions, Dr Borthwick proposes, as an example, to use prices from the European Union Emission Trading Scheme (EU ETS). He quotes approximately €9/ for January 2005 and €20/tonne for June 2005. On that basis, he calculates a loss of €9.7 million as the value of carbon emissions.

471. Dr Borthwick reviews the Environmental Loss Reports and concludes that the “importance of these Committee reports is that they establish loss and damage of environmental resources over and above the narrow discussions

³⁷⁰ Ian Borthwick’s Observations on the Tribunals’ Expert Report, 31 August 2015 (Borthwick I Report), paragraph 2.2.

³⁷¹ Borthwick I Report, paragraph 2.5.

on environmental damages addressed by Mr Wallis”.³⁷² The Borthwick I Report also reviews Niko’s environmental management and assessment and describes the “alleged ‘extensive and robust’ monitoring programme as crucially flawed in that it failed to target toxic organic contaminants or to implement any health monitoring following such a massive release of known carcinogens into the air, water and soil”. He recommends:

*Health screening of affected people should be initiated, examining medical records for the intervening 10 years to see if there is any increase in cancer related mortality/morbidity, and to conduct a long term health monitoring programme.*³⁷³

472. In the final observations of the report, Dr Borthwick criticises Mr Wallis for having failed to

*... address wide range of damages referred to in the Committee Reports, which are consistent with the damage caused by hydrocarbons pollution events and are the greatest source of harm and costs associated with such events.*³⁷⁴

473. The Borthwick I Report states that “a different approach [from that used by Mr Kemp and approved by Mr Wallis] is needed to determine the costs of a major release of hydrocarbons in the natural environment and populated areas”. The approaches considered in the report are “a comprehensive sampling programme at the site to measure pollution levels in water and soils”; or “a reasonable approximation of costs without onsite sampling would be to analyse similar incidents in other locations and generate a cost comparison”. The prior blowout at Moulavi Bazar is not mentioned as a reference location.

474. While the observations in the Borthwick I Report criticise Mr Wallis for having failed to address the damage referred to in the Committee Reports, they do not propose any update or adaptation of the Committee Reports; nor do they explain how the proposed sampling programme or the approximation of costs by reference to similar incidents would relate to the costs assessed in the Committee Reports.

³⁷² Borthwick I Report, paragraph 4.20.

³⁷³ Borthwick I Report, paragraphs 4.39 and 4.40.

³⁷⁴ Borthwick I Report, paragraph 5.1.

475. Some seven months later, **Dr Borthwick**, together with two other experts, produced a broader and more detailed report, dated **23 March 2016**. The two other members of this team are **Mr Clifford Ian Betton**, of Delphic HSF Solutions Limited, Deepcut Camberley, UK, and **Professor Paul Leinster**, Cranfield University, UK. The Respondents refer to this report as the “**Betton et al Expert Report**”.

476. The authors of this report describe their Methodology³⁷⁵ as follows:

- (i) the examination of documents and records, listed as references, including the Second and the Third Environmental Losses Reports (of 13 April and 15 September 2005) and many monitoring reports of Niko, Crown Agents and Tera Consultants.³⁷⁶ The authors explain that they made visits “to local and regional government offices in Doarabazar and Sylhet” and had meetings “with officials in Dhaka to obtain as much information from Government records as possible that relate to people’s health and the status of the environment and associated fisheries and agricultural production in Tengratila and its immediate surroundings”. They also mention “[i]nformation about the health status of the inhabitants of Tengratila and the surrounding region with respect to the number of individuals suffering from the effects of chronic arsenic poisoning and those with respiratory problems”. Finally, they mention that they obtained “records for the production of fish [...] for the fishponds around the village of Tengratila for the past ten years”.³⁷⁷

and

- (ii) Direct Observation: the authors explain that they visited Tengratila from 3 to 9 February 2016 “to observe the situation first hand”. At that occasion they visited the villages of Tengratila, Ajabpur and Girshnagar; they interviewed “groups of villagers” and explained: “local authorities assisted us in meeting representative individuals who were spoken to in greater depth”.³⁷⁸ They report: “A walking tour of the 5 villages that are collectively known as Tengratila was carried out on the 3 February 2016 with the Chairman of the Union of

³⁷⁵ Betton et al Expert Report, section 4.

³⁷⁶ Betton et al Expert Report, section 4.1.

³⁷⁷ Betton et al Expert Report, paragraphs 27 – 29.

³⁷⁸ Betton et al Expert Report, paragraphs 31 and 32.

Villages and other community leaders to see at first hand the current state of the area”.³⁷⁹

477. The authors took samples “from the ground, surface water and ground water [...] for chemical analysis. Samples of sediments and soil were also taken”.³⁸⁰ The report produces a table showing the “sampling and analysis programme” and a table showing “Levels of Hydrocarbons measured showing presence of VOCs [Volatile Organic Compounds] in areas above ground and water wells”.³⁸¹ No records are produced about the interviews and meetings; but some of the observations in the report refer to notes from interviews, information “from local farmers” or similar statements.
478. The section “Environmental Management – Legislation and Industry Standards” presents the authors’ views about the requirements of proper environmental management and on Niko’s deficiencies in this respect. This is followed by a section on “Niko’s Post-Disaster Monitoring Programme”, which starts with the observation: “The monitoring programme developed and implemented by Niko following the blowouts had some significant deficiencies”.³⁸² At the end of this section the authors conclude:

*We believe that Niko’s decision to not implement a robust and broad-ranging environmental and health monitoring programme of the sort we have described above means that they are not operating to the standards expected of such an organisation. The lack of relevant and systematic data generated by the programme and the inability to compare this with an adequate baseline situation has also complicated the task of identifying and assigning causes to the harms suffered by people and the environment.*³⁸³

479. The report goes on to present a section on “Observations, Interviews and Analysis”,³⁸⁴ followed by a section expressing an “Opinion Regarding Environmental and Social Harms”.³⁸⁵ The observations are introduced by a general explanation, referring to the “significant emissions of gas, sand

³⁷⁹ Betton et al Expert Report, paragraph 150.

³⁸⁰ Betton et al Expert Report, section 4.2

³⁸¹ Betton et al Expert Report, Appendices 4 and 5.

³⁸² Betton et al Expert Report, section 6, paragraph 109.

³⁸³ Betton et al Expert Report, paragraph 146.

³⁸⁴ Betton et al Expert Report, section 7.

³⁸⁵ Betton et al Expert Report, section 8.

and other subsurface material” and the observation of gas ingress in buildings and bubbles in the water. It continues by stating:

The results from a comprehensive survey, as outlined above, would have enabled a considered assessment to have been carried out on the extent and nature of the impact of the blowouts both immediate and then continuing. This would have facilitated the consideration of both acute and chronic impacts.

Because this information is not available, it is not possible to assess properly the full extent of the health, environmental, and economic impact of the blowouts. We believe that this is a major failing in Niko’s response to the blowouts.³⁸⁶

480. The report underlines the importance of a “comprehensive initial and on-going initial survey programme” and concludes:

Due to time constraints, we were not able to conduct a comprehensive study of the observable health and environmental impacts. Nevertheless, we captured a snapshot of the ongoing environmental and health impacts in Tengratila following the blowouts. We recommend that as a minimum, a comprehensive health and environmental survey is required to identify the scope and extent of all of the observed impacts. But as noted, even this will be insufficient to determine the impacts of the blowouts because Niko failed to establish adequate baseline data before and failed to monitor impacts adequately after the blowouts.³⁸⁷

481. The report then presents “Salient Points from Interviews Conducted During the Site Visit”³⁸⁸ and presents “Results of Chemical Analysis”,³⁸⁹ followed by the “Opinion on Harms”. These presentations are grouped in a number of categories:

- (i) Fish farming: On the day following “the blowout”³⁹⁰ two farmers reported that all their fish had died. “It was reported that all of the ponds in Tengratila remained affected and were unable to support

³⁸⁶ Betton et al Expert Report, paragraphs 154 and 155.

³⁸⁷ Betton et al Expert Report, paragraph 157.

³⁸⁸ Betton et al Expert Report, section 7.2.

³⁸⁹ Betton et al Expert Report, section 7.3.

³⁹⁰ The Report does not state to which blowout it refers.

fish life for 3 years”.³⁹¹ The authors see an indication that “some substance in the water that is having an adverse effect” and note that in “10 years the fish production has not fully recovered to pre-blowout levels”.³⁹²

- (ii) Agriculture: The report identifies (a) fire and heat and (b) the deposition of sand and other subsurface material expelled from the blowouts as the two main factors relating to agriculture. It asserts that “rice production is back to normal levels. However, the effect on trees and vegetables is still evident”.³⁹³ The Report explains that the “likely cause of the impacts on crops and vegetation is the reduction in oxygen levels in the soil due to the high methane emissions which continue today”.³⁹⁴
- (iv) Health: The report records the number of people treated by local medical staff after the blowouts according to the notes taken by the authors at Doarabazar interview with the Upazila Health and Family Planning Officer of Doarabazar, Dr Zillul Haque. It states:

As a result of the 2 blowouts, the villagers of Tengratila were exposed to high levels of airborne material that then settled on the ground. In the 10 years following the blowouts, they will then have been exposed to this material dust through skin contact and by inhalation as it is disturbed by movement and weather and becomes airborne and to gas emanating through the ground and water bodies.

*These chronic exposures potentially give rise to adverse health effects. These have not been investigated in a systematic way. Villagers are clearly suffering the symptoms of two major health impacts, namely arsenic poisoning and respiratory problems.*³⁹⁵

Based on the local health records of Dr Zillul Haque, the report states that the “incidence of chronic arsenic poisoning of the villagers of Tengratila is around 30 times that of the general population in the Union of Suma”. It mentions an “increased incidence of respiratory

³⁹¹ Betton et al Expert Report, paragraph 160.

³⁹² Betton et al Expert Report, paragraphs 220 and 223.

³⁹³ Betton et al Expert Report, paragraphs 161 and 162.

³⁹⁴ Betton et al Expert Report, paragraph 217.

³⁹⁵ Betton et al Expert Report, paragraphs 166 and 167.

illness among the villagers of Tengratila” and mentions Psychological issues, Eye problems, Heart problems and Muscular weakness.³⁹⁶

This report states that “Tengratila provides a rare situation where a population has been exposed to elevated levels of methane for more than 10 years and unless the gas emissions are stopped will continue for the foreseeable future”. It explains that “further work is necessary to identify the causes of the respiratory problems seen amongst the villagers. In this context the report states that “it appears that the inhabitants of Tengratila are exposed to high levels of arsenic” and discusses “several ways that levels of arsenic could have increased in the groundwater following the blowouts”. The mechanism discussed include the villagers ploughing into the soil the large volumes of sand and other sub-surface material expelled by the blowouts and deposited widely,

the arsenic containing compounds in minerals can react under different conditions to form water soluble compounds which have greater mobility and are more bioavailable. For example this may be through a reduction reaction mediated by bacteria. This action, together with the effects of fertilisation may have released soluble arsenic compounds into the fish ponds (no ploughing necessary) and soils and, subsequently, groundwater.³⁹⁷

Other mechanisms mentioned in this context are “oxidation of the arsenic compounds”, disturbance on the aquifer as a result of the blowouts”, the process employed in the Chattak 2B relief operation. The report concludes on this subject by stating:

The effects of the blowouts are the only observable reasonable cause for increased levels of arsenic and elevated levels of methane impacting the village and its inhabitants. Therefore, in our opinion, more likely than not, the chronic health effects are attributed to the blowouts. A comprehensive health survey is needed to identify those who are affected by environmental factors that are a consequence of the blowouts and those who are suffering from naturally occurring ailments, which will occur

³⁹⁶ Betton et al Expert Report, paragraphs 169 – 177.

³⁹⁷ Betton et al Expert Report, paragraph 206.

*in any given population. This will enable the appropriate medical treatment to be provided.*³⁹⁸

- (v) Education: the report describes damage to the high school building and remedial action. It also mentions reduced school attendances.³⁹⁹
- (vi) Gas use: The report describes the use made by the local population of the seeping gas:

*Many people are tapping in to the gas coming out of the ground and from ponds and are then piping it into their houses. A build-up of this gas within the houses gives rise to explosion and fire risks. People reported that they or others had been burnt when lighting the gas. Because the gas flows continuously gas rings for cooking also burn continuously. This has the potential to deplete the oxygen levels within the dwellings and to increase the levels of pollutants such as carbon monoxide and oxides of nitrogen.*⁴⁰⁰

482. The report concludes with a number of recommendations and conclusions. It describes a programme of “Detailed Environmental and Health Survey and Monitoring” over three years, involving Mr Betton and Professor Leinster at fees of £100’000 to £120’000.⁴⁰¹ The conclusions identify different sectors:⁴⁰²

- (i) Health: the report asserts that “health risks are still present related to both drinking water and exposure to elevated levels of gas”; and a “number of people in Tengratila are clearly suffering respiratory problems and from arsenic poisoning both of which we believe are likely to have been caused or at a minimum exacerbated by the consequences of the blowouts”.
- (ii) Environment: the report asserts: “The effects of the blowouts on the natural environment are not possible to determine without a properly designed and conducted environmental survey”. It identifies as elements of the survey: “distribution of plants and animals”, “sampling and analysis of water”, specifically for arsenic and heavy

³⁹⁸ Betton et al Expert Report, paragraph 211.

³⁹⁹ Betton et al Expert Report, paragraph 178.

⁴⁰⁰ Betton et al Expert Report, paragraph 179.

⁴⁰¹ Betton et al Expert Report, section 9.

⁴⁰² Betton et al Expert Report, section 10.

metals, and assessing the “extent of the gas emanating from the ground”.

- (vii) Agriculture: the report asserts: “The restitution of trees in many of the areas within the village of Tengratila has not been effective to date”; and suggests that it “may be necessary to install measures to prevent the gas diffusion through the soil and to provide uncontaminated sources of water before full recovery of vegetation and full growing can be achieved”.
 - (viii) Fisheries: the report asserts that it “may be necessary to identify the reasons for the reduced fish growth within the ponds before remediation measures can be introduced”. It recommends a “study of the numbers and growth rates of fish” and assumes that this “study will then be able to inform the design of a programme of measures to improve the conditions within the ponds, if that is possible”.
483. The Respondents also produce two expert reports by Mr **Stephen A Wilson** of Environment Protection Group Limited (**ESG**), Warrington, UK, the first report (**Wilson I**) is dated 23 March 2016, the second (**Wilson II**), 3 September 2020.
484. In the first report, Mr Wilson reports that he “completed a six day investigation during February 2016 to identify the source of current gas emissions in the area surrounding Chattak 2 and Chattak 2A”; the “purpose of the investigation was to also estimate the current areal extent of gas migration from the blowout well and the rate at which gas is seeping from the ground”. He explains that the field work and laboratory testing of this Technical Investigation “was completed by ESG Limited from the United Kingdom under my supervision”.
485. The first report explains that “Testing indicates that the gas in the ground in the Niko Compound close to Chattak 2/2A is from the same source as the gas emanating at the surface in the surrounding area”. It adds that there “is a very small amount of gas bubbling in the water in the cellar of Chattak 1 but it is confined to the well cellar and there are no observable emissions immediately around the well”.⁴⁰³ From his examinations Mr

⁴⁰³ Wilson I, Executive Summary, paragraph 6.

Wilson concludes that “Emissions vary within the 500m radius and vary seasonally”. Mr Wilson distinguishes

*... three zones of emissions based on the observations and test results, in order to help provide a feel for the extent of the problem. An inner area of highest emissions, a middle area of moderate emissions out to a radius of approximately 280m from Chattack 2/2A and the outer area to a 500m radius of lower emissions. Further testing and investigation is required to support the assumptions on the distribution of gas flows from the surface that were made when defining the zones.*⁴⁰⁴

486. On the basis of information provided by BAPEX’s counsel, Mr Wilson adds that “it is entirely plausible for localised areas of high emissions to have occurred outside the 500m boundary”.⁴⁰⁵ Based on his estimate of the current rate of gas migration over the affected area, Mr Wilson estimates

*[t]he total volume of gas lost since 2005 (after the final well kill operation) [...] to be between 704MMScf and 22,959MMscf from the 5000m radius plus a further 3,419MMscf to 6,839MMscf from the highly disturbed area. This is a rough estimate and makes no allowance for loss of pressure and reducing flows over time (i.e. flows would have been higher just after the blow out). There is no allowance for gas becoming trapped in localised reservoirs below clay layers in the DupiTila and Tipam Sand or Alluvial strata.*⁴⁰⁶

487. The report describes risks associated with the gas in the ground below the surface and the related seeping. It states that the “current level of risk associated with methane gas in the ground is not acceptable without further ongoing management and/or remediation. There is an immediate requirement to install gas monitoring system in buildings”.⁴⁰⁷ The report presents possible remedial actions, an immediate short-term measure and approaches for the long-term reduction of the risk.

- (i) The **immediate short-term measure** that could be implemented according to Mr Wilson “is the provision of properly sealed gas pipes and valves to all the stoves running off the gas from the ground [...]

⁴⁰⁴ Wilson I, Executive Summary, paragraph 8.

⁴⁰⁵ Wilson I, Executive Summary, paragraph 9.

⁴⁰⁶ Wilson I, Executive Summary, paragraph 10.

⁴⁰⁷ Wilson I, paragraph 7.8.

The costs of the valves in the UK would be in the in the order of **£15 UK Sterling each to supply** them (the cost of installing them would be extra but would only take an hour or so).⁴⁰⁸

- (ii) The first of the approaches presented as **long-term solution** would “leave the gas in the ground and provide barriers to gas ingress into the buildings by sealing over floor slabs and providing a venting layer below the slab”. Mr Wilson does not consider this to be a practical solution.⁴⁰⁹
- (iii) The **other long-term solution** consists in building a **gas abstraction system**, removing the gas from the shallow ground below the buildings and open space.

*This could be done by providing a preferential pathway for gas to flow to via a series of gas abstraction wells across the area. The wells are connected to an extraction system to draw gas in the shallow soils towards them. This process is known as soil vacuum extraction (SVE). The grid of abstraction wells could be connected to a flare, gas supply for the village or a generator for electricity (or combination of all three).*⁴¹⁰

Mr Wilson explains that the “approach is commonly used to extract gas from landfill sites, but I am not aware that it has been used in the specific circumstances of this case. Therefore, a trial installation and monitoring to assess the effectiveness of this solution would be required.”⁴¹¹ If implemented in the UK, Mr Wilson estimates that it would **cost in the order of £3’275’000 plus £1.6 million for 20 years monitoring.**⁴¹²

Mr Wilson considers such a gas extraction system as the “most appropriate form of long term mitigation” in order “to reduce the concentration of gas in the shallow sub-surface soils to acceptable levels and reduce surface emissions”.⁴¹³ He also mentions the “possibility of **killing the well completely** at reservoir level or **restarting gas production from the reservoir**” but does not

⁴⁰⁸ Wilson I, paragraph 6.4.1. (Emphasis added).

⁴⁰⁹ Wilson I, paragraph 6.4.2 (a).

⁴¹⁰ Wilson I, paragraph 6.4.2 (b).

⁴¹¹ Wilson I, paragraph 16.

⁴¹² Wilson I, paragraph 6.5.1.

⁴¹³ Wilson I, paragraph 7.9.

comment on these possibilities, as they are “discussed by other experts”.⁴¹⁴

488. In his **second report** of 3 September 2020 (**Wilson II**), Mr Wilson responds to the following questions:

1. Are the gas emissions from the ground noted in your first report attributable to the Chattak 2 well blowout? and

*2. Was gas seepage into the area surrounding the gas field noted in your first report a direct consequence of the first blow out?*⁴¹⁵

489. Mr Wilson refers to his previous report and his observation of “significant gas emissions from the ground in the surrounding area after the Chattak 2 blowout that are continuing to this day” and he concluded that the gas emissions he had observed and measured were “due to the effects of the blowout at Chattak 2 and come from the reservoir sands penetrated by the Chattak 2 well”. Mr Wilson explains that he did not undertake any further fieldwork after this first report, but reviewed “the available evidence contemporaneous to the first blowout”. That evidence included some of the monitoring reports by Crown Agents and Tera Consultants⁴¹⁶ and several BAPEX Monitoring Reports relating to the Chattak 2A relief well.⁴¹⁷ On that basis, Mr Wilson confirms that

*...the Chattak 2 well blowout caused substantial and widespread surface emissions in the area in a radius of up to one kilometre from the Chattak 2 wellhead.*⁴¹⁸

490. With respect to the second question, Mr Wilson concluded:

... there is no reliable evidence that the Chattak 2A well significantly increased the locations and extent of gas flow to the surface, and the volume of gas flowing to the surface over time was a function of flow from the opening in the cap rock caused by the Chattak 2 blowout. Therefore, in my opinion, the continued gas seepage at the surface in

⁴¹⁴ Wilson I, paragraph 6.4.5. (Emphasis added).

⁴¹⁵ Supplemental Expert Report of Steven Wilson, 3 September 2020 (Wilson II), paragraph 1.3.

⁴¹⁶ See Wilson II, paragraphs 4.1.2 and 4.1.4.

⁴¹⁷ See Wilson II, paragraphs 4.1.5 – 4.1.8.

⁴¹⁸ Wilson II, paragraph 5.1.1.

*the area surrounding the Chattak field is a direct result of the Chattak 2 blowout.*⁴¹⁹

491. Finally, it should be mentioned that **Mr Farid Uddin Ahmed**, headmaster at the Tengratila secondary school, and **Md. Shahjahan**, former headmaster of a nearby school and now Chairman of the Surma Union, in their witness statements of 5 and 6 March 2016, mentioned above, provide accounts of the events around the two blowouts. Their testimony also indicates some of the damage they observed.
492. In addition, **Dr Md. Abdul Gafur**, Assistant Professor (Chest Diseases) at North East Medical College, Sylhet, submitted a witness statement, dated 8 March 2016, in which he reports on his experience with patients in the outpatient department of the hospital. He states: “Over the past five years, I have observed that by far the largest number of patients with respiratory problems come to me from Tengratila and the Doarabazar area.”⁴²⁰

10.3 Identifying the claims for environmental losses

493. As mentioned above, the present arbitration concerning the Compensation Declaration was commenced by reference to the Money Suit. The Claimant stated that it sought to resolve the Compensation Claims in ICSID arbitration and described these claims as follows:

*Petrobangla and Bangladesh sued Niko and others in the Court of District Judge, Dhaka, Bangladesh, no. 224 of 2008 (the "Money Suit"), claiming damages alleged to arise from the blowouts of 2 wells in the Chattak field which were then being drilled under the JVA (the "Compensation Claims").*⁴²¹

494. The damages claimed in the Money Suit included the claims for environmental losses. This was confirmed by the Parties at the November 2020 Hearing.⁴²² The Respondents identified specifically Exhibit C-006, the “filing of the claim in the Money suit”.⁴²³

⁴¹⁹ Wilson II, paragraph 5.2.4.

⁴²⁰ Witness Statement of Abdul Gafur, 8 March 2016, paragraph 5.

⁴²¹ RfA I, paragraphs 6.8 and 6.13.

⁴²² HT (Day 2), pages 386, 387 and 433.

⁴²³ HT (Day 2), page 387.

495. In the Money Suit, the losses are presented in eleven categories,⁴²⁴ each of which quantified by an amount taken from the Third Environmental Losses Report of 15 September 2005, as discussed above; the total claim is for some Taka 84 crore, the amount at which the Third Environmental Losses Report quantified the losses for the alternative that “the relief well fails”.⁴²⁵
496. In the arbitration, the environmental losses were considered by reference to the Money Suit and to the reports of the Governmental Committees and in particular to the report of the Third Environmental Losses Committee of 15 September 2005, on which the claims in the Money Suit were based.
497. When the Tribunal organised in consultation with the Parties the proceedings for the two ICSID cases, time was reserved for the Respondents to raise a claim for compensation of the damage from the blowouts.⁴²⁶ The Respondents did not avail themselves of this opportunity.
498. In its Memorial concerning the Compensation Declaration of 27 September 2013, the Claimant provided information about developments in the Money Suit and insisted that any liability concerning the two blowouts had to be decided in the present arbitration. The Respondents replied with their Counter-Memorial of 30 January 2014 in which BAPEX denied that it was concerned by the claims in the Money Suit. They referred, however, to the Governmental Committees and stated that, in the Money Suit, the claimants “are alleging environmental contamination and gas losses”.
499. In its Reply of 29 May 2014, Niko described the activity and the reports of the Environmental Losses Committee, in particular the Third Environmental Losses Committee⁴²⁷ and the environmental losses, as they were claimed in the Money Suit.⁴²⁸ Together with this reply, the Claimant produced the report by Mr Kemp, also of 29 May 2014, discussed above in Section 10.2.3. Mr Kemp considered the environmental losses, as they were claimed in the Money Suit, by reference to the Committee Reports, in particular to the Third Environmental Losses Report.

⁴²⁴ Money Suit Complaint, Exhibit C-6, page 77, referring to Schedule D.

⁴²⁵ Third Environmental Losses Report, Exhibit Annex R-5(bis), page 19.

⁴²⁶ Procedural Order No 1, paragraph 2.

⁴²⁷ In this and some other submissions, the Reports are counted differently and the Third Environmental Losses Committee, with the report of 15 September 2005, is described as the Second Environmental Losses Committee.

⁴²⁸ C-CD.2, paragraphs 181- 185 and 298 – 302.

500. As the Respondents had not submitted any substantive reply to the Claimant's defence against claims made in the Money Suit, the Tribunal appointed, after consultation with the Parties, three experts including Mr Wallis. Mr Wallis' Terms of Reference specifically invited his comments on the Expert Report of Robert D. Kemp and on the relevant Committee Reports identified in Annex B. These reports were those which the Respondents had presented; the Third Environmental Losses Report was specifically highlighted. In his report of 8 June 2015, Mr Wallis discussed the report of Mr Kemp and the Committee Reports, in particular the Third Environmental Losses Report.
501. In their comments on Mr Wallis' report submitted on 13 August 2015, the Respondents criticised the reports of both Mr Kemp and Mr Wallis and insisted that the environmental damage was far broader than what these experts had considered. They relied in particular on the Committee Reports and produced the report of Dr Borthwick of 31 August 2015 (Borthwick I), also discussed above in Section 10.2.3. Dr Borthwick criticised Mr Wallis for having

... failed to acknowledge and comment on the substantial environmental, social and economic impact described in the Committee Reports. He failed to note that these descriptions are fully consistent with the impacts of this type of hydrocarbon pollution event and failed to provide any context for the Tribunal to understand the nature of the Chattak blowouts.

[...]

The Tribunal Expert failed to fully express his views on the methodology and opinions stated in the Committee reports. The Tribunal Expert failed to provide a helpful review of the Committee Reports on environmental losses.

[...]

... the Committee reports on which Mr Wallis was asked to comment provide a valuable description of the resources impacted by this event, and the disastrous effects on the local biology and ecology, but critically on people, their quality of life, their fundamental resources – water and agriculture, their economy and even education of their children are abundantly clear ...

[...]

*The importance of these Committee reports is that they clearly establish loss and damage of environmental resources over and above the narrow discussions on environmental damage addressed by Mr Wallis ...*⁴²⁹

502. The Respondents continued in subsequent submissions to refer to the Committee Reports, emphasising the qualifications of the Committee members. In the Memorial on Damages of 25 March 2016, they commend in particular the valuation of the environmental losses by the Third Environmental Losses Committee in its report of 15 September 2005.

*The values calculated therein are determined on the basis of the government committee-members' intimate knowledge of the local market and the types of interventions that would be required to mitigate or compensate for the harms. The extent to which these values must be supplemented due to continuing harm occurring over the past decade cannot be determined until after the monitoring program is completed, and BAPEX believes it is not appropriate to present an incomplete assessment at this time.*⁴³⁰

503. At the November 2020 Hearing, the Respondents again emphasised the role of the Third Environmental Losses Committee and the qualification of its members:

*... a committee formed by the DOE produced a report in September of 2005 that attempted to estimate the nature and value of various immediate and long-term losses. The committee included experts from DOE, the Bangladesh Forest Industry Development Corporation, the Department of Public Health and the Bangladesh Soil Resource Research Institute.*⁴³¹

504. The Tribunal concludes that, in the opinion which the Respondents continue to hold, the assessment by the Government Committees and in particular that in the Third Environmental Losses Report was a carefully considered estimate of “the nature and value of the various immediate and long-term losses” by experts from the relevant departments of the

⁴²⁹ Borthwick I, paragraphs 2.2, 2.4, 4.15 and 4.20.

⁴³⁰ BMD, paragraph 387.

⁴³¹ BMD, paragraph 387; an almost identical comment is recorded at HT (Day 2), page 371.

Government not only with “intimate knowledge of the local market” but also of the measures necessary for compensating the losses or to mitigate the harm. It is this assessment which, through the quantification of the environmental losses claimed in the Money Suit, was the reference for the assessment of these losses also in the arbitration – until 25 March 2016, when the Respondents filed their Memorial on Damages.

505. The Respondents presented a new and quite different approach to the assessment of the environmental losses. The Respondents referred to the values assessed in the Third Environmental Losses Report and stated that “these values must be supplemented due to continuing harm occurring over the past decade”.⁴³² However, until today, they have not presented any supplement of the valuation nor have they provided any substantive argument or evidence in support of the original valuation.
506. Instead of presenting supporting argument and evidence for the assessment in the Third Environmental Report, as claimed in the Money Suit, and a supplement to assess subsequent harm not assessed in this report, the Respondents presented in the BMD the new expert reports discussed above in section 10.2.3 and descriptions of various categories of environmental losses. These categories correspond in part to those in the Third Environmental Losses Report, as referenced in the Money Suit. The description of these losses, however, is unrelated to the description and assessment of these losses in the Third Environmental Losses Report and claimed in the Money Suit. The description asserts that Niko’s environmental monitoring and surveyance was inadequate and insists on the need for further monitoring and surveying. With two exceptions, neither the BMD nor the expert reports provide any assessment of the losses described.
507. The two exceptions relate to the proposals made by Mr Wilson in his first report; they will be discussed below in Section 10.4.4. They are the only losses for which the Respondents identify the compensation to be paid. This compensation is quantified by an estimate of the cost for proposed remedial action. The remainder of the monetary relief requested by the Respondents consists in the costs of monitoring and surveying, presented as an item of environmental loss. It will be discussed below in Section 10.6.

⁴³² BMD, paragraph 387.

508. The procedure that had been agreed in 2015, following the Respondents' change of counsel, provided that evidence and argument on Niko's liability for the blowouts would be heard at the hearing in November 2015 at dates that had been fixed in the previously established programme. The Respondents were given additional time for presenting the quantification of the losses resulting from the blowouts. The time for their memorial on damages was fixed for 25 March 2016, followed by the Claimant's Counter-Memorial and a hearing from 29 August to 2 September 2016. This procedure had been agreed at the November 2015 Hearing and was recorded in the Summary Minutes of that hearing prepared by the Tribunal.
509. BAPEX's Memorial on Damages, as produced by the Respondents at the agreed time, presented the new approach to the assessment of the environmental losses and requested a change in the agreed procedure. The Respondents requested that the assessment of these losses be deferred to an unspecified time until "a complete survey and monitoring of the Tengratila area can be conducted and BAPEX can provide the fullest possible accounting of environmental and health related losses".⁴³³
510. Following the Decision on Liability, the Tribunal sought clarification about the presentation of the claim for environmental losses, as it had been presented in the Memorial on Damages of 25 March 2016, and about the requested changes from the November 2015 programme. It instructed the Parties in Procedural Order No 24 of 4 April 2020 to identify in their submissions "with specificity which heads of recoverable loss presented in the Memorial on Damages" satisfy the requirements of their findings on Niko's liability. The Tribunal made it clear that this identification included "the environmental damage reserved for subsequent quantification".
511. In the Amendment of 9 September 2020, intended to respond to these directions, the Respondents do not refer to the values in the Third Environmental Losses Report and to the supplement of these values, as they had announced in the Memorial on Damages in 2016; nor do they provide any update on the monitoring and surveying programme which had been presented in that memorial.
512. Instead the Respondents discuss in the Amendment two other governmental reports, viz. the Second Environmental Losses Report of 13

⁴³³ BMD, paragraph 400(h).

April 2005 and the Local Losses Report of 8 June 2005.⁴³⁴ They state that these reports did not address “any losses related to the long-term effects of the first blowout on the land and environment of the affected area. These long-term effects include arsenic exposure, the long-term effects of the deposition of sand and other subsurface materials, and the continuous flow from the blowout into the living area, ponds, air and soil”.⁴³⁵

513. With respect to the Second Environmental Losses Report, the Respondents state that it “determined that there had been significant losses due to: air pollution; loss of vegetation; loss of agriculture and fisheries; damage to water resources; impact on soil resources; loss of ecosystem; health effects; and impact on education and livelihood”. The Respondents quote some passages from the report and conclude that “a Niko representative agreed that damage had occurred along the lines identified in the Government Committee Report, it [sic] disagreed with the amount of losses, and refused to sign the report or accept the Government’s determination”.⁴³⁶

514. The remainder of the Respondents’ explanation on the environmental losses in the Amendment consist of discussing some losses by reference to the new approach adopted in 2016 to the Betton et al Expert Report of 2016 and the two Wilson reports of 2016 and 2020.⁴³⁷ They state:

*In sum, the first blowout directly caused environmental and health damages from gas released from the reservoir underground and seeping at the surface. These constitute direct loss due to Niko’s breaches of the JVA compensable under Section 73 of the Bangladesh Contract Act. As discussed at paragraphs 80-81 and 96 of the Memorial on Damages, significant additional monitoring and field work is required to assess the full extent of these damages.*⁴³⁸

515. The Respondents repeat in the Amendment the request they had made more than four years earlier in the Memorial on Damages to suspend the proceedings for an unspecified period of time for monitoring and surveying.⁴³⁹ As an alternative, they maintain their request that the

⁴³⁴ Exhibits Annex R-2(bis) and Annex R-3(bis).

⁴³⁵ Amendment, paragraph 59.

⁴³⁶ Amendment, paragraph 57.

⁴³⁷ Amendment, paragraphs 60 – 67.

⁴³⁸ Amendment, paragraph 67.

⁴³⁹ Amendment, paragraph 99(c).

Tribunal grant “sufficient time for BAPEX’s experts to assess environmental damages fully”, but add following:

*Alternatively, and to the extent that some impacts can only be determined through long-term monitoring, this Tribunal could issue a Decision on all currently quantifiable damages and retain jurisdiction to determine the full scope of environmental damages documented by a future survey and monitoring program.*⁴⁴⁰

516. The Tribunal sought further clarification about the claimed environmental losses. The Tribunal summarised its understanding of the claimed losses and addressed the following question specifically to the Respondents:

*List each specific loss for which BAPEX claims in the category of its Third Head of Loss and indicate how this specific loss was caused by the first blowout. Where the loss was described in previous Government reports, submissions or expert reports, in a manner that the Respondents consider sufficient, they may identify the relevant document (with page references) for the description of a specific loss and the causation.*⁴⁴¹

517. At the Hearing the Respondents again did not refer to the assessment in the Third Environmental Losses Report but only to the Second Environmental Losses Report of 13 April 2005. They addressed the Tribunal’s question by presenting seven categories of “Specific Loss”, similar in part but unrelated to those of the losses claimed in the Money Suit. The Respondents presented these categories by four slides of their PowerPoint presentation, referred the Tribunal to reading the text in the slides and discussed them briefly at the Hearing.⁴⁴² The following losses were identified:

- (1) *Environmental losses (impacts on native flora and fauna);*
- (2) *Damage to water resources: high levels of arsenic in water;*
- (3) *Human health impacts: arsenic poisoning and respiratory illness;*

⁴⁴⁰ Amendment, paragraph 81.

⁴⁴¹ Questions for the November 2020 Hearing, question 16.

⁴⁴² HT (Day 1), pages 71 to 78 and Respondents’ Presentation, 19 November 2020, Slides 50 to 53.

- (4) *Impacts on agriculture;*
- (5) *Impacts on fisheries;*
- (6) *Costs to abate and monitor explosion risks in Tengratila; and*
- (7) *Costs for monitoring and surveying program to actually and fully identify and document the scope and environmental and human health damages cause by the blowouts.*

518. For each of these categories the Respondents identified in their slides presented at the Hearing “Where The Loss Was Described”, mentioning in particular the Betton et al Expert Report and the Wilson I and II Reports, the Memorial on Damages, the Amendment and the Second Environmental Losses Report of 13 April 2005. A column entitled “Causation” contains some explanations; the entries (1) to (5) in this column conclude with the words “The full extent of damages is to be further investigated” (see below).

519. The presentation at the Hearing for the first six of these categories took the following form – the seventh category concerning the monitoring and surveying programme shall be considered separately in Section 10.6:

Tribunals’ Question 16		
Specific Loss	Where The Loss Was Described	Causation
1. Environmental losses (impacts on native flora and fauna)	Expert Report of Mr. Clifford Betton, Dr. Ian Borthwick, and Prof. Paul Leinster (23 Mar. 2016) (“Betton et al. Expert Report”), paras 213-215 Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blowout Explosion in Tengratila Gas Field (13 Apr. 2005) (R Annex 2(bis))	The first blowout caused the deposition of sand and other sub-surface material over a large area and disrupted the geology that has resulted in contamination of surface and ground water with arsenic. The deposition of sand and other debris and mobilisation of arsenic caused by the first blowout and the constant gas emissions have damaged soil, plant and animal life, particularly biodiversity. The full extent of damages is to be further investigated.
2. Damage to water resources: high levels of arsenic in water	BAPEX’s Memorial on Damages, ¶¶ 340-346 Expert Report of Mr. Clifford Betton, Dr. Ian Borthwick, and Prof. Paul Leinster (23 Mar. 2016) (“Betton et al. Expert Report”), ¶¶ 205-206 Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blowout Explosion in Tengratila Gas Field (13 Apr. 2005) (R Annex 2(bis))	There are two relevant ways in which arsenic was likely released into the groundwater and ponds as a result of the first blowout: First, the large volumes of sand and other sub-surface material expelled as a consequence of the blowout and deposited widely and in significant quantities throughout Tengratila were ploughed into the soil by the villagers as the only feasible means of disposal because Niko failed to remove it. The material expelled from the well could have included arsenic containing minerals. Second, arsenic could be released from the disturbance to the aquifers as a result of the blowout. It has been reported that the groundwater levels lowered and then have recovered. The full extent of damages is to be further investigated.

Specific Loss	Where The Loss Was Described	Causation
3. Human health impacts: arsenic poisoning and respiratory illness	BAPEX's Memorial on Damages, ¶¶ 347-353. Betton et al. Expert Report, paras. 199-212. Wilson Supplemental Expert Report, ¶ 5.1.1 Wilson Expert Report, Section 6.3. Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blowout Explosion in Tengratila Gas Field (13 Apr. 2005) (R Annex 2(bis))	The increased levels of arsenic in drinking water directly caused by the blowout have caused arsenic poisoning in the local population and continues to pose this risk to public health. The continuous gas emissions flowing directly from the first blowout have caused respiratory illness. The full extent of damages is to be further investigated.
4. Impacts on agriculture	BAPEX's Memorial on Damages, ¶¶ 358-362. Betton et al. Expert Report, ¶¶ 216-217. Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blowout Explosion in Tengratila Gas Field (13 Apr. 2005) (R Annex 2(bis))	In addition to the immediate impacts from the blowouts which resulted in burning and destruction of crops and other vegetation, crops and rice production suffered from adverse effects for several years after the blowouts. This is directly caused by the first blowout because high methane emissions from the blowout, which continue today, reduced oxygen levels in the soil. The full extent of damages is to be further investigated.

Specific Loss	Where The Loss Was Described	Causation
5. Impacts on fisheries	BAPEX's Memorial on Damages, ¶¶ 354-357. Betton et al. Expert Report, ¶¶ 218-223. Report of the Committee Formed to Estimate the Amount of Environmental Losses due to Blowout Explosion in Tengratila Gas Field (13 Apr. 2005) (R Annex 2(bis))	The first blowout directly damaged the fisheries in two ways: (1) physical damage from the shock waves that resulted from the blowout and (2) the deposition of sand and other sub-surface material with the associated carriage of toxic materials into the water led to fish deaths. The full extent of damages is to be further investigated.
6. Costs to abate, mitigate, and monitor explosion risks in Tengratila	BAPEX's Memorial on Damages, ¶¶ 336-337 and 369-375 Wilson Supplemental Expert Report, ¶ 5.1.1 Wilson Expert Report, Sections 6.2, 6.3, 6.4, 7.	The seepage of blowout gas from the Chattak 2 well into the village of Tengratila, which began soon after Niko lost control of the well, continues to this day within a radius of at least 500 meters from the blowout. As BAPEX's gas migration expert Steven Wilson notes "essentially all of the gas reaching the surface from the date of the Chattak 2 well blowout to the present was released from the reservoir by the Chattak 2 blowout." Wilson Supplemental Expert Report, ¶ 5.1.1. In addition to the health risks described above, the uncontrolled gas emissions pose a potentially unacceptable risk of explosions to the villagers.

520. At the Hearing, the Respondents addressed what they considered the “main facts” and discussed in particular the continuing seepage of gas and arsenic contamination.⁴⁴³ The specific action that, in the Respondents’ opinion, must be taken to remedy the loss and the monetary compensation that the Respondents request the Tribunal to order has not been presented.

521. As the Respondents stated at the Hearing about their new approach to the assessment of environmental losses: “The full extent of the damages is to be further investigated”. The completion of this investigation remains uncertain. The monitoring and surveying programme, to which the Respondents referred again at the Hearing and which apparently still has

⁴⁴³ HT (Day 1), pages 72 – 75.

not started, provides for a three year period.⁴⁴⁴ The Proposed Procedural Schedule presented by the Respondents at the end of the Hearing envisages that the quantification of the claim will be presented “nine months from when the World Health Organisation declares the COVID-19 pandemic [...] over”.⁴⁴⁵ It appears from this account of the manner in which the claims for environmental losses have been presented in this arbitration that **the Tribunal** is faced with a contradictory position concerning these claims. It now has before it:

- (i) a completed and quantified assessment of immediate and long-term environmental losses; that assessment was presented in the Money Suit which forms the basis for the Claimant’s request for the Compensation Declaration; this assessment served as the only reference for the discussion of environmental losses in this arbitration until the Respondents presented a new approach on 25 March 2016; thereafter the Respondents continued to emphasise the qualifications of the members of the committee that prepared the assessment, but they did not provide any argument and evidence in support of these findings that would allow carefully considered assessment by the Tribunal, and
- (ii) a programme for monitoring and surveying intended to provide, in an uncertain future, the basis for a new assessment of environmental losses that have been identified until now only in general terms.

522. Despite this contradictory position, the Tribunal has considered some elements of what appears to be the claimed environmental losses in order to determine whether and to what extent they are recoverable in light of its Decision on Liability. These considerations and the conclusions reached are set out in the next two sections. The procedural consequences which the Tribunal draws from this contradictory position will be set out thereafter.

⁴⁴⁴ HT (Day 2), page 375, confirming the terms of the programme as described at BMD, paragraph 377 and in the Betton et al Expert Report, paragraphs 225 – 236.

⁴⁴⁵ HT (Day 2), page 308 and Respondents’ Presentation, 20 November 2020, Slide 40.

10.4 Determining compensable environmental losses

10.4.1 The issues and the Parties' position in general

523. In the context of the claim for environmental losses, it is undisputed that, as recognised by the Claimant at the Hearing, “There were some direct losses”.⁴⁴⁶ The question therefore is whether there are any claims for environmental losses that are not recoverable in light of the legal considerations set out above in Section 7. In other words, is there a line that can and must be drawn between the admittedly direct losses and those that are excluded?
524. The blowouts occurred in the form of escaping gas and the ejection of solid material from the overburden and debris from the well. Some of the gas burnt and the ejected material spread over a large area, the density of the deposits decreasing with the distance from the blowout well.
525. This action of the blowout caused some immediate damage as recalled above: for instance, damage to or destruction of trees and other plants; some buildings and movable property were destroyed or damaged; people fled and in the course of their flight may have been injured; agricultural land was covered by the ejected material; fish died. There seems to be no doubt that these immediate effects constitute direct loss and damage. Most of this loss and damage, if not all, has been assessed by the Local Losses Committee and was compensated by Niko, as described above.
526. This immediate damage had further consequences: where trees and plants were burnt or where the ground was covered with ejected material, agricultural production was reduced or prevented altogether at least temporarily; where houses near the blowout area were damaged or destroyed, they had to be left by their inhabitants and temporary accommodation had to be found until the buildings were restored. Some or most of these consequences, too, seem to have been covered by the compensation provided in the process adopted by the Local Losses Committee.
527. Other losses, especially where the long-term effects are considered, have been addressed in the Second and, more broadly and concretely, in the

⁴⁴⁶ HT (Day 1), page 184.

Third Environmental Losses Report. It is with respect to these losses that the Parties disagree.

528. **The Respondents** do not accept that a distinction is to be made with respect to any of the losses they describe in their new approach to the claims for environmental losses. They argue that “the blowout instantaneously began to cause the environmental harms, which persisted over time. No harm could be more direct”.⁴⁴⁷
529. With respect to certain events described by the Claimant as “intervening”, the Respondents deny that they were intervening and argue: “to the extent any of these events occurred, they were foreseeable and therefore did not break the chain of causation”.⁴⁴⁸ The Respondents focussed their explanations on the contamination of the surface and groundwater by arsenic and on the seepage of gas from the Reservoir with the objective of demonstrating that they were “a direct result of the blowout”.⁴⁴⁹
530. When presenting its latest position concerning the claimed losses, the Respondents also highlighted the evidentiary issue and the scope of the decision that the Tribunal can make at this stage of the proceedings:

*Now, in order to determine whether these losses directly flow from the first blowout, the Tribunals would need to decide a number of facts in dispute between the Parties, and these facts cannot be decided without consideration of specific evidence and Expert Reports. These issues in dispute will be--should be decided after the full evidentiary hearing on damages is concluded. To the extent that the Tribunals address any of them now, as I've asserted, they should assume them in BAPEX's favor.*⁴⁵⁰

531. **The Claimant** argues that the environmental losses as now presented “are not of a type that are recoverable under the law, or else are wholly unproven and speculative”. Even if the losses were proven and had not yet been compensated by Niko, the damage claimed, “would still fall within the scope of the excluded losses”.⁴⁵¹ In this respect, the Claimant relies on

⁴⁴⁷ Amendment, paragraph 55.

⁴⁴⁸ HT (Day 1), page 77.

⁴⁴⁹ HT (Day 1), pages 72 – 77.

⁴⁵⁰ HT (Day 1), page 72.

⁴⁵¹ CMD, paragraph 83.

multiple “intervening causes” and “supervening events” to contest the recoverability of the claimed losses and mentions as examples:

... the second blowout, for which Niko is not liable; actions by villagers to divert gas seepages; ploughing allegedly arsenic contaminated dust and debris into soil; the effects of seasonal floods and monsoons; construction of homes, schools, ponds and water wells after the blowout; seismic activity and earthquakes since the blowouts; and the migration of gas through different geological pathways over time.

Thus, even if BAPEX had established some legal foundation to pursue claims for the damages it speculates may have been caused, such damages would be at best “consequential loss and damage resulting from pollution”, if not simply too remote to be recoverable even in the absence of the exclusion of liability under Article 27.2.⁴⁵²

532. Addressing the first six items of environmental losses, as they were presented at the Hearing, the Claimant asserted that their “entirety [...] can be disposed of at this Hearing. This is because these alleged environmental losses are not recoverable in principle”.⁴⁵³ The Claimant raises “two critical legal deficiencies”: first, that the claims are “for damages suffered by third parties”, an issue that shall be considered in section 10.5 below; and second, the alleged absence of any evidence and, more far reaching, the “hypothetical” nature of the issues:

The second legal deficiency is that BAPEX has not put forward even prima facie evidence or allegations establishing that any of these alleged losses, in fact, actually exist. There is no evidence of any costs incurred or payments made by BAPEX or the Government. These alleged losses are prevented [recte: presented?] as items on which further studies are required or where comprehensive survey is needed. They are hypothetical issues for which no specific loss has been identified as existing. That such a loss might possibly be particularized in the future is, in my submission, not sufficient.⁴⁵⁴

⁴⁵² CMD, paragraphs 87 and 89.

⁴⁵³ HT (Day 1), page 180.

⁴⁵⁴ HT (Day 1), page 182.

533. **The Tribunal** has examined which of the environmental claims, as now presented by the Respondents in the arbitration, have been developed to the point that a determination as to their recoverability can be made. The Tribunal is mindful of the agreed procedure, and the Respondents' comments specifically with respect to the factual issues arising in the context of environmental claims, quoted above. As elsewhere in this Decision, the Tribunal assumed contested evidence in favour of the Respondents.
534. Given the incomplete presentation of the environmental claims in this arbitration, the Tribunal has adopted a cautious approach in its determinations about the recoverability of these claims in principle. It will consider specifically those items of damage and loss to which the Respondents have attributed particular attention in their more recent submissions, viz. seeping gas and arsenic contamination. It also considers specifically the proposals for abatement action by Mr Wilson, the only two items of environmental loss for which the Respondents have made a complete claim in the arbitration, including quantification.
535. As a more general consideration, the Tribunal has examined the relationship between the assessment of immediate and long-term environmental losses by the Third Environmental Losses Committee and the proposed future work of the Respondents' new environmental experts.
536. The committee presented its valuation as a complete assessment of the environmental losses. It did not reserve any losses for future assessment even though it was aware that some losses were difficult if not impossible to assess with precision and that some losses would develop over time. In both cases it made an estimate.
537. Given their "intimate knowledge of the local market and the types of intervention that would be required to mitigate and compensate for the harms", which the Respondents emphasise, one may expect that the committee members had a good understanding of the environmental losses that did and could result, in Bangladesh and in the Tegratila area, from an event like the one they had to assess. If they wish to argue that there was any immediate or long-term damage caused by the blowouts which the committee overlooked in its assessment, the Respondents will have to explain the oversight and justify why such damage should be added in the assessment to be considered now.

538. Similarly, if they wish to argue that the proposed future monitoring and surveying, sixteen years and more after the blowouts, could discover new categories of damage that had escaped the attention of the members of the Third Environmental Losses Committee and have not been discovered since then, the Respondents would have to explain why such a category of environmental loss could not have been discovered earlier and why such late discovered damage would nevertheless be foreseeable and direct. The allegedly insufficient monitoring does not appear as a sufficient explanation, *inter alia*, because it did not prevent the Governmental Committees from making their assessment on the basis of their members' own "intimate knowledge".
539. These general considerations about recoverable losses, as well as the possible contribution of future monitoring and surveying, will be considered further in the context of the claim related to such monitoring and surveying.

10.4.2 Gas seepages

540. **The Respondents** assert that relief well Chattak 2B did not completely seal the Chattak 2 well and that, despite the declared success of the relief operation, gas from the Reservoir continued to escape, finding its way through the overburden above the Regional Shale and causing, until today, seepages in a wide range around the Chattak 2 well. For the Respondents these seepages are a major source of continuing environmental losses. In their letter of 17 September 2015, the Respondents had explained that BAPEX was pursuing claims concerning the gas seepages by separate action;⁴⁵⁵ however, in its Memorial on Damages and thereafter BAPEX included the alleged gas seepages in its claims for lost gas and for environmental losses caused by the seepages.
541. **The Claimant** firmly denies the assertion that the Chattak 2B relief well did not properly seal the blowout well and that gas continues to escape from the Reservoir as a result of the blowouts.⁴⁵⁶ It also challenges that certain asserted losses, such as those resulting from arsenic, are a direct consequence of the alleged seepages.⁴⁵⁷

⁴⁵⁵ See above Section 3.1.

⁴⁵⁶ See above Section 8.3.

⁴⁵⁷ CMD, paragraph 86.

542. **The Tribunal** notes that this is a loss which the Third Environmental Losses Committee did not address directly and, since its report was completed before Niko had announced the successful completion of the relief operation on 9 October 2005, could not evaluate. The Third Environmental Losses Report did, however, provide an alternative assessment for the hypothesis “if the relief well fails”; the claim in the Money Suit is for the amount assessed under that hypothesis. Nevertheless, the developments that occurred after the completion of this report on 15 September 2005 and the explanations of the Respondents’ new environmental experts are such that a reconsideration appears to be justified.

543. At this stage, the Tribunal accepts, as provided by the agreed procedure, that the Respondents’ factual allegations are correct. The Tribunal assumes that the Chattak 2B relief well did not seal the Chattak 2 well completely, that gas continues to escape from the Reservoir, and that all of the gas seepages observed in the surrounding of the Chattak 2 well are attributable the first blowout.

544. The Claimant raises, however, another argument, related to a point that has been considered already. It states:

... any damage or loss due to ongoing gas seepages alleged to be attributable [to] an incomplete sealing achieved by Chattak 2B (which has not been proven) would also be “consequential”, as it would be the result of BAPEX’s repeated refusal to allow a production well to be drilled, so as to create a preferential pathway for any gas to flow and ultimately to deplete or exhaust any gas in Sands 1 and 2 entirely.⁴⁵⁸

545. **The Tribunal** has considered this argument above in Section 8.3.2. It noted that, by having failed to agree to any drilling of a production well, BAPEX may be responsible for having prevented action that may have reduced and eventually stopped any further seepages from the Reservoir. It deferred its decision until the Parties had been given the opportunity to present further argument and evidence in the proceedings on quantification.

⁴⁵⁸ CMD, paragraph 88.

10.4.3 Arsenic contamination

546. **The Respondents** assert that the blowouts caused an increase of the arsenic content in the water with effects on the health of the population⁴⁵⁹ and pisciculture.⁴⁶⁰ They state that “the blowouts are likely to be a major, if not the sole primary, cause of the high level of arsenic poisoning present in people living in Tengratila”.⁴⁶¹

547. At the Hearing the Respondents addressed “the main facts relating to the causation of environmental damages” and asserted:

*The first blowout caused deposition of sand and other surface materials over a large area and disrupted the underlying geology. The deposition resulted in contamination of the surface and groundwater with arsenic. This is a direct result of the blowout.*⁴⁶²

548. In the PowerPoint presentation backing up their argument, the Respondents refer to the “increased levels of arsenic in drinking water directly caused by the blowouts”.⁴⁶³

549. The Respondents and their environmental experts recognise that, prior to and independent of the Chattak blowouts, there was, as explained by the Respondents, a “known issues with arsenic in the groundwater in Bangladesh”;⁴⁶⁴ their environmental experts stated that “arsenic in drinking water is a known hazard in the region in general”.⁴⁶⁵

550. The experts comment on Niko’s EIA and state that Niko took “3 measurements of arsenic in groundwater in the EIA” and that “Niko’s own post-blowout monitoring, reflect exceedance of arsenic EQC [Environmental Quality Standards] on several occasions”.⁴⁶⁶ They then explain their own investigation, stating that “recent sampling and analysis in February 2016 found evidence of arsenic in the drinking water supply levels which exceeded the Bangladesh drinking water standard”.⁴⁶⁷ The experts explain that they sampled four tube wells and found in three of

⁴⁵⁹ BMD, paragraphs 347 – 353.

⁴⁶⁰ BMD, paragraph 357.

⁴⁶¹ BMD, paragraph 341.

⁴⁶² HT, page 72.

⁴⁶³ Respondents’ Presentation, 19 November 2020, slide 51, special loss no 3.

⁴⁶⁴ BMD, paragraph 304.

⁴⁶⁵ Betton et al Expert Report, paragraph 71; in the same sense BMD, paragraph 280.

⁴⁶⁶ Betton et al Expert Report, paragraph 71.

⁴⁶⁷ Betton et al Expert Report, paragraph 140.

them arsenic levels that exceeded the Bangladesh drinking water standard. They concluded: “Even though the shallower wells were found not to be contaminated, these results indicate that a significant number of wells in Tengratila are likely to have elevated levels of arsenic”. They also stated that the water in one of the six ponds they sampled “exceeded the Bangladesh drinking water standard for arsenic”. The experts also point out that “surface water in the area generally arises from rain or river flooding”.⁴⁶⁸ The experts conclude that the “effects of the blowouts are the only observable reasonable cause for increased levels of arsenic”.⁴⁶⁹

551. The Respondents stated in the BMD of March 2016 that before these losses can be quantified further investigations are necessary, and claimed from the Claimant in the amount of USD 786’372 for a three-year drinking water survey of all sources used in dwellings “to adequately understand the scope of arsenic contamination as well as to alert to the presence of other parameters of concern”.⁴⁷⁰ Since then, none of the monitoring and survey programmes have been performed.⁴⁷¹

552. The Third Environmental Losses Report also contains observations concerning arsenic contamination:

*Arsenic was found in 3 water sources out of 10 existing water sources of the said area. After the gas well accident, the water of all the water sources has been tested in a laboratory, and it was found that the quantity of arsenic has increased in the water of all the tube-wells. As a result, villagers are not using this water in any work.*⁴⁷²

553. **The Claimant** contests the conclusions of the Respondents’ environmental experts and asserts that they are “wholly unsupported by evidence” and contradicted by the witness statement of Mr Glaholt according to whom “the Chattak gas is of a very dry sweet variety and contained no arsenic”. Mr Glaholt stated that in June 2005 he consulted an American hydrologist who “opined that no significant adverse impacts appeared to have resulted from the fist blowout”.⁴⁷³ Mr Glaholt also asserts in his witness statement: “More recent arsenic testing by the Bangladesh Department of Public

⁴⁶⁸ Betton et al Expert Report, paragraphs 184 to 186.

⁴⁶⁹ Betton et al Expert Report, paragraph 211.

⁴⁷⁰ BMD, paragraph 377(c).

⁴⁷¹ See below, Section 10.6.

⁴⁷² Third Environmental Losses Report, Exhibit Annex R-5(bis), page 11.

⁴⁷³ WS Glaholt I, paragraph 85.

Health Engineering on 8 October 2016 revealed that of the 13 wells tested, only one had arsenic levels above the 0.05mg/L threshold”.⁴⁷⁴

554. The Claimant also asserts that “both the alleged arsenic contamination, and the allegedly possible effects of ongoing surface gas emissions, are matters that are either contributed to by, or are entirely dependent upon multiple ‘intervening causes’ or ‘supervening events’”. It lists a number of such intervening causes, as quoted above.⁴⁷⁵
555. **The Tribunal** notes the Parties’ opposing views about the factual situation. At this stage, the Tribunal assumes that the Respondents and their experts are correct and that, as a result of the first blowout, the level of arsenic in the water in the Tengratila area around the blowout increased.
556. The question remains whether the causation between Niko’s breach and an increase of the arsenic level in the water is direct or remote/indirect or consequential. The Tribunal therefore examines how, in the explanations of the Respondents and their experts, Niko’s breach of its obligations as Operator and the resulting January 2005 blowout are said to have produced this increase.
557. The Tribunal notes that none of these explanations attributes the alleged increase of arsenic to the gas that escaped as a result of the blowout; the assertion that this gas did not contain arsenic thus is not contradicted.
558. In the explanations given by the Respondents and their experts the arsenic has its origin in the minerals in the soil ejected by the blowout or disturbed by it. In the explanation at the Hearing, as quoted above, the deposition of the ejected materials “resulted in contamination of the surface and groundwater with arsenic”.⁴⁷⁶
559. Neither the Respondents nor their environmental experts are certain about the mechanism by which the material ejected by the blowout caused the contamination. The environmental experts explain:

*There are several ways that levels of arsenic could have increased in the groundwater following the blowouts.*⁴⁷⁷

⁴⁷⁴ WS Glaholt II, paragraph 44.

⁴⁷⁵ CMD, paragraph 86 and 87.

⁴⁷⁶ HT (Day 1), page 72.

⁴⁷⁷ Betton et al Expert Report, paragraph 205.

560. The first of these explanations assumes that the materials ejected by the blowouts and deposited widely and in significant quantities throughout Tengratila were ploughed into the soil by the villagers as the only feasible means of disposal. The experts assume that “the material expelled from the well could have included arsenic containing minerals” and they support this assumption by saying that “Arsenic is a naturally occurring substance in many parts of Bangladesh including Tengratila”. Assuming that the materials ploughed into the soil did indeed include arsenic containing minerals, the experts explain that the following process could have taken place:

The large volumes of sand and other sub-surface material expelled as a consequence of the blowouts and deposited widely and in significant quantities throughout Tengratila were ploughed into the soil by the villagers as the only feasible means of disposal. The material expelled from the well could have included arsenic containing minerals. Arsenic is a naturally occurring substances in many parts of Bangladesh including Tengratila. The arsenic containing compounds in minerals can react under different conditions to form water soluble compounds which have greater mobility and are more bioavailable. For example, this may be through a reduction reaction mediated by bacteria. This action, together with the effects of fertilization may have released soluble arsenic compounds into the fish ponds (no ploughing necessary) and soils and subsequently, groundwater.⁴⁷⁸

561. At this stage the Tribunal accepts that these explanations are factually and scientifically correct. The Tribunal also accepts that the following steps, described by the experts, did actually occur: (i) the material ejected by the blowout had not been removed in any clean-up operation that may have taken place following the blowout, (ii) the villagers had no other solution but to plough the material into their fields and did so “as the only feasible means of disposal”, (iii) the materials included arsenic containing minerals, (iv) the conditions under which these minerals react (conditions which the experts did not describe) occurred, (v) the minerals formed water soluble compounds which have greater mobility and are more bioavailable, (vi) bacteria mediating a “reduction reaction” were present in the soil and (vii) did in fact mediate the reduction reaction, (viii) fertilisation was added to the process (viii) this process released soluble arsenic compounds into the

⁴⁷⁸ Betton et al Expert Report, paragraph 206.

soils and (ix) from the soil these compounds reached the ground water which (x) was tapped in a well and used as drinking water.

562. The other possible ways described by the Respondents' environmental experts by which the levels of arsenic in the drinking water could have increased are of similar complexity. They include "oxidation of arsenic compounds to form more soluble compounds". Such oxidation may have occurred as a result of "wetting and drying of exposed materials"⁴⁷⁹ or from disturbance of the aquifer as a result of the blowout, leading to lowering and later rising of the groundwater levels;⁴⁸⁰ in a third way described by the experts some of the arsenic containing compounds could be turned into soluble compounds as a result of "Niko's injection of 1000 gallons of 15% acid in Chattak 2B to eat through the rock to the original hole of Chattak 2 and establish communication with the well". Although this communication occurred in October 2005, after the first and the second blowout, the experts assume that "[f]ollowing the blowout some of this acidic material could have been dispersed within the subsurface geology". The experts assume that through this dispersion "more of the arsenic compounds could go into solution and enter the groundwater".⁴⁸¹
563. The fact that the experts cannot say with certainty which process caused the assumed increase in the arsenic level in the water, in itself, make it doubtful that this increase arose naturally and "in the usual course of things". One would have to accept that, in the eyes of the law, a direct loss can be caused by one of several courses of things without certainty which course actually took place and even without certainty that any of the identified courses produced the loss.
564. The processes which the experts describe as possible ways for having led to the increase in the arsenic level are complex and rest on a number of assumptions: the gas that escaped the Reservoir or the fire were neither the cause nor a contributing factor. The arsenic must come from the ground, primarily the material ejected by the blowout and ploughed back by the villagers; but, according to the experts' explanations it does not occur naturally in soluble form. The "arsenic containing minerals" must "react under different conditions to form water soluble compounds". The experts describe "reduction reactions mediated by bacteria", aided by

⁴⁷⁹ Betton et al Expert Report, paragraph 207.

⁴⁸⁰ Betton et al Expert Report, paragraph 209.

⁴⁸¹ Betton et al Expert Report, paragraph 210.

fertilisation, as one of the possible ways. The process could also take place by oxidation; or by liquid containing 15% acid.

565. The Tribunal is unable to consider any of the different processes described by the experts as a natural result of Niko's fault as Operator when it decided on the casing depth and performed the wiper trip in the course of which the first blowout occurred; nor is there any indication that the Parties knew, when they concluded the JVA, that any of these processes would result from this fault as Operator. Indeed, there is no indication that the occurrence of such a process was reasonably foreseeable by a diligent operator.
566. **The Tribunal concludes** that Niko is not liable under Section 73, first paragraph of the Contract Act for any increase in the arsenic content of the Tengratila drinking water that may have occurred following the first blowout. The loss and damage caused by such increase is remote and indirect and it is consequential and thus excluded by Section 73, second paragraph of the Contract Act and by Article 27.2 of the JVA, respectively.

10.4.4 Mr Wilson's projects of abatement and mitigation

567. The amount claimed by the Respondents for "monitoring, surveying and abatement" includes two claim items which are not part of the future monitoring and surveying programme that will be discussed below, but for concrete action to reduce the risk which, according to the Respondents, is caused by the continuing gas seepages which the Respondents attribute to the first blowout and for which they hold Niko liable.
568. The Respondents seek payment to "cover the abatement and mitigation of the explosion risk", as quantified by Mr Wilson.⁴⁸² Mr Wilson had noted that some of the villagers in Tengratila used the seeping gas as an "informal cooking gas supply system" causing "a significant risk of explosion to the residents in buildings".
569. The first project proposed by Mr Wilson is described as an "immediate short term measure" and consists in the "**provision of properly sealed gas pipes and valves** to all the stoves running off the gas from the ground".

⁴⁸² BMD, paragraph 379.

The costs for these supplies were estimated by Mr Wilson at GBP 3'000, corresponding to USD 4'235.⁴⁸³

570. The second project proposed by Mr Wilson consists in “**a soil vacuum extraction procedure** to ‘[r]emove the gas from the shallow ground below the buildings and open spaces’”. The Respondents explain that “Mr Wilson has estimated the cost of this [system], on the basis of his experience, at GBP 3,275,000. As of 23 March 2016, this value is USD 4,622,990”.⁴⁸⁴
571. Both claims rest upon the assumption that Niko is liable for the continuing seepages, an assumption that is disputed, as explained in Section 10.4.2.
572. The claims are furthermore not for costs and expenses which the Government or the Respondents have incurred in the past but for future costs; and they are, in the form presented in the arbitration, not for an abatement measure which the Government, at the central level or by the local authorities, has decided and is ready to implement, but rests at the level of a proposal by an expert to counsel in the arbitration.
573. The first project concerns a risk that does not arise directly from the seepages but from the decision of the villagers to use the seepages for cooking purposes. That may be an economically reasonable decision, drawing an advantage from the problem of the seepages. It is nevertheless an intervening event of the type that breaks the chain of causation for Niko’s liability.
574. Even assuming that Niko is liable for the continuing seepages and other conditions for ordering cost of future action were met, the Tribunal cannot accept the remedial action in the first project as a damage for which Niko is liable.
575. The second project is presented as an action to remedy some of the consequences of the allegedly continuing seepages. Assuming Niko were found to be liable for these seepages and advance payment for future remedial action could be ordered, the question would remain whether this is a suitable measure to prevent the effect of continuing seepages. A decision would require that the project proposed by Mr Wilson be seen in

⁴⁸³ BMD, paragraph 369, quoting from Wilson I, paragraph 5.9.2. (Emphasis added).

⁴⁸⁴ BMD, paragraph 374, quoting from Wilson I, paragraph 6.4.2.

the context of remedial action in general. The Tribunal therefore reserves its decision on the claim for this proposed project.

10.5 Is the Government entitled to claim for the recoverable environmental losses?

10.5.1 The issues

576. The Respondents do not claim for any environmental losses of BAPEX itself, but for the environmental losses of the Government.
577. In the Memorial on Damages, the Respondents maintained that “the environmental and human health damages claimed by the Government in the Money Suit are properly before the courts of Bangladesh and are outside the jurisdiction of this Tribunal”.⁴⁸⁵ They presented nevertheless a claim for the eventuality that “the Tribunal make a determination of the Government’s losses”.⁴⁸⁶
578. Further to the Tribunal’s Decision on Liability, the Respondents’ claim in the Amendment is presented without this qualification.⁴⁸⁷ BAPEX now claims under the JVA for the environmental losses for which the Government had filed the Money suit. The Claimant denies that the Government is entitled to any such claims.
579. The Tribunal therefore must determine whether the Government is entitled to claim for the environmental losses for which Niko is liable on account of the first blowout.
580. **The Claimant** asserts that “BAPEX does not identify any loss or damage that has been actually incurred by any of BAPEX, Petrobangla or the Government in the fifteen years since the blowouts”.⁴⁸⁸
581. The Claimant also states that the Respondents “point to no legal right to bring a subrogated or representative type of claim on behalf of individual

⁴⁸⁵ BMD, paragraph 364; in further detail at paragraphs 88 – 99.

⁴⁸⁶ BMD, paragraph 400(h).

⁴⁸⁷ Amendment, paragraph 99(c).

⁴⁸⁸ CMD, paragraph 121.

residents or property owners and they fail to identify any duty to account to the local population for any damages received”.⁴⁸⁹

582. At the Hearing the Claimant argued what it considered the “critical legal deficiencies with this claim” and stated:

*The first such deficiency is that each and every issue cited within this claim is for damages suffered by third parties to this Arbitration. Notwithstanding this, BAPEX has failed to offer any indication as to the legal basis under which either it or the Government may claim for these alleged losses. We are now over 15 years from the date of the Chattak 2 blowout. There's a great deal of hyperbole around some of these alleged issues, but there is no articulated legal basis for the Claim.*⁴⁹⁰

583. In preparation of the Hearing the Tribunal had addressed to the Respondents the following question:

*Indicate for each specific loss in this category whether BAPEX, Petrobangla or the Government had any expenses or made any payments on account of the losses for which they now claim and, if so, to whom and how much? With respect to claims for which no such expenses or payments occurred, is there a programme to make such payments and specify the grounds on which the loss is now claimed in the arbitration.*⁴⁹¹

584. At the Hearing **the Respondents'** counsel explained that he had not had a chance to consult with the Government agencies about such expenditures.⁴⁹² The Tribunal notes that there is no information in the record that the Government has made any payments on account of the environmental losses for which BAPEX claims in the arbitrations. In response to a similar question concerning the claim for monitoring,⁴⁹³ the Respondents explained that “the Government has not yet incurred any costs in this category” and stressed that the Government had limited resources.⁴⁹⁴

⁴⁸⁹ CMD, paragraph 137.

⁴⁹⁰ HT (Day 1), page 181.

⁴⁹¹ Questions for the November 2020 Hearing, question 17.

⁴⁹² HT (Day 1), pages 88 and 89.

⁴⁹³ See below Section 10.6.

⁴⁹⁴ HT (Day 1), page 79.

585. The Respondents invoke an obligation of the Government to make compensation payments to the local population. Asked whether such an obligation would not have arisen in 2005 or the years thereafter, the Respondents replied:

*Yes. But Niko is responsible under the JVA for compensating for environmental harm. It's an obligation under the JVA, either owed to the Government or to BAPEX. But the Government or BAPEX didn't make the payments, or wouldn't be obligated to make the payments, doesn't relieve Niko of its obligation to do so.*⁴⁹⁵

586. In the circumstances **the Tribunal** has no basis to believe that any of the claims in relation to the Third Head of Loss are for the reimbursement of costs and expenses actually paid by the Government or the Respondents. That leaves other possible grounds for the Respondents' claims.

587. Turning to such other grounds on which the Government may have claims which BAPEX may bring in this arbitration, the Tribunal has considered the nature of the claims made and the related argument, and identified three categories of such claims:

- (i) Some claims, like that of atmospheric pollution, may concern the State directly and the Government might claim on this basis;
- (ii) Other claims may relate to required remedial action, like the construction of a distant well for clean water and a pipeline to the village, as recommended in the Third Environmental Losses Report; and
- (iii) A third category relates to loss and damage suffered by individuals, where the Government intervenes to ensure that its citizens are compensated for loss suffered.

588. The Tribunal will consider these three categories separately.

10.5.2 Loss concerning the State as such

589. The **Respondents** point out that the JVA specifically placed a responsibility on Niko for the protection of the environment. They quote in

⁴⁹⁵ HT (Day 1), page 93.

particular a passage from Article 27.1 of the JVA which requires Niko to take “all necessary precautions to prevent pollution of or damage to the environment”.⁴⁹⁶ They also mention that Article 27.3 of the JVA requires Niko to abide by laws and regulations and mentions specifically “environmental protection” and standards and practices “for the prevention of pollution of the air, water, land and ecology”.

590. The Respondents also invoke Niko’s obligation to control and mitigate environmental pollution under the Bangladesh Environmental Conservation Act.

591. According to the Respondents, the Government has a legal interest to claim for damages to natural resources:

*... the Government of Bangladesh is the owner of all mineral and other natural resources like forests, plants, water resources, including groundwater, in accordance with Article 143 of the constitution of the Republic of Bangladesh, so any injury to those is compensable to the Government.*⁴⁹⁷

592. The Respondents also point to the Government’s obligation “to protect the health and longevity of the people in the country of Bangladesh under Articles 31 and 32 of the constitution”. They assert that

*... under these provisions, the Government has a legal right to bring claims against third parties whose actions cause or threatened to pose any justified threat to the health or longevity of people. In addition, it has a public health system which needs to pay for the health care of individuals who might be harmed by an event like the blowouts.*⁴⁹⁸

593. **The Claimant** relies essentially on the argument that the losses claimed by the Respondents were losses by third parties for which the Government was not entitled to claim. The Tribunal has raised specific questions to the Claimant in this respect:

How far does this third-party point really take us?

... take the example of atmospheric pollution caused by the release of the gas. What do you say about that? Is that not a loss of BAPEX or

⁴⁹⁶ HT (Day 2), page 369.

⁴⁹⁷ HT (Day 2), page 370.

⁴⁹⁸ HT (Day 2), page 370 and 371.

its assignors in general rather than a loss degradation of the atmospheric environment caused by the release of the gas as opposed to a specific loss suffered by individual villagers?

[...]

The reason for the example was to test the proposition that all of these losses can be reduced, as it were, to losses suffered only by third parties and not by the Respondents because that would result in us finding that a general degradation of the environment in this part of Bangladesh is not something which BAPEX as assignee of the Government is entitled to claim for because that general degradation is nothing more than the sum of the individual damage suffered by the individual villagers. And I want to hear what you have to say about that because that seems to me a difficult proposition.⁴⁹⁹

594. The Claimant responded by stating that the Government had not proven their entitlement to the loss. Specifically, with respect to the Government's international obligations concerning greenhouse gas emissions, the Claimant submits that the Government had no such obligations since Bangladesh had not acceded to the relevant convention.⁵⁰⁰ The Claimant concluded:

In this case, what we need to look at are the liability restrictions put in place by Section 27.2 of the JVA and by the Contract Act, and for those claims that are preceding [recte: proceeding?] under the JVA, there must be some amount owing to some entity. And that is what is missing in this case, is BAPEX or the Government bringing forward any evidence of why they are entitled to claim for these specific losses.⁵⁰¹

595. The Claimant also relies on Article 20.1 and 20.2 of the JVA, to which it referred as a "knock-for-knock" provision, "extremely common in the oil and gas industry". It paraphrases this provision by stating: "each Party bears the consequences to their own property and personnel in connection with the common venture". The Claimant draws the following conclusions from this provision:

⁴⁹⁹ HT (Day 1), pages 187 and 188.

⁵⁰⁰ HT (Day 1), page 189.

⁵⁰¹ HT (Day 1), page 190.

... if the environmental loss is claimed as damage to the physical site, the diminution in value or damage to the physical site, that would be BAPEX's facilities having regard to the complete assignment of rights, so BAPEX in this instance, standing in the shoes of all Government stakeholders, then the damage would be BAPEX's to bear and it cannot claim against Niko in respect of such damage.⁵⁰²

596. When the Government granted to Niko the right to develop and exploit two gas fields, It did so in the **Tribunal**'s understanding not simply as a private landowner but in its governmental function under the Constitution and the Petroleum Act. This function is specifically pointed out in the preamble to the JVA:

All mineral resources including Petroleum within the territory, continental shelf and economic zone of Bangladesh are vested in the People's Republic of Bangladesh; and

The Government has, under the Bangladesh Petroleum Act, 1974 (Act No LXIX of 1974) (as amended up to date) the exclusive right and authority to explore, develop, exploit, produce, process, refine and market Petroleum Resources within the territory, continental shelf and economic zone of Bangladesh and it has also the exclusive right to enter into Petroleum Agreements with any persons for the purpose of any Petroleum Operations ...⁵⁰³

597. It is in this public function that the Government declared the Chattak and the Feni field as “marginal/abandoned” and authorized their development and production, assigning the relevant “responsibilities and obligations” to BAPEX. The fact that the implementation of this assignment took place in the form of a contract between BAPEX and Niko did not change the context and did not remove the relevance of the public functions. Quite to the contrary, the quoted passages from the Preamble of the JVA confirmed them.

598. As the Respondents have rightly pointed out, the JVA makes it clear that, in its contract with BAPEX, Niko assumed responsibilities in relation to these public functions of the Government included in the assignment to BAPEX. The JVA expressly spells out Niko's obligations with respect to “protection of environment” and “prevention of pollution”. Considering the

⁵⁰² HT (Day 2), pages 395 and 396.

⁵⁰³ JVA, Exhibit C-1, Whereas Clauses 1 and 2.

Government's assignment to BAPEX and its approval of the JVA, the Tribunal sees in this provision a reflection of the Government's general responsibility for the environment and the protection against pollution and the acceptance by Niko of obligations in this respect.

599. The JVA thus recognizes the protection of the environment as a direct concern and interest of the Government. A breach of the JVA which affects this interest and causes damage to the environment falls in the ambit of the JVA and creates liability like any other damage resulting directly from such a breach. The Government is therefore entitled to claim for such damage. As the Tribunal has decided in its previous decisions, it must do so in the context of the JVA, including the provisions in this agreement about the limitation of liability.
600. **In conclusion**, the Government may claim for damage to the environment, just as it may claim, on different grounds explained above in Sections 8.4.4, for the gas lost as a result of the Chattak 2 blowout. Such claims must be presented within the framework of the JVA and by BAPEX as the Government's assignee.
601. The claim here is in respect of the Government's general responsibility for the environment. The "knock-for-knock" provision of Articles 20.1 and 20.2 of the JVA, on which the Claimant relies as a defence, regulates loss to "BAPEX facilities" and to "property of any third party". It relates to the "narrow notion of BAPEX's facilities in the operating area of the JVA".⁵⁰⁴ This is a different issue. It does not include the environment and, in the JVA, the Government is not a third party.

10.5.3 Claims for remedial action

602. At several occasions, the Parties have referred to action that had been taken, could have been taken in the past or is proposed for the future with the objective of remediating damage or avoiding its aggravation. Examples that were given for such action, taken or proposed, concerned the construction of new school buildings, the construction of a distant well with a pipeline to bring clean water to the village, the claim for measures to "abate, mitigate and monitor explosion risks" or the mitigation of any

⁵⁰⁴ Claimant at HT (Day 2), page 406.

gas seepages by the production from the Chattak field through a production well.

603. The Claimant has insisted on the duty to mitigate losses which English and Bangladeshi law places on a claimant. In the context of the environmental claims the question arises whether the public responsibilities of the Government imply an obligation to take protective or remedial action.
604. As mentioned above, the Respondents relied on the Government's responsibility under the Constitution for the protection of the health of the people. In view of the considerations in the previous section, the Tribunal has no difficulty to accept that, if the Government has taken such action to mitigate damage caused by Niko, it can claim for reimbursement of the related expenses.
605. The question arises, however, what conclusion must be drawn in case the need for protective and remedial action arose and no action was taken by the Government. The Claimant raised the question in the context of the Respondents' claim for monitoring; from the fact that the Government had not put into place the monitoring programme which it described as indispensable, the Claimant concludes that "such additional monitoring was not necessary for reasons of public health or environmental safety".⁵⁰⁵ It stated at the Hearing in this context: "[i]f there was a duty or obligation that compelled this type of expenses from BAPEX or the Government, such costs [...] would have been incurred by now, more than 15 years after the blowouts".⁵⁰⁶
606. In response to the Tribunal's question whether any of the claimed expenses for monitoring had been incurred already,⁵⁰⁷ the Respondents referred to "limited resources" of the Government and Niko's obligation.⁵⁰⁸
607. **The Tribunal** is of the view that this question cannot be answered in the abstract. The Tribunal is aware of the limited resources of the Government and understands that the available resources may not be sufficient to pay

⁵⁰⁵ CMD, paragraph 125.

⁵⁰⁶ HT (Day 1), page 192.

⁵⁰⁷ Questions for the November 2020 Hearing, question 20.

⁵⁰⁸ HT (Day 1), page 79.

for all actions of some importance; a choice must be made. The allocation of funds to Governmental action obviously is a matter of setting priorities.

608. The Tribunal will have to consider in each case what conclusions must be drawn from the Government's decision to take or not to take any remedial or mitigating action, taking into consideration the specific situation of the Government that, in this respect, differ from those of a private claimant.

10.5.4 Claims for individuals having suffered losses

609. **The Respondents** emphasise specifically the Government's responsibility for the protection of public health.⁵⁰⁹ They refer to the EIA Report dated June 2004 which Niko prepared and submitted in the name of the BAPEX/Niko Joint Venture to the Department of Environment. It contains a section dealing with "Accident/Disaster" and describes specifically the different possible impacts of a blowout. The report contains repeated commitments to clean-up to baseline conditions and payment of "appropriate compensation to the legitimate owners and affected people and/or their family following standard procedure of the Government of Bangladesh and Canada".⁵¹⁰
610. The Respondents also refer to the activity of the Governmental Committees to assess all environmental and local losses. In the work of these committees the losses suffered by individuals played a particularly important role.
611. **The Claimant** argues that the "entirety of these losses claimed [in the six categories, as presented at the Hearing] are not losses of BAPEX and the Government, and on that basis they fail in law and do not need to proceed".⁵¹¹
612. **The Tribunal** observes that in Article 27.1 of the JVA, quoted above in Section 7.1, Niko assumed express responsibility for "conservation, safety of life, property, crops, fishing and fisheries, navigation, protection of environment", listing many details of this responsibility.
613. When implementing the JVA, Niko submitted an EIA to the Department of Environment that contained express commitments, in case of a blowout,

⁵⁰⁹ HT (Day 2), page 370.

⁵¹⁰ EIA Report, Exhibit R-72, Section 7.3.5, pages 73 – 80, referred to at BMD, paragraph 331.

⁵¹¹ HT (Day 1), page 186.

to pay compensation to the affected population. When the blowouts did occur, as described above in Section 10.3.1, the Government took an active role, through the Ministry of Power, Energy and Mineral Resources and the Ministry of Environment and Forestry and through various authorities at the local and regional level, in the assessment of the damage caused by the two blowouts and the distribution of compensation paid by Niko to the affected population. The Deputy Commissioner Sunamganj chaired the Local Losses Committee. With the assistance of several concerned officers of the Doarabazar Sub-district, the UP Chairman concerned and the Sub-district Executive Officer, that Committee gathered information about the families, businesses and others affected by the blowouts, prepared detailed lists indicating the loss of each of them and organised the distribution.

614. The compensation to the persons so identified was agreed with Niko and paid by it. It was then distributed, as described above, by the local authorities; this included the following example:

*The Deputy Commissioner, with assistance of the Upazila Nirbahi Officer, other Upazila Officers, and the UP Chairman concerned and in presence of the honorable Member of Parliament, distributed a total of BDT 3,080,000/- amongst the 616 families at the rate of BDT 5,000/- for each family which was paid by NIKO.*⁵¹²

615. The Local Losses Report also shows the close involvement of Niko in the process and its participation in the assessment of the compensation to the local population and institutions.
616. The Tribunal sees in this report and Niko's involvement in its preparation and implementation, as well as, more generally, in the work of the Environmental Losses Committees, clear evidence of the active role played by the Government, at the Ministerial level and through local authorities, in the assessment of the losses suffered by the individuals affected, in the collection of the compensation from Niko and the distribution to the individuals concerned. These activities are legitimate governmental action; the legitimacy of this action is uncontested by Niko.
617. **The Tribunal concludes** that the Government is entitled to act for the individuals who have suffered loss from the blowouts, provided it proceeds

⁵¹² Local Losses Report, Exhibit Annex R-3(bis), paragraph 5.

along the lines that were adopted in the compensation to the local population, as described in the reports presented in these proceedings.

10.6 The Claim concerning monitoring and surveying and the related procedural requests

10.6.1 The claim and the Parties' positions in general

618. **The Respondents** assert that Niko did not comply with its contractual requirements concerning environmental impact assessment and monitoring,⁵¹³ that it failed “to generate adequate baseline and monitoring data”⁵¹⁴ and that BAPEX intends to commission work from its experts in order “to determine the full extent of direct environmental losses”. They explain that “BAPEX laid out the costs associated with conducting a more robust assessment of the environmental and health damages in Tengratila, as well as a mitigation programme recommended by BAPEX’s gas emission expert”.⁵¹⁵ The total claim for the expenses of monitoring, surveying and abatement amounts to between USD 8’461’463 and USD 8’642’493.⁵¹⁶
619. The proposed mitigation action concerning the explosion risk identified by Mr Wilson has been addressed above in Section 10.4.4.
620. The monitoring and surveying costs are claimed for a number of different proposed actions, as presented by the Respondents in the Memorial on Damages of 25 March 2016:
- (i) a gas emission monitoring system, proposed by Mr Wilson costing between USD 465’861 and USD 611’223, depending on the system used;⁵¹⁷
 - (ii) a medium-term gas monitoring programme, also proposed by Mr Wilson, costing USD 554’759;⁵¹⁸

⁵¹³ BMD, section VII(B).

⁵¹⁴ Amendment, paragraph 79.

⁵¹⁵ Amendment, paragraph 80.

⁵¹⁶ Amendment, paragraph 99(c), identical to BMD, paragraph 400(h); details about the make-up of this amount in BMD, paragraphs 368 – 379.

⁵¹⁷ BMD, paragraphs 370 – 371.

⁵¹⁸ BMD, paragraphs 272 – 273.

- (iii) an in-depth health survey proposed by BAPEX’s environmental damages experts “to understand and identify the cause of the health problems they observed in Tengratila”: USD 24’687;
- (iv) an air quality monitoring programme over three years to “assess whether [emissions] are contributing to [...] respiratory problems’ observed by the experts”: USD 783’549;
- (v) a three-year drinking water survey of all sources used in dwellings “to adequately understand the scope of arsenic contamination as well as to alert to the presence of other parameters of concern”: USD 786’372;
- (vi) an “environmental survey extending 5 kilometers from the site of the blowouts [to] enable the experts to clearly understand the impact on plant and animal life in the area”: between USD 40,000 and USD 43’000;
- (vii) a “survey of the numbers and health status of trees in the village area [...] along the status of non-rice crops and growing areas’ [to] give a clearer picture of the current agricultural harms”: USD 6’000;
- (viii) a “chemical analysis of surface water taking soil samples, and testing for gas emissions from soil”: USD 626’839;
- (ix) a “long-term survey of the fish ponds”: USD 409’422.
- (x) for the professional fees of the Respondents’ environmental experts to “design, implement and report the results of these surveys”: between USD 141’000 and USD 169’416.⁵¹⁹

621. In the Amendment of 7 September 2020, the Respondents confirmed their request for these amounts⁵²⁰ and stated: “These costs constitute direct loss to BAPEX which arose directly from Niko’s breach”.⁵²¹ The Respondents did not explain how the proposed monitoring and surveyance related to the prior assessment of the environmental losses or how it was expected to affect this assessment.

⁵¹⁹ All quotes and quotations are from BMD, paragraph 377.

⁵²⁰ Amendment, paragraph 99(c).

⁵²¹ Amendment, paragraph 80.

622. With their submission of 15 April 2021, the Respondents produced a document entitled “Tengratila Work Programme – Update” by a company named “Delphic HSE Solutions Ltd” and signed by Mr C.I. Betton. The document states that “Delphic HSE is planning to start the Study in November 2021” and reports on the “significant risks to the Study [that] have been identified primarily related to COVID-19”. It also states: “Teams from Delphic HSE are preparing the detailed plan for the activation, conduct, testing and report of the Study”.
623. The 15 April 2021 submission does not contain any modification to the Respondents’ monitoring and surveying claim. The Tribunal, therefore, addresses this claim on the basis of the Respondents’ prior submissions.
624. **The Claimant** denies that it had failed in its obligations concerning environmental impact assessment and environmental monitoring. It points out that, prior to the Respondents’ submission in 2016, there had been no complaint about such a failure. If Niko’s monitoring had been insufficient, then “BAPEX or the Government would have put such monitoring into place”.
625. The Claimant contested that a “party is entitled to postulate that damages may have occurred as a result of a wrong, and demand that the other side cover the costs of trying to prove it ...”.⁵²² It also contested generally the entitlement to compensation for future costs as well as the quantification of the claim.⁵²³ The Claimant also asserted that the claim for the monitoring programme is barred by estoppel, waiver and/or acquiescence.⁵²⁴
626. Before the Hearing, the **Tribunal** summarised the Parties’ positions on these issues and addressed the following **questions** to the Respondents:
19. *Is the claim presented as a direct loss caused by the blowout or as claim for breach of Niko’s contractual monitoring obligations? In the former case, how is the link established between the blowout and the claimed future expenses; in the latter case, how do the Respondents contend that this claim is admissible in light of the Decision on Liability?*

⁵²² CMD, paragraphs 125 – 127.

⁵²³ CMD, paragraphs 128 – 136.

⁵²⁴ CMD, paragraphs 140 – 159.

20. *Have any of the claimed expenses been incurred already and, if so, how much?*

21. *What is the basis for claiming any future expenses?*

22. *What is the Respondents' position concerning the Claimant's objections mentioned above?*

627. At the Hearing **the Respondents** confirmed this programme and referred to the passages in the expert reports where the programme was described in further detail.⁵²⁵

628. Concerning the basis of the claim, the Respondents stated that Niko had the obligation to perform the post-blowout monitoring. As it failed to do so appropriately, the burden fell on the Government. That burden “is a direct result of the blowout” and the related costs are “part of the damages that result directly from the blowout”.

629. In response to Question 19, the Respondents clarified:

*BAPEX's claim for the costs of monitoring is a claim for direct loss caused by the blowout, not a claim for a breach of Niko's monitoring obligations.*⁵²⁶

630. Concerning the costs, the Respondents stated:

... the Government has limited resources and expects Niko, the operator, to pay for the monitoring that was required as a result of Niko's failure to properly do it in the first place. It is not -- the Government has not yet incurred any costs in this category”.⁵²⁷

631. The Respondents had raised a similar point in the BMD, where they wrote that “Bangladesh's capacity issues are especially pronounced in the area of environmental monitoring, oversight and enforcement” and “[w]hen Niko began work on the Chattak project in 2003, in [recte: it?] entered a situation in which the government's capacity to oversee its operations, monitor impacts and remedy damages caused was severely limited”.⁵²⁸

⁵²⁵ HT (Day 1), pages 85 and 86 and (Day 2), page 375.

⁵²⁶ HT (Day 1), page 78 and 79.

⁵²⁷ HT (Day 1), page 79.

⁵²⁸ BMD, paragraphs 105 and 107.

632. In response to one of the Claimant’s objections, the Respondents stated:

*The fact that the Government has decided not to put budget resources to something that Niko should have paid for is not an argument that this doesn’t need to be done or that Niko is relieved of its obligation to pay for it.*⁵²⁹

633. The Respondents also addressed the Claimant’s arguments concerning estoppel, waiver and/or acquiescence. In this context, the Respondents asserted that BAPEX or the Government could not raise the complaints about the alleged deficiencies in Niko’s monitoring earlier, because these deficiencies had not been discovered:

*... they discovered the depth of Niko’s failures only upon the engagement of Experts on Environmental Impact Assessments, who actually had the skill and the ability to go forward and assess Niko’s monitoring program. So, as soon as this came to their attention, it has been raised with Niko in the course of these proceedings.*⁵³⁰

634. **The Claimant** argues that the claim must fail “as a matter of legal principle”, as it was not for “any loss in existence”; and there was no “public health need for monitoring, surveying and abatement” otherwise the costs would have been incurred by now.⁵³¹

635. Considering these positions, **the Tribunal** notes that the Respondents’ claim for monitoring and surveying in fact consists of two requests that the Respondents had linked but which, in the Tribunal’s view must be addressed separately: by one request the Respondents seek a decision that orders the Claimant to pay the costs in advance of the performance of the monitoring and surveying, the other request seeks an order that the proceedings be suspended until the experts have completed their work.

10.6.2 The claim for advance payment by Niko

636. When **the Respondents** in the Memorial on Damages presented the new approach to the quantification of the Government’s losses for which BAPEX claims in this arbitration, they stated that the values calculated in the Third Environmental Losses Report “must be supplemented due to

⁵²⁹ HT (Day 1), page 80.

⁵³⁰ HT (Day 1), pages 83 and 84.

⁵³¹ HT (Day 1), pages 191 and 192.

continuing harm continuing over the past decade”. They sought that Niko be ordered to pay the monitoring and surveying costs, before its liability for the environmental harm had been established. In the programme they proposed at the Hearing, the Respondents seek an order for payment in a decision following the planned August 2021 hearing; only thereafter would they present their position on the quantification of the environmental losses.⁵³²

637. While they insisted on Niko’s failure to provide adequate baseline information and compliant monitoring, the Respondents made it clear that their claim for the monitoring and surveying costs is not for an alleged breach of these obligations⁵³³ but part of the environmental loss for which Niko is liable.
638. **The Claimant’s** objection, as mentioned, concerns the future nature of the claimed costs: The claim was not for a loss already incurred but for future costs which the Claimant described as “optional costs”. For the Claimant this claim “is nothing more than an attempt to obtain prepayment from Niko for BAPEX’s Experts to try and gin up the Claim for environmental losses that is so obviously lacking here.”⁵³⁴
639. **The Tribunal** has considered the nature of the claim for the costs of the monitoring and surveying programme. The costs of such a programme are not a loss that flows directly from Niko’s breach. From the information provided it appears that these costs have not been incurred yet. In the Memorial on Damages, BAPEX presents the programme which its “environmental damage experts have recommended” and the costs and fees proposed for this programme.⁵³⁵ The quantifications by different experts presented in support of the claim are estimates or proposals, not agreed amounts.⁵³⁶
640. The Respondents did not explain whether and at what conditions these experts were actually engaged by the Government or the Respondents. Subsequent submissions, including the letter of 15 April 2021, do not

⁵³² HT (Day 2), pages 306 – 308 and Proposed procedural schedule on slide 40 of the Respondents’ Presentation, 20 November 2021.

⁵³³ HT (Day 1), page 78 and 79, quoted above.

⁵³⁴ HT (Day 1), pages 192 and 193.

⁵³⁵ BMD, paragraph 377.

⁵³⁶ See BMD, paragraph 377 and the documents referred there.

provide such information. The amount claimed by the Respondents for the advance payment thus remains unsupported.

641. In response to the Tribunal's question concerning the legal basis of the claim for future expenses, the Respondents explained⁵³⁷

*BAPEX's environmental Damage Experts have recommended the institution of a monitoring and survey program that would accurately identify and document the scope of environmental and human health damages caused by the blowouts to the full extent possible, in light of Niko's failure to establish baselines and properly monitor over the past 11 years.*⁵³⁸

642. As quoted above, the Respondents have also clarified that their claim was not for breach of Niko's monitoring obligation but for "direct loss caused by the blowout".⁵³⁹

643. Considering these explanations and those made at other occasions, the Tribunal notes that the monitoring activity which, in the Respondents' submission had to be performed by Niko and which the new monitoring programme is intended to replace, would have constituted a way of determining the loss but not the loss itself. Even if it could be considered as part of the loss, it became necessary, according to the Respondents, only some eleven years after the blowouts, when the newly engaged experts discovered the alleged insufficiencies in Niko's monitoring.

644. In view of these considerations the Tribunal does not believe that the proposed costs which the Respondents or the Government may engage in the future can be considered as a loss or damage that "naturally arose in the usual course of things" from Niko's breach.

645. The Tribunal has also considered the claim for the costs of the monitoring programme as costs for the preparation of the claim and its quantification. In that context, the Tribunal considers that in principle it is for the party claiming from another party the compensation of a loss to establish and prove that loss. Once the liability for a certain damage has been established it is not excluded that the costs engaged for establishing this damage may

⁵³⁷ Question 21 of the Tribunal's Questions for the November 2020 Hearing, quoted above in Section 10.6.1.

⁵³⁸ HT (Day 1), page 85.

⁵³⁹ HT (Day 1), page 78.

be claimed. The Tribunal does not exclude that, under certain circumstances, the party liable for another party's losses may have to participate in establishing and assessing the losses which it must repair; that may include an obligation of the liable party to advance some or all costs for establishing the losses.

646. In the present case, the Tribunal has decided that Niko is liable for the direct loss and damage caused by the first blowout; and it is uncontested, as explained above, that the first blowout caused at least some direct environmental damage.
647. The loss and damage caused by the blowouts have been assessed by several committees on the central and the local level, as described in Section 10.2.1. In particular, the Third Environmental Losses Committee in its report of 15 September 2005 identified the short-term and long-term losses, identified mitigation measures and quantified the losses.
648. The Respondents have confirmed that the values determined in this report were "determined on the basis of the government committee- members' intimate knowledge of the local market and types of interventions that would be required to mitigate or compensate for the harms". More than ten years later, they reserved the possibility to supplement these values "due to continuing harm occurring over the past decade" and stated that such supplement could not be determined "until after the monitoring program is completed".⁵⁴⁰
649. In view of these circumstances, one could have expected that any monitoring required for supplementing the assessment of 2005, to the extent Niko's monitoring reports were found not to be sufficient, could have been organised by the same or a similarly qualified committee and that any supplement to this assessment would have been prepared by members with an equally intimate knowledge of the local market and types of intervention. Indeed, the First Environmental Losses Committee had expressly pointed to the possibility of adding other specialists to its work:

⁵⁴⁰ BMD, paragraph 387.

*This Committee can estimate the losses by co-opting competent representative from the local administration and concerned department of field level.*⁵⁴¹

650. The Respondents have not explained why any monitoring and surveying that may have been necessary after the assessment in 2005 could not proceed in the same manner and by the members of the Governmental Committees or similarly qualified experts.
651. In these circumstances, the Tribunal sees no justification to order the Claimant to pay, in advance of any monitoring and surveying costs engaged by the Respondents or the Government, the amounts requested by the Respondents. **The claim for an advance payment on account of monitoring and surveying costs must be dismissed.**

10.6.3 The Claim for the suspension of the procedure

652. The procedure concerning the Compensation Declaration was settled after consultation with the Parties by Procedural Order No 3 of 15 November 2013. At the request of the Respondents this procedure was modified in 2015 and a new timetable was agreed at the end of the November 2015 Hearing. The modified procedure provided additional time for the Respondents to present the quantification of the losses resulting from the blowouts.
653. When they presented their Memorial on Damages on 25 March 2016, **the Respondents** sought a further modification and requested

*...to hold this proceeding open until such time as a complete survey and monitoring of the Tengratila area can be conducted and BAPEX can provide the fullest possible accounting of environmental and health related Losses.*⁵⁴²

654. Over four years later, in the Amendment of 7 September 2020, the Respondents made the same request.⁵⁴³

⁵⁴¹ First Environmental Losses Report, Exhibit Annex R-1, quoted from the translation attached to Second Environmental Losses Committee, Exhibit Annex R-2(bis).

⁵⁴² BMD, paragraph 400(h).

⁵⁴³ Amendment, paragraph 99(c).

655. After the Decision on Liability, in the Amendment, the Respondents explained the requested modification of the agreed procedure by “fundamental changes in circumstances since the Parties’ agreement on the November 2015 procedural schedule ...”:⁵⁴⁴ BAPEX learned only when working with its experts in preparation of its Memorial on Damages of 25 March 2016 that “as a result of Niko’s failure to comply with its obligations to monitor and remediate environmental damages, it is now impossible to determine the extent of the environmental and health harm caused by the blowouts without further extensive monitoring and evaluation”. The Respondents continued by stating that in view of the complexity of the issues a single round of submissions was not sufficient; BAPEX’s experts will need “the opportunity to respond to Niko’s experts on the technical issues regarding the Tribunal’s limitation of Niko’s liability ...”.⁵⁴⁵
656. The Respondents had made a similar request in their letter of 11 March 2020, in which they explained that their experts required 36 months to complete fully their assessment of the environmental damage but that, further to a request for acceleration by BAPEX, they indicated that “the fastest this work could be completed is nine months”.
657. In response to the explanations in this letter, the Tribunal adopted in Procedural Order No 24 of 3 April 2020 a sequence and timetable in which the Respondents, after adjustment of the dates, had (i) five months for an Amendment of the Memorial on Damages, (ii) the opportunity of a written pre-hearing submission and (iii) oral argument at the Hearing. In Procedural Order No 24 the Tribunal had also reserved the possibility of further argument and evidence in a second exchange of memorials after the November 2020 Hearing and before the Evidentiary Hearing which, at that time, was scheduled for July 2021 and is scheduled for 9 to 20 August 2021.
658. **The Claimant** had objected to the modification requested by the Respondents on 11 March 2020 and requested that the approach adopted in November 2015 be respected.⁵⁴⁶
659. The **Tribunal’s Questions** for the November 2020 Hearing, contained the following two questions:

⁵⁴⁴ Amendment, paragraphs 91 – 98, specifically paragraph 95.

⁵⁴⁵ Amendment, paragraphs 96 – 98.

⁵⁴⁶ Procedural Order No 24, paragraph 3.

32. *By organizing the procedure as they did in Procedural Order No 24, the Tribunals were of the view that they had responded to the concerns expressed by the Respondents in their letter of 11 March 2020. Why do the Respondents now consider the sequence and timetable in Procedural Order No 24 not sufficient to meet their concerns?*
33. *If the Respondents continue to seek an adjustment to the procedure, what do they suggest?*

660. **At the Hearing the Respondents** explained that, in their view, Procedural Order No 24 “didn’t fully resolve all of the procedural issues”. They referred in particular to the Claimant’s arguments and evidence in its Counter-Memorial on Damages and what the Respondents perceived as the need for further submissions:

BAPEX must have an opportunity to address in writing the overarching issue of fact that Niko denies, issues of fact, which is whether all the damage and loss claimed by Niko [recte: BAPEX?] is attributable to the Chattak 2 blowout alone. This issue is a cornerstone technical issue of fact that is beyond the scope of this hearing, and certainly requires written -- further written argument by the parties.⁵⁴⁷

661. Concerning the monitoring, the Tribunal asked whether any monitoring by the new environmental experts had taken place:⁵⁴⁸

... what have the Respondents done--well, since 2016 or since they learned that further monitoring was necessary, and since their Expert prepared a monitoring program, what have they done, first of all, to implement this program ...⁵⁴⁹

662. The Respondents replied:

Except for the visit of about a week prior to the submission of BAPEX's Memorial on Damages, which was an initial visit, which would have been part of a monitoring program, but it was an initial visit. So, only

⁵⁴⁷ HT (Day 2), pages 291 and 294.

⁵⁴⁸ HT (Day 1), page 90.

⁵⁴⁹ HT (Day 2), pages 303 and 304.

*what was able to be done there, which obviously wasn't real monitoring, but an initial assessment of the situation.*⁵⁵⁰

663. The Respondents confirmed that “there has not been field work evaluation since 2016”.⁵⁵¹ They added that, since March 2020, “once the COVID situation became such that [the experts] couldn’t travel and nothing could be done on the ground in Bangladesh there was nothing they could do to significantly advance the time other than to be ready to go as soon as the pandemic allows”.⁵⁵² The Respondents explained that, the environmental experts must go to the site. Their work is “almost exclusively work that must be done on-site, and then analysis done after that”.⁵⁵³
664. The Tribunal asked: “Why is it not possible for the Experts to give instructions or directions to these many Qualified People in Bangladesh to get the information they need? [...] especially after what we have seen in the file of the very detailed work that the Bangladeshi Experts have done themselves”.⁵⁵⁴ The Respondents replied:

The original plan of the Experts was to travel to Bangladesh to put the program in place because they need to supervise it on-site, and then work with local experts and vendors to carry out the monitoring so that they wouldn't have to be there on a permanent basis but could return, as necessary, to manage the program as the Experts who were putting into place.

*The issue with that is that local experts and vendors in Bangladesh have faced and continue to face the very same problem; that is, the outbreak of COVID-19 in Bangladesh, since our letter of March 11 ...*⁵⁵⁵

665. As to the future of the monitoring by the experts, the Respondents explained that, during the first half of 2021 they would be unable to travel to Bangladesh because of the pandemic. From June to October 2021 “it is mainly the monsoon season when it would be difficult or impossible to undertake [the monitoring] work”. Subject to further delay due to

⁵⁵⁰ HT (Day 1), page 90.

⁵⁵¹ HT (Day 2), page 303.

⁵⁵² HT (Day 2), page 305.

⁵⁵³ HT (Day 1), page 203.

⁵⁵⁴ HT (Day 1), page 204.

⁵⁵⁵ HT (Day 2), page 302.

restrictions related to the pandemic, “the experts could go back to Tengratila in November 2021”.⁵⁵⁶

666. Further to the Tribunal’s question 33, the Respondents presented a Proposed Procedural Schedule for Quantification of Recoverable Claims. In the part concerning the procedure on the claim for environmental losses, this schedule took the following shape:

9-20 August 2021	Hearing on the Quantification of Damages under Heads of Damage 1 and 2
After 20 August 2021	Decision on the Quantification of Damages under Heads of Damage 1 and 2 and Order Requiring Payment of Monitoring Costs Arising Out of Head of Damage 3
9 months from when the World Health Organization declares the pandemic over	Respondent’s Reply on the Quantification of Head of Damage 3
9 months following Respondent’s Reply on the Quantification of Head of Damage 3	Claimant’s Rejoinder on the Quantification of Head of Damage 3
No sooner than 3 months following Claimant’s Rejoinder on Head of Damage 3	Hearing on the Quantification of Head of Damage 3
	Final Award

667. The Respondents proposed an alternative, repeating what they had proposed already in the Amendment, as quoted above:

*Alternatively, to delay in proceedings until that is done, the Tribunal could issue a Decision on currently quantifiable damages and retain jurisdiction to determine the full scope of environmental damages documented by a future survey and monitoring program.*⁵⁵⁷

668. In their submission of 15 April 2021, the Respondents announced, as they had done at the November 2020 Hearing, that their experts “plan to carry out their study in Tengratila starting November 2021”. The note attached to that submission by Delphic HSE states that it “is planning to start the Study in November 2021”. Neither the submission nor the note of Delphic HSE indicates the duration of “the Study”. The note also cautions that the commencement of “the Study” is subject to “significant risks [...] primarily related to COVID 19”.

669. **The Claimant** strongly objected to the Respondents’ proposed procedure concerning the claim for environmental losses and the suspension of the procedure to await the outcome of the new monitoring programme, as it had objected on earlier occasions.

The Tribunal should see the schedule for what it is, a continuation of Respondents’ attempt to grind Niko down to the point where it cannot

⁵⁵⁶ HT (Day 1), page 87.

⁵⁵⁷ HT (Day 1), page 88.

afford to defend itself in these proceedings by imposing extensive and costly submissions on it and adding phase after phase to these proceedings.

*The Tribunal should respect the condition that the Respondents' agreed in the fall of 2015 in order to secure Niko's agreement that they could cure their default and advance a new case a month before what it was supposed to be, what was supposed to be a hearing on all issues. That condition was a single round of Pleadings with no provision for a disclosure phase.*⁵⁵⁸

670. The Claimant accepted that a Party may adjust its quantum calculation, if it saw the need to do so in light of the Decision on Recoverable Loss. “But the expense of responsive Pleadings should not be imposed”.⁵⁵⁹
671. **The Tribunal** pointed out to the Respondents that it had “difficulties with the proposal” of the Respondents providing for a decision after the August 2021 hearing “and then suspend[ing] the arbitration for a few years until COVID is over and your Experts have made their monitoring”.⁵⁶⁰
672. The Tribunal must bear in mind that the proceedings dealing with the Compensation Declaration concern the claims made in the Money Suit and that these claims are based on the assessment in the Report of the Environmental Losses Committee, mandated to “estimate the long-term potential losses”.⁵⁶¹ The Respondents have not put into question this assessment but, in March 2016, stated that it had to be “supplemented due to continuing harm occurring over the past decade”.
673. Until today, the Respondents have not presented argument and evidence to support the 2005 assessment of the committee on which the Money Suit is based; they have not presented the announced supplement to that assessment; they have not presented a replacement of the 2005 assessment but announced that their assessment of the environmental losses will be submitted only in an uncertain future. The submissions of 15 April 2021 have not brought any substantial change, as no further

⁵⁵⁸ HT (Day 2), pages 384 and 385.

⁵⁵⁹ HT (Day 2), page 385.

⁵⁶⁰ HT (Day 1), page 205.

⁵⁶¹ Third Environmental Losses Report, Exhibit Annex R-5(bis), section 1.

information about “the Study” is provided and its completion time remains in an uncertain future.

674. The Tribunal does not accept that the Respondents continue holding up the progress of these proceedings by a programme for monitoring and surveying presented in 2016 and on which no progress has been made since then. **If the Respondents wish to supplement the environmental claims, develop, or modify them, they must do so now.**
675. Following the notification of the present decision, the Tribunal will consult the Parties to determine the procedure leading up to the hearing scheduled for August 2021. During the course of this procedure any further argument and evidence must be presented so that any remaining evidentiary issues may be addressed during the August 2021 Hearing and thereafter the Tribunal may render its final award on the Compensation Declaration, including the environmental claims of the Government pursued through BAPEX as its assignee.
676. The **Respondents’ request to suspend the procedure on the environmental claims is denied.**

11. THE PRE-AWARD INTEREST

677. The Respondents seek pre-award interest based on “simple six-month LIBOR plus 2% on BAPEX’s and the Government’s total historical losses”.⁵⁶²
678. The Claimant denies that BAPEX is entitled to pre-award interest, arguing, *inter alia*, that such interest is excluded by clause 27.2 of the JVA.⁵⁶³ .
679. The Tribunal had included in its Questions for the November 2020 Hearing questions concerning the Respondents’ claim for pre-award interest (questions 23-26). Noting that these questions had not been addressed by the Respondents in their presentations at the Hearing, the Tribunal invited the Respondents’ comments; however, the Respondents did not address these points during the November 2020 Hearing.⁵⁶⁴
680. The decision on this request is reserved.

⁵⁶²BMD, paragraph 394; *see also* Amendment paragraph 99(d).

⁵⁶³ CMD, paragraphs 437 – 447.

⁵⁶⁴ Summary Minutes of the November 2020 Hearing, paragraph 29.

12. THE CLAIMANT'S SET-OFF CLAIM

681. With its Counter-Memorial on Damages the Claimant introduced a request which came to be referred to as its “set-off claim”. The Claimant argues that BAPEX’s failure to approve Niko’s proposals for further drilling since 2005 was a breach of the JVA. The Claimant asserts that this breach entitles it to at least USD 114.1 million as damages and requests this loss be set off against the claims of BAPEX.⁵⁶⁵
682. The Claimant relies on the request for damages only for the purpose of set-off. It does not seek an award for any amount that may remain after the set-off and denies that its request for damages may be described as a “claim”. The Respondents object to the set-off Claim as late and hence inadmissible under the ICSID Rules and under the law of Bangladesh.

12.1 The Parties’ positions and the issues to be decided

683. **The Claimant** asserts that, after the first blowout, BAPEX wrongfully failed to approve Niko’s proposals to develop and produce the Chattak West field. It argues that this failure was in breach of the JVA and, relying on Section 73 of the Contract Act, that “BAPEX is liable to pay compensation for the losses it caused to Niko as a result of its breaches of the Joint Venture Agreement”.⁵⁶⁶ The Claimant quantifies the resulting losses as “at least USD 114.1 million” and seeks a decision to “set this amount off against any amount for which Niko is determined to be liable to BAPEX”.⁵⁶⁷
684. The set-off claim must be distinguished from the Claimant’s reliance on BAPEX’s failure to approve production as a defence against any claims of BAPEX for Niko’s alleged failure to develop the Chattak field.⁵⁶⁸ That issue concerns the valuation of BAPEX’s claim. Similarly, the Claimant’s arguments concerning both the causation of any losses due to the alleged seeping of gas after the completion of the Chattak 2B relief operation, as discussed above in Section 8.3.2, as well as the related mitigation argument, are distinct and not treated here.

⁵⁶⁵ CMD, paragraphs 458 and 459, as quoted above in Section 4.1.

⁵⁶⁶ CMD, paragraph 407.

⁵⁶⁷ CMD, paragraph 459; the amount is quantified in CMD, paragraphs 408 – 412, in particular Table 2 at paragraph 410.

⁵⁶⁸ CMD, paragraph 403.

685. With respect to the set-off claim, the Claimant argues that the Tribunal has jurisdiction to award compensation for the losses claimed and to set-off the awarded amount against any claim made by BAPEX.⁵⁶⁹ The Claimant refers to the Memorial on Damages of March 2016 in which BAPEX “eventually formulate[d] its claim” and concludes that “Niko’s first opportunity to address the BAPEX claim and to assert a set-off as part of its response to it” was the Claimant’s Counter-Memorial on Damages of 7 September 2020.⁵⁷⁰ Relying on ICSID Arbitration Rule 40, the Claimant adds that “if Niko’s right of set-off is characterised as a claim (which Niko considers it is not), Niko had the right to assert it as a part of its defence to the damages case presented by BAPEX in its Memorial on Damages of March 2016”.⁵⁷¹

686. The Tribunal had included in the Questions for the November 2020 Hearing the following Question 28:

Is the claim only for the purpose of set-off, meaning that there is no request to award amounts that may exceed the amounts that the Tribunals may award to the Respondents?

687. At the Hearing the Claimant confirmed that “there is no request to award amounts that may exceed the amounts that the Tribunal may award to Respondents”.⁵⁷²

688. **The Respondents** state that “in seeking a decision on its set-off claim, Niko is asserting a new liability claim by requesting that the Tribunal determine that BAPEX is liable for Niko’s inability to develop and produce the Chattak West field after the Chattak 2 well blowout”.⁵⁷³

689. The Respondents do not contest in general terms the Tribunal’s jurisdiction for a claim such as Niko’s claim for liability and the set-off. Their jurisdictional objection consists in asserting that the “ICSID Convention and Rules permit a Tribunal to exercise jurisdiction over two types of claims of liability: Primary claims and ancillary claims”. Ancillary claims are governed by Rule 40 and “must be raised early in the written phase of arbitration and no later than with the Reply”.⁵⁷⁴ They object that

⁵⁶⁹ CMD, paragraphs 413 – 433.

⁵⁷⁰ CMD, paragraph 435.

⁵⁷¹ CMD, paragraph, 436.

⁵⁷² HT (Day 2), page 230.

⁵⁷³ BAPEX’s Submission of 22 October 2020, paragraph 7.

⁵⁷⁴ HT (Day 2), page 270 – 272.

“Niko’s proposed claim is both untimely and decidedly not an ancillary or set-off claim”.⁵⁷⁵ They argue that “Rule 40 is the only means by which the Tribunal may hear Niko’s claim”⁵⁷⁶ and conclude: “Having failed to assert its claim when required to do so, Niko’s set-off claim is now untimely and inadmissible pursuant to Rule 40(2)”.⁵⁷⁷

690. They also assert that Niko’s claim is time barred under the law of Bangladesh and they argue that both “timeliness of the underlying claim” and the “right of set-off” are substantive issues and governed by the law of Bangladesh.⁵⁷⁸
691. At the Pre-Hearing Conference it was agreed that, with respect to the set-off claim, the November 2020 Hearing would be “limited to the admissibility of the set-off defence and the Tribunal’s jurisdiction over it. If the Tribunals determine in the forthcoming Decision on Heads of Recoverable Loss that the set-off defence is admissible, liability and quantum of that defence will be subject of the final phase of the arbitrations”.⁵⁷⁹ At the Hearing the Parties argued the issue of admissibility both by reference to the rules of the ICSID Convention and Arbitration Rules and under the law of Bangladesh concerning limitation of action and set-off.
692. The Tribunal identifies **two principal issues** that must be addressed in the present Decision: (i) is the Claimant’s set-off Claim admissible in the present arbitration and (ii) is the request for damages on which the set-off claim relies time-barred under the applicable law?

12.2 Is the set-off Claim admissible in these proceedings?

693. **The Respondents** argue that “Niko knew of this claim when it filed its Request for Arbitration and had the opportunity to file it as a primary claim”. As Niko did not file the claim as a primary claim, it had to file it as an ancillary claim. “Its last opportunity to present this claim was to present it under Rule 40 as an ancillary claim”, as Niko had announced in its letter of 12 March 2020.⁵⁸⁰

⁵⁷⁵ Amendment, paragraph 82.

⁵⁷⁶ BAPEX’s Submission of 22 October 2020, paragraph 9.

⁵⁷⁷ BAPEX’s Submission of 22 October 2020, paragraph 20.

⁵⁷⁸ HT (Day 2), pages 434 – 436.

⁵⁷⁹ Summary Minutes of 4 November 2020 Pre-Hearing Conference, paragraph 12.

⁵⁸⁰ HT (Day 2), page 271.

694. When arguing that Niko’s set-off claim is not a primary claim and is too late as an ancillary claim according to Rule 40(2) of the ICSID Arbitration Rules, the Respondents state that the facts on which the Claimant relies date back to 2005 and “all of the facts on which [Niko] bases its claims were known at latest by 2012”. According to the Respondents, the Claimant has not shown good cause why it has not advanced the claim of liability before it filed its Reply on Liability in 2014. The claim is therefore time barred under Rule 40(2).⁵⁸¹

695. The Respondents concluded:

*[Niko] cannot escape that Rule 40 governs admissibility of all Ancillary Claims, including defensive [claims] [...Niko] could have brought this claim for damages at the start of the arbitration and did not, and it is untimely.*⁵⁸²

696. **The Claimant** argues that in the proceedings were commenced by a request for declaratory relief of non-liability. In the proceedings concerning the Compensation Declaration there was “no suit or claim by any party for the recovery of money before BAPEX’s March 2016 Memorial on Damages”.⁵⁸³ When it discussed the procedure following the Decision on Liability in its letter of 12 March 2020, the Claimant explained:

BAPEX asserted a claim for damages against Niko for the first time in its March 2016 Memorial on Damages, although it was ordered to assert any such claim in its January 2014 Memorial. Under ICSID Arbitration Rule 40, a claimant has the right to assert an ancillary claim, including one by way of set-off, in response to a counter-claim asserted by the respondent in its first written pleading.

697. The Claimant developed its argument according to which its set-off claim was admissible according to Arbitration Rule 40 and fell within the jurisdiction of the Tribunal.⁵⁸⁴ The Claimant also pointed out that it sought a declaration of non-liability and that it was only in BAPEX’s Memorial on Damages of March 2016 that BAPEX for the first time formulated claims “which are very different from those articulated in the Money Suit. This is

⁵⁸¹ HT (Day 2), pages 273 and 274.

⁵⁸² HT (Day 2), page 434.

⁵⁸³ HT (Day 2), page 231.

⁵⁸⁴ CMD, paragraphs 413 – 433.

Niko's first opportunity to address the BAPEX claim and to assert a set-off as part of its response to it". The Claimant continued by stating:

Niko submits that under ICSID Arbitration Rule 40, a claimant has the right to assert an ancillary claim, including one by way of set-off, in response to a counterclaim asserted by the respondent in its first written pleading. Therefore, if Niko's right of set-off is characterized as a claim (which Niko considers it is not), Niko has the right to assert it as part of its defence to the damages case presented by BAPEX in its Memorial on Damages of March 2016.⁵⁸⁵

698. The Claimant concluded that the set-off claim which the Claimant asserted in its Counter-Memorial is therefore timely.⁵⁸⁶

699. In response to a question from the Tribunal at the Hearing, the Claimant accepted that it had the opportunity of asserting a damages claim in the Request for Arbitration. It argued that under the ICSID Arbitration Rules it was not limited to the initial claims but could add an ancillary claim as of right following the filing of the Request. In the present case, the Tribunal had to consider in any event "BAPEX's refusal to allow the field to be produced for mitigation of damages and also in considering Niko's defence under section 54 of the Contract Act". The Claimant added that BAPEX's quantum model was "exactly what Niko used to prepare its case on quantum for its set-off" and concluded:

So, on quantum and on the facts, this case is - - this Set-off Claim is already part of this case. The only issues that require additional consideration by the Tribunal are the issues of legal interpretation of the JVA.⁵⁸⁷

700. **The Tribunal** notes that the issue is not the Claimant's declaration of set-off but the introduction in this arbitration of the Claimant's request for damages. Although the Claimant resists the description of this request as a "claim", the effect on the procedure is essentially the same as the introduction of a new claim: the Parties must argue and the Tribunal must decide whether the Claimant is entitled to the payment of a certain amount which could then be relied upon for the set-off.

⁵⁸⁵ CMD, paragraphs 434 – 436.

⁵⁸⁶ HT (Day 2), pages 231 and 230.

⁵⁸⁷ HT (Day 2), pages 247 – 249, at 249.

701. The Claimant's request for damages is an "incidental or additional claim" under ICSID Arbitration Rule 40; this is not contested. As such, it would have to be presented, as a matter of principle, no later than in the reply. The question therefore is what was the "reply" in the present proceedings.
702. As pointed out above, the Claimant accepts that the facts of its request for damages were known since 2005 and that a claim for damages against BAPEX could have been filed with the Request for Arbitration. This request, however, did not seek damages but merely a declaration of non-liability; BAPEX had not raised any claim and had declared that it did not have any claims. It was only when BAPEX, in its Memorial on Damages of 25 March 2016, made a claim for compensation in the amount of USD 118 million that payment was claimed in this arbitration. The Claimant replied to this by the Counter-Memorial on Damages of 7 September 2020. In that submission, the Claimant raised its set-off claim.
703. Seen from this perspective, the **set-off claim meets the time requirement of ICSID Arbitration Rule 40(2)**.
704. In any event, ICSID Arbitration Rule 40(2) leaves it for the Tribunal to authorise a later presentation of an ancillary claim "upon justification by the party presenting the ancillary claim and upon considering any objection of the other party".
705. The justification given by the Claimant does not appear unreasonable: prior to BAPEX's Memorial on Damages, BAPEX had raised no claim in this arbitration. The claims to which the Compensation Declaration related were those made by the Government and Petrobangla in the Money Suit and Niko's claim for breach of warranties and for misrepresentation. While Niko's request for damages against BAPEX could have been made from the very start of the arbitration, such a request would have given a different dimension to the proceedings. The Tribunal does not find it unreasonable for the Claimant to have limited the scope of the arbitration to the Compensation Declaration and changed the position only when BAPEX had presented its claims in the arbitration. This consideration is unrelated to the Tribunal's analysis of the time-bar issue in the following section.
706. The Tribunal has also considered whether the introduction of the Set-off Claim in the Counter-Memorial on Damages caused any serious procedural detriment to the Respondents. In the Questions for the

November 2020 Hearing, the Tribunal had invited the Respondents to address the following Question 30:

How would the Respondents be affected if the set-off claim would be admitted in the next phase of the proceedings leading to the evidentiary hearing in August 2021?

707. At the Hearing, the Tribunal repeated the question in a different form, asking the Respondents whether it made a difference for them that they would have to address the claim now rather than having to do it some years earlier. The Respondents replied:

Yes. Because it adds to -- in every proceeding where late claims are made, it always could be done now as opposed to before, but it makes a difference because it adds to our burden at this time. And it's -- it is a claim that was ripe to have been brought before and was not.⁵⁸⁸

708. The Tribunal cannot see that having to consider the Set-off Claim now rather than at an earlier stage in the proceedings caused serious procedural disadvantage for the Respondents.

709. The Tribunal considers that the substance of the Set-off Claim is very closely linked to issues which have to be addressed by the Parties and the Tribunal in any event, as mentioned above. As the Claimant explained, the Set-off Claim is based on the same set of facts; the issues added to the arbitration essentially are limited to the examination of additional legal argument concerning the breach of the JVA.

710. For these reasons the Tribunal concludes that, even if the Set-off Claim were not otherwise admissible under Arbitration Rule 40, the Tribunal would have authorised it under its subparagraph (2).

12.3 Is the damages claim time barred?

711. The Respondents' alternative argument is in substance that if the Claim were procedurally admissible" it would be time barred under the applicable law.⁵⁸⁹ The Parties differ about (i) the issue to which the time bar applies,

⁵⁸⁸ HT (Day 2), page 278.

⁵⁸⁹ HT (Day 2), page 279.

(ii) the law applicable to the time-bar issue and (iii) the application of that law to the facts of the case. The Tribunal examines these issues seriatim.

12.3.1 The issue to which the time-bar applies

712. **The Claimant** considers the question of time bar primarily by reference to its set-off claim. It asserts that the “limitation period for a claim in set-off or a defence in set-off runs from the filing of the Claim for the recovery of money that is sought to be set off. And it is not in dispute that that period began in March 2016”.⁵⁹⁰
713. The Claimant emphasises that it is asserting set-off “solely as a defence to BAPEX’s Damages Claim and not as an affirmative claim for payment of damages to Niko”.⁵⁹¹ The Claimant argues that set-off is a procedural matter:

...the applicable law: While some legal systems see set-off as a matter of substantive law, most common law systems consider it a matter of procedure. This is true of Bangladesh law where set-off is addressed in the schedule to the Code of Civil Procedure ...

*The Bangladesh Code of Civil Procedure obviously has no application here where the procedure is governed by the ICSID Convention and Rules. Niko’s submission is that set-off in this case should be considered as a procedural matter falling under the Article 44 of the ICSID Convention and not a substantive one falling under Article 42.*⁵⁹²

714. As neither the ICSID Convention nor the ICSID Arbitration Rules contain a provision addressing specifically set-off, the Claimant argues that under Article 44 of the ICSID Convention, in the absence of an agreement by the Parties, the matter must be decided by the Tribunal. The Claimant argues that “the Tribunal should be guided by the UNIDROIT Principles [...] not as the governing law, but, rather, as international best practices that the Tribunals may properly consider in exercising their authority under Rule 44 [recte: Article 44 of the Convention]”.⁵⁹³

⁵⁹⁰ HT (Day 2), pages 380 and 381.

⁵⁹¹ HT (Day 2), page 230.

⁵⁹² HT (Day 2), pages 227 and 228.

⁵⁹³ HT (Day 2), page 228.

715. **The Respondents** consider the issue by reference to the “the underlying claim”, viz. the damages claim on which the Claimant relies for the set-off. In their position the relevant limitation period concerns the time by which the damages claim must be brought not the time by which set-off must be declared. They argue:

Now, under Bangladeshi law, timeliness of the underlying claim answers whether the sum is legally recoverable. That, in turn, goes to whether Niko has a right of set-off, just as does the question of whether both Parties owe debts to each other. Treated as such in this context, but not all contexts, timeliness is a substantive, not procedural requirement.⁵⁹⁴

716. As to the **conditions for set-off**, the Claimant relies on the book of Mahmudul ISLAM and Probir NEOGI on the Bangladesh Law of Civil Procedure which defines the conditions for set-off and includes the following conditions:

Conditions for set-off. A defendant may claim set-off if the following conditions are satisfied:

(a) The suit must be one for recovery of money;

(b) The sum of money must be ascertained amount;

(c) Such sum must be legally recoverable.⁵⁹⁵

717. The Claimant also refers to the provision of the UNIDROIT Principles⁵⁹⁶ which define in Article 8.1 the “conditions of set-off”:

(1) Where two parties owe each other money or other performances of the same kind, either of them (“the first party”) may set off its obligation against that of its obligee (“the other party”) if at the time of set-off,

(a) the first party is entitled to perform its obligation;

⁵⁹⁴ HT (Day 2), page 436.

⁵⁹⁵ Mahmudul ISLAM and Probir NEOGI, *The Law of Civil Procedure*, 2nd edition, 2015, vol. 2, RLA-466, page 731.

⁵⁹⁶ UNIDROIT Principles of International Commercial Contracts, 2016, produced in the arbitration as CLA-288.

(b) the other party's obligation is ascertained as to its existence and amount and performance is due.

(2) If the obligations of both parties arise from the same contract, the first party may also set-off its obligation against an obligation of the other party which is not ascertained as to its existence or to its amount.⁵⁹⁷

718. It follows from these texts that, both under the law of Bangladesh and under the UNIDROIT Principles, set-off requires a “legally recoverable” obligation. As seen, the Respondents insist upon this requirement.

719. When questioned by the Tribunal at the Hearing, the Claimant accepted that “for a set-off to operate, there must be obligations owed by one party to the other party, mutual obligations owed by one to the other, against which the obligation can be set off”.⁵⁹⁸ The Claimant added:

Determining the set-off will require the Tribunal to decide whether BAPEX has breached the JVA as a result of the facts that are already in the record and must be addressed by the Tribunal as part of the Damages case.⁵⁹⁹

720. The Tribunal concludes that, before examining whether the Claimant may rely on set-off as a defence, the damages claim must be considered in order to determine whether it is “legally recoverable”. If this is not the case, the question of set-off does not arise. The time-bar question therefore must first be asked with respect to the damage claim.

12.3.2 The law applicable to time bar with respect to the “legally recoverable” claim

721. By the claim on which it relies for its set-off claim Niko seeks damages from BAPEX for alleged breaches of the JVA. This claim for damages is subject to the law of Bangladesh, chosen by the Parties in Article 13 of the JVA. The Claimant’s position is as follows: “Under Section 73 [of the Contract

⁵⁹⁷ Quoted partially at CMD, paragraphs 306 and 309.

⁵⁹⁸ HT (Day 2), page 244.

⁵⁹⁹ HT (Day 2), page 250.

Act] BAPEX is liable to pay compensation for the losses it caused to Niko as a result of its breaches of the Joint Venture Agreement.”⁶⁰⁰

722. The time-bar on which the Respondents rely is regulated in the Bangladesh Limitation Act [1908] which provides for claims as the one asserted by Niko a limitation period of three years.⁶⁰¹ It is undisputed that the relevant period under the law of Bangladesh is three years. The Respondents also refer to Article 10.2 (1) of the UNIDROIT Principles which also provides for a period of three years.⁶⁰²
723. **The Respondents** rely on Article 42(1) of the ICSID Convention to argue that the choice of Bangladeshi law in Article 13 of the JVA extends to this provision of the Limitation Act. They add that “under Bangladeshi law, time bar is an issue of substance”.⁶⁰³
724. While it developed in some detail its argument on the period of limitation concerning set-off and the law governing that issue, **the Claimant** was less clear about its position with respect to the period of limitation on which it relied for the set-off concerning its claim for damages.
725. The Claimant argues that the UNIDROIT Principles, on which it relied for the set-off, were not applicable to the time-bar concerning the damage claim: “There is no basis for applying a contractual limitation period that the Parties have never agreed upon”.⁶⁰⁴ With respect to limitations under Bangladesh law, the Claimant referred the Tribunal to the discussion of the issue in the **Parties’ earlier argument with respect to the Corruption Claim**. It summarises that argument as follows:

*The Respondents’ view was that limitations was a procedural issue. They contended that the Bangladesh limitations period had no application in this ICSID Arbitration. Apparently, they have changed their mind. Niko, on the other hand, in defending against the Corruption Claim, took a view that limitations was substantive.*⁶⁰⁵

⁶⁰⁰ CMD, paragraph 407

⁶⁰¹ Bangladesh Limitation Act, 1908, CLA-43, section 3 and First Schedule, Part IV.

⁶⁰² HT (Day 2), page 280.

⁶⁰³ HT (Day 2), page 284.

⁶⁰⁴ HT (Day 2), pages 236 and 237.

⁶⁰⁵ HT (Day 2), page 237.

726. In their argument on the Corruption Claim, the Parties indeed argued the issue of limitations in some detail, as follows.

727. The Claimant referred primarily to the Bangladesh Limitation Act as part of the law chosen by Article 13 of the JVA and to Article 42(1) of the ICSID Convention;⁶⁰⁶ It concluded that the Corruption Claim was time-barred under the Limitation Act.

728. The Claimant also argued that the “same result would follow under public international law if applicable. The Corruption Claim should also be declared inadmissible because it is prescribed and admitting it would prejudice Niko”.⁶⁰⁷ The Claimant relied on Article 45 of the draft Articles on State Responsibility⁶⁰⁸ and on other authorities, including decisions by the International Court of Justice. It also relied on the study by Bin Cheng on general principles of law who wrote:

*[P]rescription [is] “an universally recognised principle,” “equally obligatory upon every tribunal seeking to administer justice.”*⁶⁰⁹

729. In response, the **Respondents** denied that the law of Bangladesh was applicable and that it barred the Corruption Claim:

*... it is inappropriate to apply the Bangladeshi limitation period in an international arbitration, even when Bangladeshi law governs the review of the procurement process and the agreements that flowed from it, as in this case. Second, even if it did apply, it would not operate to bar Respondents’ claims.*⁶¹⁰

730. The Respondents argued that the contractual choice of law in Article 13 of the JVA did not extend to the limitation of action and that in “international arbitration, tribunals typically do not apply municipal law to prescription, even when municipal law governs the issues on the merits”.⁶¹¹ The Respondents also argued that, “[e]ven if these Tribunals were to look to Bangladeshi law as guidance in determining a prescription period”, the limitation periods would not apply, as such periods applied only to the

⁶⁰⁶ Niko’s Counter-Memorial on the Corruption Claim, footnote 327.

⁶⁰⁷ Niko’s Counter-Memorial on the Corruption Claim, paragraph 318.

⁶⁰⁸ Niko’s Counter-Memorial on the Corruption Claim, paragraph 319.

⁶⁰⁹ B. Cheng, *General Principles of Law as Applied by International Courts and Tribunals*, (1987), CLA-121, at 373, quoted at Niko’s Counter-Memorial on the Corruption Claim, 11 January 2017, paragraph 322, referring also to several judgments of the International Court of Justice.

⁶¹⁰ Amended Respondents’ Reply on Corruption, 22 February 2017, paragraph 207.

⁶¹¹ Amended Respondents’ Reply on Corruption, paragraph 209.

institution of legal action but not to a defence; and, so they argued, their reliance on corruption was a defence leading to the nullity of the agreements with Niko.⁶¹²

731. In the context of the argument on the time-bar applicable to the damages claim the Claimant did not develop its position any further. It concluded generally on the set-off claim: “whether substantive or procedural, BAPEX’s limitation defence here is without merit”.⁶¹³

732. **The Tribunal** considered the following: Article 42(1) of the ICSID Convention mandates that it “shall decide a dispute in accordance with such rules of law as may be agreed by the parties”. In the present case the Parties have provided in Article 13 of the JVA:

The Validity, interpretation and implementation of this JVA shall be governed by the laws of Bangladesh.

733. The damages claim on which the Claimant relies for the set-off concerns the performance of BAPEX’s obligations under the JVA, their breach and specifically the sanctions for such a breach. It is based on Section 73 of the Contract Act, as the Claimant expressly stated. That claim, therefore, is also governed by the chosen law of Bangladesh.

734. The issue that must be considered here concerns the question whether such a damages claim can still be pursued in this arbitration or is time-barred. In many legal systems this issue is treated as a matter of substantive law to which the law governing the contract applies. The issue nevertheless has given rise to some controversy because in other systems the matter is regulated in the law of civil procedure or is otherwise treated as “procedural”. This has led to the conclusion that the law governing the contract does not apply to questions of time-bar.

735. In the present case the chosen law does not treat time bar in the Contract Act nor in the Code of Civil Procedure but in a separate act. That act, the Limitation Act, does, however, expresses the relevant time-bar rules in terms of instituting a “suit” and “dismissing” it. Nevertheless, the effect of the provision is that the claim may no longer be pursued: the damages claim would therefore no longer be given effect by the law.

⁶¹² Amended Respondents’ Reply on Corruption, paragraphs 212 and 213.

⁶¹³ HT (Day 2), page 237.

736. There is no indication in the record of the arbitration that the Parties, when agreeing that the “implementation” of the JVA was to be governed by the law of Bangladesh, intended that the law applicable to the creation of the claim for damages for breach of the contract would be different from the law that rendered such a claim ineffective by the operation of a time-bar.
737. The Respondents rely on observations by Gary Born, according to whom it is “proper to ‘assimilate limitation issues to the substantive law governing the dispute’”.⁶¹⁴ Mr Born indeed points out that “statutes of limitation are virtually always applicable in international arbitration proceedings, in the same way that they apply in international court proceedings”. He also opines:

*A refusal to apply a limitation period to a claim in arbitration would also upend the reasonable expectations of parties: it would be an immense surprise to nearly anyone who agrees to arbitration that in doing so they are giving up their right to assert a limitation defence.*⁶¹⁵

738. The Claimant suggests that, when considering the limitation arguments of the Parties in the context of the Corruption Claim, the Tribunal was of the view that the limitation defence was of a procedural nature. It derives this conclusion from the observation that, in the Decision on the Corruption Claim, the Tribunal decided that claim on its merits and did not address the limitation issue.⁶¹⁶ This conclusion is not justified. The corruption issue as alleged by the Respondents in a previous stage of these proceedings was of a nature different from that of a contract claim such as that now being pursued. While pointing out the differences in the Parties’ views concerning time-bar concerning the Corruption Claim, the Tribunal does not hold the Parties to their positions the context of that claim. In any event, the Tribunal concluded that the Corruption Claim was not founded in substance. The Tribunal saw no need to decide whether this claim was also time barred.

⁶¹⁴ BAPEX’s Submission of 22 October 2020, footnote 29, quoting Gary Born, *International Commercial Arbitration*, 2nd edition, 2014, §19.03[H][2], RLA-456(bis)).

⁶¹⁵ Gary Born, *International Commercial Arbitration*, 3rd edition, 2021, volume II, pages 2874 and 2999.

⁶¹⁶ HT (Day 2), page 237.

739. **The Tribunal concludes** from these considerations that the Parties' choice of the applicable law extends to the question whether Niko's claim for damages against BAPEX for breach of the JVA is time-bared.

740. The Tribunal has also considered the Claimant's position arguing that **the time bar issue is procedural** and that it must be determined by reference to Article 44 of the ICSID Convention. That Article provides the following:

Any arbitration proceeding shall be conducted in accordance with the provisions of this Section and, except as the parties otherwise agree, in accordance with the Arbitration Rules in effect on the date on which the parties consented to arbitration. If any question of procedure arises which is not covered by this Section or the Arbitration Rules or any rules agreed by the parties, the Tribunal shall decide the question.

741. Neither the ICSID Convention nor the ICSID Arbitration Rules contain provisions on limitation of action. If the Limitation Act were taken as excluded from the Parties' choice of law and the matter treated as procedural, it would therefore be for the Tribunal to decide.

742. In such a decision on the temporal limitation of Niko's claim for damages, the Tribunal would have to take account of the nature of that claim. The relevant rules and principles would be those concerning the breach of contract under domestic law, as they apply under the Bangladesh Contract Act, not principles applicable in international law based on State responsibility.

743. The Tribunal therefore would have to take guidance from practice relating to international commercial contracts and comparative law. The Parties have referred the Tribunal to the UNIDROIT Principles. The Claimant argues, as quoted above, that the Tribunal should be guided by these principles "not as governing law, but, rather, as international best practices that the Tribunals may properly consider in exercising their authority under Rule 44 [recte: Article 44 of the Convention]".⁶¹⁷ No other reference has been provided by the Parties to guide the Tribunal if it were to determine the applicable time-bar as a procedural issue under Article 44 of the ICSID Convention.

⁶¹⁷ HT (Day 2), page 228.

12.3.3 Application of the rules on limitation

744. Having determined that that Parties' choice of the applicable law extends to the question whether Niko's claim for damages against BAPEX for breach of the JVA is time-bared, the Tribunal will now examine the application of the relevant rules on limitation.

745. The **Respondents** argue that Niko's claim for damages is time-bared under the law of Bangladesh but that, in any event, the result would not be different under the UNIDROIT Principles.

746. Section 3 of the **Bangladesh Limitation Act** provides:

Subject to the provisions contained in sections 4 to 25 (inclusive), every suit instituted, appeal preferred, and application made, after the period of limitation prescribed therefor by the first schedule shall be dismissed, although limitation has not been set up as a defence.

747. In the Act this provision is followed by an explanation about the action that tolls the limitation period:

*A suit is instituted, in ordinary cases, when the plaint is presented to the proper officer ...*⁶¹⁸

748. The section concerning claims "for compensation for the breach of any contract" of the relevant type are subject to a **three-year time-bar**, starting:

*When the contract is broken or (where there are successive breaches) when the breach in respect of which the suit is instituted occurs, or (where the breach is continuing) when it ceases.*⁶¹⁹

749. Similarly, the **UNIDROIT Principles** provide in Article 10.2 a general limitation period of **three years**, starting "on the day after the day the obligee knows or ought to know the facts as a result of which the obligee's right can be exercised". The obligee interrupts the limitation period according to Article 10.6 by performing any act that is recognised by the law of the arbitral tribunal as asserting "the obligee's right against the obligor" by commencing arbitration or in an arbitration already instituted.

⁶¹⁸ Bangladeshi Limitation Act, 1908, Part II, CLA-043.

⁶¹⁹ Bangladeshi Limitation Act, 1908, First Schedule (CLA-043).

750. Under both rules the limitation period for a breach of contract claim starts with the breach or when the facts of the breach are known to the claimant and is tolled when the claim is “presented to the proper officer”; in the present case this amounts to asserting the claim in arbitration, as provided the UNIDROIT Principles.

751. Concerning the time **when the limitation period started running, the Respondents** rely on the Claimant’s explanations in the Counter-Memorial on Damages and assert “the first instance of BAPEX’s alleged breach of contract occurred in November 2005”.⁶²⁰ They confirmed at the Hearing: “the date when the statute of limitation began to run was 2005, and it expired in November 2008”.⁶²¹ In support of this assertion the Respondents argue:

*By Niko’s own admission, the central facts on which this claim is based date back to 2005. And all of the facts upon which it bases its claims were known at latest by 2012.*⁶²²

752. According to the Respondents Niko’s claim for damages

*is not inherently a set-off claim. It is a claim to BAPEX’s liability and a claim to a valuation of the damage caused by an alleged breach by BAPEX. So, there was no need for Niko to wait for BAPEX to assert a claim in order to present its Claim. It had this Claim.*⁶²³

They add:

*“Niko knew of and could have submitted in 2005. So, [...] the date when the statute of limitation began to run was 2005, and it expired in November 2008”.*⁶²⁴

and:

*“... the Claim became untimely in 2008, or if there was a continuing breach – and we don’t agree there was – in 2012”.*⁶²⁵

⁶²⁰ BAPEX’s Submission of 22 October 2020, paragraph 25.

⁶²¹ HT (Day 2), page 291.

⁶²² HT (Day 2), page 273.

⁶²³ HT (Day 2), page 287.

⁶²⁴ HT (Day 2), page 281.

⁶²⁵ HT (Day 2), page 436 and 437.

753. **The Claimant** has described in detail the alleged breaches of the JVA by BAPEX,⁶²⁶ starting in November 2005 when Niko requested to be authorised to begin drilling and BAPEX did not accept this request. This is the first breach on which the Claimant relies. This initial breach was followed by other failed attempts by Niko to obtain the drilling approval, at a JMC or at other occasions. Eventually, BAPEX responded in May 2012 to a last request by Niko for the organisation of a JMC, that it was better to wait for an award in the ICSID proceedings.⁶²⁷

754. The Claimant presents this conduct by BAPEX as a series of repeated breaches, starting in November 2005:

*The breaches of the JVA by BAPEX occurred repeatedly throughout the period of November 2005 through May 2012.*⁶²⁸

755. In the Claimant's presentation, this period ended with the letter of BAPEX in May 2012:

*BAPEX closed the book on any prospect of the JMC ever meeting to address the outstanding issues. This was in direct contravention of the mandatory obligations in Article 6 of the JVA.*⁶²⁹

756. At the Hearing the Claimant suggested that BAPEX's 24 May 2012 letter was a proposal "to resolve the dispute about developing Chattak once the Tribunals resolves this Arbitration" and that Niko believed that the dispute would be "resolved within a few years after filing the Request for Arbitration".⁶³⁰

757. **The Tribunal** concludes from this description that the breach on which the Claimant relies occurred at repeated occasions. In other words, there were a series of breaches, the first of which occurred in November 2005. At that time the limitation period started to run for the first breach, whether it is considered under the Bangladesh Limitation Act or under the UNIDROIT Principles.

758. Thereafter, Niko attempted unsuccessfully on other occasions to obtain approval to drill the Chattak field. For the Claimant, each of these attempts

⁶²⁶ CMD, pages 109 – 136.

⁶²⁷ Letter from BAPEX to Niko, 24 May 2021, Exhibit R-246.

⁶²⁸ CMD, paragraph 392.

⁶²⁹ CMD, paragraph 392(d).

⁶³⁰ HT (Day 2), page 379.

may be considered as a further breach. The last of these occasions occurred when in May 2012, according to the expression of the Claimant, “BAPEX closed the book on any prospect of the JMC ever meeting to address the outstanding issues”, including the development of the Chattak field. If BAPEX’s letter of 24 May 2012 gave rise to expectations for a future settlement of the dispute as the Claimant now asserts, there is no basis for assuming that such expectations stopped the limitation period from running.

759. As described by the Claimant, these were repeated breaches, not a continuing breach. As stated by the Respondents: “Niko [...] submits an application and BAPEX denies it, that’s the breach. The breach doesn’t continue just because the effect of that denial continues.”⁶³¹
760. It follows that **the limitation period for Niko’s breach of contract claim commenced in November 2005; subsequent breaches occurred until May 2012, initiating further limitation periods.**
761. Concerning **the end of the limitation period the Respondents** argue that Niko’s claim for damages could have been made as from November 2005, when the alleged breach occurred. In order to preserve Niko’s rights under such a claim, the claim had to be made by November 2008 and with respect to subsequent breaches until May 2012, by May 2015. It was made only in the Claimant’s Counter-Memorial on Damages of 7 September 2020.
762. **The Claimant** argues that the claim filed with the RfA in 2010 was broad: the “scope of the suit that Niko filed was quite broad”. The Claimant quoted from the Request for Arbitration of 1 April 2010:

*Niko provided Notice to Arbitrate Requiring that the following disputes be arbitrated: ... (b) Whether Niko is liable for any of the Compensation Claims in whole or in part, and if it is liable, **determination of the amount of liability**; ...*⁶³²

763. The Claimant concludes from this identification of the dispute brought to arbitration:

⁶³¹ HT (Day 2), pages 437 and 438.

⁶³² HT (Day 2), pages 239 – 240, see Niko’s Presentation, 20 November 2020, CH-2, Slide 13, quoting from RfA I, paragraph 6.65 (b), emphasis in the presentation.

*The set-off asserted here goes to the determination of Niko's liability and its amount. It is within the scope of the suit as originally filed in 2010. The limitation clock, if it existed at all, stopped 10 years ago. There was no need to stop it again.*⁶³³

764. **The Tribunal** considers that the Claimant's Request for Arbitration made no mention of a claim for damages against BAPEX concerning the allegedly wrongful refusal to allow development of the Chattak field. The Tribunal does not accept that the mere possibility of extending the arbitration to a claim that could be used to reduce Niko's liability by a set-off satisfies the requirements of Bangladeshi law. When it commenced this arbitration, the Claimant sought a declaration of non-liability and raised a claim for breach of warranty. There was no reservation of a claim for compensation concerning BAPEX's failure to agree to production from the Chattak field.
765. Such a claim was first mentioned in the letter of 12 March 2020, when the Claimant announced that it was "possible that Niko may defend the counter-claims by requesting the Tribunals to set off all or part of any damages Niko may be found to owe to BAPEX against damages owed by BAPEX to Niko". It was then in its Counter-Memorial on Damages of 7 September 2020 that the Claimant presented for the first time the claim for "damages owed by BAPEX to Niko".
766. The Tribunal concludes that **Niko's claim against BAPEX** for loss caused by the refusal to allow the development of the Chattak field was presented **on 7 September 2020**.
767. **The Claimant** also argues that **the limitation period was suspended** by Procedural Order No 13.⁶³⁴ The Claimant asserts that proceedings on the Compensation Declaration were suspended by this Procedural Order of 26 May 2016, which organised the proceedings on the newly filed Corruption Claim and ruled that "proceedings on all issues other than the Corruption Issue and the Claimant's Request for Interim Measures of 19 May 2016 are suspended".⁶³⁵ The stay was not formally lifted but proceedings on the merits resumed when the Decision on Liability was issued in February 2020.

⁶³³ HT (Day 2), page 240.

⁶³⁴ HT (Day 2), pages 237 – 239.

⁶³⁵ Procedural Order No. 13; see HT (Day 2), page 238.

768. The Claimant relies on Section 15 of the Bangladesh Limitation Act, according to which the period during a suspension of proceedings is not counted. The Claimant concludes that, under the law of Bangladesh, taking into account the suspension of the proceedings, the filing of the set-off claim in the Counter-Memorial on Damages on 7 September 2020 was timely.

769. **The Respondents** reply:

It does not help Niko to say the clock was stopped by the Tribunal's May 2016 [order] because the claim became untimely in 2008, or if there was a continuing breach – and we don't agree there was – in 2012.⁶³⁶

770. **The Tribunal** notes that the acts on which the Claimant relies for its breach of contract claim occurred between November 2005 and May 2012. The limitation period for the last of these alleged breaches ended therefore in May 2015. Assuming Section 15 of the Limitation Act were applicable to the suspension by Procedural Order No 13 issued in May 2016, it would not be of any assistance to the Claimant, as the limitation period concerning the claims for all of these breaches expired before the suspension was ordered.

771. The Tribunal concludes that **Niko's claims for breaches by BAPEX of the JVA** allegedly committed at various dates between November 2005 and May 2012 **are time-barred**. The **Claimant's set-off relying on these claims is therefore denied**.

⁶³⁶ HT (Day 2), page 436.

13. THE DECISION

772. In view of the considerations set out above, the Tribunal concludes and decides with respect to the Compensation Declaration:

13.1 Concerning the First Head of Loss

773. BAPEX is entitled to compensation for its share under the JVA of the value of the gas that escaped from Sands 1 and 2 in the Chattak field (the Reservoir) at a price to be determined (the JV price). This compensation must be paid

- (i) for the gas that escaped from the first blowout on 7 January 2005 to the second blowout on 24 June 2005; and
- (ii) for the gas that escaped after the second blowout on 24 June 2005 unless it is established (i) that the bridging of the Chattak 2 wellbore, assumed to have taken place on 9 January 2005, obstructed the wellbore at the Regional Shale and reduced the flow of gas from the Reservoir and (ii) that the second blowout removed the obstruction and reactivated the flow of gas; and

if the Tribunal determines that gas losses after 24 June 2005 are recoverable,

- (iii) for gas that escaped after the completion of the Chattak 2B relief well on 9 October 2005, unless it is established that the relief operation completely sealed the Chattak 2 opening in the Regional Shale; and

if the Tribunal determines that gas losses after 9 October 2005 are recoverable,

- (iv) only for gas that would have escaped the Reservoir despite a production well, provided it is established that BAPEX failed without justification to approve that Niko drill such a production well.

774. BAPEX is entitled to recover on behalf of the Government of Bangladesh any difference between the JVA price, as determined according to paragraph 773 above, and the price the Government or Petrobangla paid to comparable gas producers in Bangladesh for the quantities of gas lost

for which the Claimant must compensate BAPEX according to paragraph 773 above.

13.2 Concerning the Second Head of Loss

775. The alleged loss of production due to the impossibility of producing gas from the Reservoir as a result of the first blowout, is not recoverable.

13.3 Concerning the Third Head of Loss

776. BAPEX is entitled to claim on behalf of the Government for the loss and damage caused by the first blowout to the environment and the local population (Environmental Losses) to the extent Niko has not already compensated such loss and damage, subject to the following determinations:

- (i) any loss that the first blowout may have caused by increasing the level of arsenic in the Tengratila drinking water is not recoverable;
 - (ii) compensation for any Environmental Losses attributed to continuing seepages of gas from the Reservoir must take into account the decision concerning Niko's liability for loss of gas according to paragraphs 773 (b) to (d) above;
 - (iii) any costs of Mr Wilson's project to avoid or reduce the explosion risk caused by the use of the gas collected from seepages for cooking purposes are not recoverable;
 - (iv) the decision on the claim for the costs of Mr Wilson's project for the soil vacuum extraction is reserved; and
 - (v) the decision on other issues concerning the recoverability of Environmental Losses claimed by BAPEX on behalf of the Government is reserved.
777. The Respondents' request to suspend the procedure on the claims for Environmental Losses is denied.
778. The claim for advance payment on account of BAPEX's monitoring, surveying and abatement programme is denied.

13.4 Pre-Award Interest

779. The decision on the Respondents' claim for pre-award interest is reserved.

13.5 The Claimant's Set-Off Claim

780. The Claimant's request for set-off based on its claims for breaches by BAPEX of the JVA allegedly committed at various dates between November 2005 and May 2015 is admitted in the arbitration.

781. These claims are time-barred.

782. The Claimant's set-off relying on these claims is denied.

13.6 Procedural Issues

783. Following the notification of this decision the Tribunal will consult the Parties about the organisation of the remainder of the proceedings on the Compensation Declaration.

13.7 Costs of the proceedings on the Compensation Declaration

784. The decision on claims for the cost of the proceedings on the Compensation Declaration is reserved.

[signed]

Professor Campbell A. McLachlan QC
Arbitrator

[signed]

Professor Jan Paulsson
Arbitrator

[signed]

Mr Michael E. Schneider
President of the Arbitral Tribunal