EXHIBIT 2

PCA CASE NO. 2013-09

IN THE MATTER OF AN ARBITRATION ARISING UNDER THE AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF MAURITIUS AND THE GOVERNMENT OF THE REPUBLIC OF INDIA FOR THE PROMOTION AND PROTECTION OF INVESTMENTS, SIGNED ON SEPTEMBER 4, 1998, AND THE ARBITRATION RULES OF THE UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW 1976

-between-

CC/DEVAS (MAURITIUS) LTD.,
DEVAS EMPLOYEES MAURITIUS PRIVATE LIMITED., and
TELCOM DEVAS MAURITIUS LIMITED.

(the "Claimants")

-and-

THE REPUBLIC OF INDIA

(the "Respondent" or "India", and together with the Claimants, the "Parties")

DISSENTING OPINION
The Hon. Shri Justice Anil Dev Singh

Table of Contents

I. Introduction

1. I have had the advantage of going through the final award in draft rendered by my learned colleagues. With great amount of respect, I regret my inability to agree with the use of discounted cash flow ("**DCF**") analysis to establish fair market value ("**FMV**") of Devas Multimedia Private Ltd. ("**Devas**"), the quantum of damages awarded to the Claimants and the reasons in support thereof.

2. Jurisprudence has evolved, backed by catena of precedents, according to which the DCF methodology is unsuitable for the determination of future cash flow of a business entity that is not a going concern and has no proven record of profitability as its use is likely to be driven by speculation, conjectures, assumptions, beliefs, and too many hypotheticals, which have no certainty. Tribunals have been disinclined to use the DCF devise to ascertain FMV of entities which have no established steady income stream.

3. It is almost uniformly established that the DCF method is used to assess the present FMV of a going concern based on its past profits over a sufficient period of time. Section (6) part (IV) of the World Bank Guidelines on the Treatment of Foreign Direct Investment (the "**World Bank Guidelines**") defines the term 'going concern' as:

> an enterprise consisting of income producing assets which has been in operation for a sufficient period of time to generate the data required for the calculation of future income and which could have been expected with reasonable certainty, if the taking had not occurred, to continue producing legitimate income over the course of its economic life in the general circumstances following the take by the State.
>
> [Ex. R-4 (Appendix BF-6): Legal Framework for the Treatment of Foreign Investment: Volume II, Report to the Development Committee and Guidelines on the Treatment of Foreign Direct Investment (World Bank Group 21 September 1992), p.41-42]

II. Rejection of a DCF Approach by the ICC Tribunal and the DT Tribunal

4. On the touch stone of the aforesaid definition, Devas does not qualify as a going concern as it does not have an income producing asset in operation and has no evidence of any historical data of past earnings required for computation of future income with reasonable amount of certainty. Since Devas has not generated any revenue, the very foundation to support a credible DCF valuation claim is

missing. This view stands fortified by the following awards rendered by two separate arbitral tribunals in two international commercial disputes:

i. Devas Multimedia Private Limited v. Antrix Corporation Limited, ICC Case No. 18051/CYK (for short, referred to as ICC Award and the tribunal that rendered the award is referred to as the ICC Tribunal) [Ex. C-258]

ii. Deutsche Telekom AG v. The Republic of India, PCA Case No. 2014-10 (for short, referred to as PCA DT Award and the tribunal that rendered the award is referred to as DT Tribunal) [Ex. R-240]

5. Having regard to the fact that Devas is not a going concern and other concomitant facts, the six arbitrators of the ICC Tribunal and the DT Tribunal did not consider it appropriate to use the DCF methodology to determine its FMV. This view of the ICC Tribunal and DT Tribunal, is in consonance with the World Bank Guidelines and overwhelming legal material and large number of precedents. Detailed reasons for rejecting the use of DCF formula are reflected in the following relevant paragraphs of their respective awards.

The ICC Award states:

> 368. The tribunal has carefully considered whether it is appropriate to use any DCF methodology in this case, and has come to the view that it is not appropriate. According to the World Bank Guidelines and the overwhelming majority of legal materials, it is not appropriate to rely on a DCF methodology to value companies that do not have any earnings history, such as Devas. The tribunal accepts that an exception can be made in some cases, but only if there is reliable, alternative guide to what the future earnings of the business are likely to be. For example, the relevant contract may guarantee minimum payments; competitive constraints in the relevant market may be particularly low (e.g. due to regulations that apply to the industry or a market's natural monopoly characteristics); or there may be statutes or regulations that specify the prices that may be charged for the relevant goods or services.
>
> 369. This is not one of those exceptional cases. Among other things, the demand for Devas' services is unclear: the prices that it would be able to profitably charge is unclean market(s) for multimedia broadcasting services can be highly innovative and cause (even very profitable) products and services to quickly become obsolete and there is persuasive evidence, that the tribunal accept, that Devas faced significant competition for the services that it proposed to provide. In other words, there is nothing that can give the tribunal sufficient confidence about the cash flows that Devas would have earned but for Antrix's wrongful repudiation of the Devas Agreement.
>
> 370. It is true that DT's valuation of Devas in March 2008 was partly based on a DCF methodology. But DT is in a different position to this tribunal. It is one of the world's major telecommunications service providers and its business includes investing in start-up telecommunications companies.

The fact that it was comfortable speculating on Devas' future cash flows does not mean that this tribunal should be comfortable doing so.

371. Further, an aspect of the DCF methodology that the tribunal finds particularly troubling in the case is that small variations in the assumptions used in the DCF methodology can dramatically and unrealistically change Devas' values. For example:

a) delaying the launch date by a year decrease Devas' value by USD 352 million (or 22%);

b) having 10% higher costs decreases its value by USD 473 million (or *30%);*

c) charging 10% lower prices decreases its value by USD 488 million (or *31%); and*

d) increasing the discount rate from 26.3% to 21.1% decreases its value by about USD 1 billion (or 63%).

[...]

372. That is significant because it means that, if the tribunal is to be satisfied that the valuation produced by Devas' DCF methodology is reasonable, it would need to be satisfied that all of the assumptions are accurate. For example, if the tribunal is not satisfied that the appropriate discount rate is accurate, Devas' value could be over or under stated by hundreds of millions of dollars.

373. Such precision is impossible in this case. Determination of an appropriate discount rate is not an exact science. It involves taking into account a range of risks that the business would have faced and then making a value judgement about an appropriate discount rate based on the apparent severity of those risks. Similarly, assumptions concerning Devas' prices and costs are not based on clearly established facts, but on what Devas might have been able to charge, and what its cost might have been, in a hypothetical counterfactual world where it had started providing services.

374. In other cases this difficulty may not arise. The tribunal understands that the reason for the extreme sensitivity of the DCF methodology in this case is the length of the period that it would take for Devas to become cash flow positive (nine years). [...] In this case, in the tribunal's view, it makes Devas' DCF methodology an unrealistic and unreliable vehicle for determining its damages.

375. Accordingly, the tribunal considers that it is not appropriate to rely on the DCF methodology in this case.

The PCA DT Award states:

198. The DCF method is an accepted valuation method in both financial theory and in practice, including by arbitral tribunals. It typically involves a two-step process, as outlined by the tribunal in Amoco International Finance v. Iran:

> The first step in valuing an asset pursuant to the DCF method must be to project from the valuation date onward the most likely revenues and expenses of the ongoing concern, year by year. The revenues less the expenses will give the future cash flow. The second step will be to discount the projected net cash flow to its 'present value' as of the valuation date.

199. The Tribunal considers that a DCF valuation may be suited to assess the FMV of a going concern with a proven record of profitability, as confirmed

by the World Bank Guidelines on the Treatment of Foreign Direct Investment. A "going concern" is defined by these Guidelines as "an enterprise consisting of income producing assets which has been in operation for a sufficient period of time to generate the data required for the calculation of future income and which could have been expected with reasonable certainty, if the taking had not occurred, to continue producing legitimate income over the course of its economic life in the general circumstances following the taking by the State".

200. By contrast, as confirmed by a consistent line of cases, DCF is generally inappropriate if the company is not a going concern and lacks an established record of profitability. The tribunal in Metalclad v. Mexico, for instance, distinguished the two situations in the following way:

> Normally, the fair market value of a going concern which has a history of profitable operation may be based on an estimate of future profits subject to a discounted cash flow analysis.
>
> However, where the enterprise has not operated for sufficiently long time to establish a performance record or where it has failed to make a profit, future profits cannot be used to determine going concern or fair market value. [...]
>
> The Tribunal agrees with Mexico that a discounted cash flow analysis is inappropriate in the present case because the landfill was never operative and any award based on future profits would be wholly speculative.

201. Numerous arbitral tribunals, including those in Phelps Dodge v. Iran, Southern Pacific Properties v. Egypt, Wena v. Egypt, and Tecmed v. Mexico, among others, have adopted a similar reasoning. The arbitral tribunal in Siag v. Egypt, for example, referred to "the wisdom in the established reluctance of tribunals [...] to utilise DCF analyses for 'young' businesses lacking a long track record of established trading", which reluctance, it said, "ought to be even more pronounced in cases [...] where the business is still in its relatively early development phase and has no trading history at all". In some of these cases, even where the production or business activity had already started, tribunals nonetheless declined to award damages based on forecasts of future cash flows on the ground that the track record was deemed insufficiently reliable. The Tribunal agrees with this well-established line of cases and considers that this jurisprudential trend is not, contrary to what the Claimant appears to suggest, outdated, but includes several recent examples, such as Caratube v. Kazakhstan or South American Silver v. Bolivia.

202. In this Tribunal's view, there are good reasons for not applying DCF to valuation of assets or companies that have no track record of profitability. The absence of such a record makes the estimates regarding future revenues more prone to speculations and dependent on uncertain assumptions. The caution that tribunals display towards DCF in those circumstances "reflects a justified reluctance [...] to get involved in what are essentially competing prophecies of often equal plausibility".

203. With those principles in mind, the Tribunal considers whether DCF would be appropriate in light of the reality of the Devas business. It is common ground that Devas was not a going concern. Its proposed business had not started, it lacked any customers, its cost levels were untested, and it had not yet generated any revenues. It thus had no track record of profitability whatsoever. In the Tribunal's view, <u>these facts would suffice in and of themselves to discard DCF as an appropriate valuation methodology. This conclusion is reinforced by the fact that Devas lacked the WPC License,</u> the issuance of which was uncertain on the Valuation Date [see supra section V.A.3.b], as was the level of the related fee. (Emphasis supplied)

204. The Tribunal considers that, given these facts, future expected profits could not be established with the required degree of certainty, as projections would be subject to many possibilities and hypotheses and, therefore, turn out to be speculative.

205. The Tribunal observes that the difficulty to determine Devas's future cash flows was acknowledged in DT's financial statements of 2008, with the following comment:

> At the balance sheet date, T-Mobile Venture Fund GmbH & Co. KG and Deutsche Telekom Asia Pte Ltd were recognized at cost. No market prices were available for the investments. Neither was it possible to derive the respective fair value in the period in question using comparable transactions.
>
> <u>The Company did not measure the investments by discounting the expected cash flows because the cash flows could not be reliably determined</u>. (Emphasis supplied)

206. For the Tribunal, it is difficult to understand how "cash flows could not be reliably determined" for accounting purposes but could instead be reliably determined for valuation purposes in this arbitration.

207. Finally, the Tribunal finds confirmation for its conclusion that a DCF valuation is inapposite in the decision of the ICC Tribunal in Devas v. Antrix, which viewed the DCF methodology presented by Devas as "an unrealistic and unreliable vehicle for determining its damages":

> [T]he demand for Devas' services is unclear; the prices that it would be able to profitably charge is unclear; market(s) for multimedia broadcasting services can be highly innovative and cause (even very profitable) products and services to quickly become obsolete; and there is persuasive evidence [...] that Devas faced significant competition for the services that it proposed to provide. In other words, there is nothing that can give the tribunal sufficient confidence about the cash flows that Devas would have [...]. Further, an aspect of the DCF methodology that the tribunal finds particularly troubling in this case is that small variations in the assumptions used in the DCF methodology can dramatically and unrealistically change Devas' value [...] The tribunal understands that the reason for the extreme sensitivity of the DCF methodology in this case is the length of the period that it would take for Devas to become cash flow positive (nine years). In this case, in the tribunal's view, it makes Devas' DCF methodology an unrealistic and unreliable vehicle for determining its damages.

208. In addition to the lack of "sufficient confidence about the cash flows that Devas would have", the Tribunal is unconvinced by the other elements adduced by DT in support of its proposed DCF valuation. This is particularly the case for the so called "real world" DCF valuations that DT carried out when it decided to invest in Devas. These valuations ultimately played no apparent role when DT finally acquired its indirect shareholding in Devas. For example, DT's first valuation performed by Mr. Scheuermann, based on the cash flows in the Series-C Model (with DT's adjustment to the terminal growth rate), yielded a value of USD 1.78 billion for 100% of Devas using a 20% discount rate. By contrast, the price DT Asia actually paid for the shares was based on a value of USD 375 million, i.e. approximately 80% lower than the alleged DCF value. In other words, DT did not base the purchase price of the Devas's shares on its DCF analysis. These "real world" DCF analyses are hence of limited value to the Tribunal when considering the appropriateness of the DCF method.

> 209. In conclusion, the lack of operating history, customers and profitability and the relatively early stage of the project lead the Tribunal to the conclusion that the DCF method cannot form the basis for the quantification of the Claimant's damages. This conclusion takes into account but does not view as determinative the uncertainty regarding the WPC license which would have been necessary to roll out the proposed services and, therefore, generate profits. Accordingly, the Tribunal discards the DCF valuation put forward by FTI which, in light of the objective factors just mentioned, would be subject to excessive uncertainties, contingencies and hypotheses, and would not provide "a basis upon which the Tribunal [could], with reasonable confidence, estimate the extent of the loss".
>
> [Footnotes omitted]

6. The telling undisputed facts regarding the Devas business that impelled the DT Tribunal and the ICC Tribunal to hold against the application of the DCF method, which are also germane to the instant case, are summarized below for ease of reference.

a. The DT Tribunal advances the following reasons:

i. No track record of profitability;

ii. Devas is not a going concern;

iii. Its proposed business has not started;

iv. Its business lacks any customer base;

v. Its cost levels are untested;

vi. It has not generated any revenues;

vii. Devas lacked the WPC license, the issue of which was uncertain on the valuation date; and

viii. Future expected profits could not be established with the required degree of certainty, as projections would be subject to many possibilities and hypotheses and, therefore, turn out to be speculative.

b. The ICC Tribunal advances the following reasons:

i. Devas business did not have any cash flow;

ii. There are no businesses that could be compared with the Devas proposed business to predict future profits;

iii. The demand for Devas services is unclear;

iv. The prices that it would be able to profitably charge is unclear;

v. Market(s) for multimedia broadcasting services can be highly innovative and cause (even very profitable) products and services to quickly become obsolete;

vi. Devas faced significant competition for the services that it proposed to provide;

vii. Small variations in the assumption used in the DCF methodology can dramatically and unrealistically change Devas' value by millions of Dollars. For illustration, it referred to the following factors (paragraph 371 of the ICC Award):

1. Delay in the launch date by a year decreases Devas' value by USD 352 million (or 22%);

2. Having 10% higher costs decreases its value by USD 473 million (or 30%);

3. Charging 10% lower prices decreases its value by USD 488 million (or 31%); and

4. Increasing the discount rate from 26.3% to 21.1% decreases its value by about USD 1 billion (or 63%).

7. The aforesaid factors, on the basis of which the DCF method was discarded by the aforesaid two tribunals, including the undisputed and unassailable fact that Devas is not an ongoing profit-making concern and being a pre-revenue entity generates no cash flow, are common to all the three matters, i.e., the ICC arbitration, the PCA DT arbitration and the instant arbitration. In normal course, same facts must yield the same outcome.

8. The ICC and DT Tribunals did not find any scope for making an exception to the World Bank Guidelines to determine the FMV of Devas as there is no reliable

alternative guide to determine what the future earnings of its business are likely to be. The contract between Devas and Antrix Corporation Ltd (Antrix) does not guarantee minimum payments nor are there any statutes or regulations that specify the prices that may be charged for the relevant goods or services. There is no evidence of Devas having made efforts to create a customer base in India, which means no guarantee of future operations resulting in profits.

III. Rejection of a DCF Approach by Other International Arbitral Tribunals

9. The international arbitral tribunals, adhering to the World Bank Guidelines, have overwhelmingly discarded the DCF valuation in expropriation cases where the claimants were not going concerns and had no history or proven record of profitability or had insufficient history of profitability. Relevant extracts from such cases that were cited and some of the cases that were not cited but were referred in the cited cases are being set out with a brief summary of pertinent facts, wherever found necessary, to highlight the context in which decisions in those cases were made along with observations:

i. In *AIG Capital Partners et.al. v. Kazakhstan ICSID, Case No. ARB/01/6, Award, 7 October 2003*, the tribunal declined to apply the DCF analysis to calculate its FMV as it was not an income generating entity and in existence for a sufficient period of time. Going by section 6 of the World Bank Regulations, it observed as follows:

> 12.1.10 The Appropriateness of the DCF Method of Valuation in the Present Case. The Claimants and their experts have propounded the DCF method of valuation and have based their entire claim of lost profits on calculations in accordance with that method. This is stated to be justified – on the assumption that the investment or enterprise taken was a "going concern". The definition of "going concern" given by the World Bank in its publication Legal Framework for the Treatment of Foreign Investments (Volume II – Guidelines, item 42. p. 26) is the following:
>
> For a going concern, i.e., enterprise consisting of income producing assets and already in existence for a sufficient period of time to generate the data necessary for proving its profitability and calculation, with reasonable certainty, of its income in future years (on the assumption that taking did not occur). Section 6 of the Guidelines suggests that discounted cash flow may represent an acceptable method of valuation.
>
> In the present case, the enterprise did not exist as an income generating entity at all, and since it did not exist for a sufficient period of time, it could not generate business data necessary for proving its profitability with reasonable certainty.
>
> In the case in hand [...] the parameters of the DCF formula require that projected revenues (a vital element in the DCF computation) have to be

> based on some actual revenues earned. Not only is there no evidence of any revenues earned or profits derived from the project.
>
> […]
>
> 12.2 International Arbitration Practice as to "a Realistic Proof of Future Profits"
> International arbitral practice over the years (in the form of published awards) has uniformly rejected the adoption of the DCF valuation method – a method intended to determine the present value of future earnings expected to be generated by the investment during a prolonged projected period – where the enterprise or project has not been an "ongoing" one. (Emphasis supplied)

ii. In the case of *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt, ICSID Case No. ARB/84/3, Award on the Merits, 20 May 1992*, the tribunal did not apply the DCF method to determine the compensation claim of the claimant on cancellation of the contract by the State for development of Pyramid's and Ras El Hekma Zones, albeit some work had been executed, as it was found that the project was not in existence for a sufficient period of time and there was very little history for grounding the projected revenues. The relevant parts of the award read as follows:

> […]
>
> 61. Construction began at the Pyramids site in July of 1977. Roads were laid, water and sewage trunk mains were installed, excavation for artificial lakes and a golf course was undertaken, and work on the main water reservoir was nearly completed. Planning was completed for the Pyramids Oasis George V. Hotel, as were the designs for a second hotel. In addition, ETDC sold 386 lots on which villas and multi- family accommodation were to be built, for a total of US $10,211,000.
>
> […]
>
> DCF Approach
>
> […]
>
> 185. To project revenues into the future, the Claimants used the actual lot sales made during the project's lifetime. On this basis, they estimate that the project would have generated total net profits after tax of US $312,200,000 over the first eighteen years. Using a 20 percent discount rate, the Claimants then discount the net profits figure to a present value of US $80,100,000 which, the Claimants say, is the present value of the projected total net profits after tax for the first eighteen years of the project. This figure is then adjusted downward to US $ 68,500,000 to reflect ETDC's other recorded assets and liabilities. Since SPP (ME)'s share of ETDC was 60 percent, the Claimants claim 60 percent of US $ 68,500,000 or US$41,000,000 as the value of SPP (ME)'s equity in ETDC at the time that the project was terminated.
>
> […]
>
> 188. In the Tribunal's view, the DCF method is not appropriate for determining the fair compensation in this case because the project was not in existence for a sufficient period of time to generate the data necessary for a

meaningful DCF calculation. At the time the project was cancelled, only 386 lots – or about 6 percent of the total – had been sold. All of the other lot sales underlying the revenue projections in the Claimants' DCF calculation are hypothetical. The project was in its infancy and there is very little history on which to base projected revenues. (Emphasis supplied)

189. In these circumstances, the application of the DCF method would, in the Tribunal's view, result in awarding "possible but contingent and undeterminate damage which, in accordance with the jurisprudence of arbitral tribunals, cannot be taken into account."(Chorzow Factory Case, Series A, No. 17,1928 at p. 51) As the Tribunal in Amoco case observed:

One of the best settled rules of the law on international responsibility of states is that no reparation for speculative or uncertain damage can be awarded." (op.cit., para 238)

[...]

iii. In *Metalclad Corporation v. The United Mexican State, 16 (1) ICSID Case No. ARB (AF) /97/1.*, [Ex. CL-23] a claim for compensation was raised by the claimant, Metalclad, a U.S. Corporation operating through a Mexican subsidiary, which had completed construction of a hazardous waste landfill in the village of La Pedrera, Municipality of Guadalcazar, Mexico, pursuant to the permit received from the Mexican Federal Government. During the construction, the claimant was notified by the Municipality of Guadalcazar that it was unlawfully operating without a municipal construction permit. The claimant applied for a municipal permit but the application was rejected, thus, barring the operation of the completed facility. Besides, the Governor issued an ecological decree declaring the area as a protected natural area, which included the landfill site. It is noteworthy that even though the claimant had completed the project, its request for utilisation of the DCF formula for working out the DCF was not granted by the ICSID tribunal on the ground that it had not operated for a sufficiently long time to establish performance record and to generate profits. In this regard the relevant observations of the tribunal read as follows:

119. Normally, the fair market value of a going concern which has a history of profitable operation may be based on an estimate of future profits subject to a discounted cash flow analysis. (Benvenuti and Bonfant Srl v. The Government of the People's Republic of Congo, 1 ICSID Reports 330; 21 I.L.M. 758; AGIP SPA v. The Government of the People's Republic of Congo, 1 ICSID Reports 306; 21 I.L.M. 737).

120. However, where the enterprise has not operated for a sufficiently long time to establish a performance record or where it has failed to make a profit, future profits can't be used to determine going concern or fair market value. In Sola Tiles, Inc. v. Iran (1987) (14 Iran-U.S.C.T.R. 224, 240-42; 83

I.L.R. 460, (480-481), the Iran-U.S. Claims Tribunal pointed to the importance in relation to a company's value of "its business reputation and the relationship it has established with its suppliers and customers". Similarly, in Asian Agricultural Products v. Sri Lanka (4 ICSID Reports 246 (1990) at 292), another ICSID Tribunal observed, in dealing with the comparable problem of the assessment of the value of good will, that its ascertainment "requires the prior presence on the market for at least two or three years which is the minimum period needed in order to establish continuing business connections".

121. <u>The tribunal agrees with Mexico that a discounted cash flow analysis is inappropriate in the present case because the landfill was never operative and any award based on future profits would be wholly speculative.</u> (Emphasis supplied)

iv. In the case of *Mohammad Ammar Al-Bahloul v. Tajikistan, SCC Case No. V (064/2008) partial award, 2 September 2008* [Case cited in Bear Creek Corporation v. Republic of Peru, ICSID Case no. ARB/14/21 Award, 30 November 2017, R-224] <u>the arbitral tribunal in the following part of its partial award on jurisdiction and liability inter-alia held that the respondent breached its obligation owed to the claimant under Article 10(1) of the Energy Charter Treaty by failing to issue licences in its favour pursuant to four hydrocarbon exploration agreements</u>:

263. The four December 2000 Agreements contain a clear and unconditional obligation on the part of the State Committee, as a party to the Agreements, to ensure the issuance of licenses to Claimant necessary for the commencement of exploration work in the four respective areas.

264. The licenses were not forthcoming. The Agreements were for an unlimited duration (Article 10 of each Agreements states that it "acts without period restriction"). There is no indication that they were terminated or revoked.

265. Claimant has therefore established a prima facie breach of contract and, consequently a breach of the State's duty to observe its obligation entered into with an Investor.

Notwithstanding, the above finding, in the final award dated 8 June 2010, the arbitral tribunal keeping in view Section (6) part (iv) of the World Bank Guidelines and precedents, didn't apply the DCF methodology as the claimant had not started operations and had not derived any income from the projected business. The relevant observations read as under:

71. As a general rule assets need to qualify as a going concern and have proven record of profitability in order to be valued in accordance with the DCF method. The World Bank defines 'a going concern' as follows:

[…]

72. <u>The Tribunal notes that in other cases, investment treaty tribunals have rejected the application of the DCF-method where the project had not even</u>

started but was in a planning stage or had not operated for less than two years. (Emphasis supplied)

73. The four Agreements with respect to which Claimant was entitled to receive licenses do not meet the standard for a going concern. The Respondent had denied to the Claimant the licenses necessary for starting exploration and Claimant had started neither exploration nor production. No oil or gas has been produced or even found by Claimant, and no income has been derived from any of the four areas. In fact, insofar as the Tribunal is aware, since the conclusion of the Agreements Claimant has not pursued any activities in the four project areas. The calculation of damages is thus an entirely forward-looking analysis without any past record of profitability.

On parity of reasoning, Devas does not qualify to be considered as a going concern as no income was derived from the allocation of S-band spectrum by Devas and there was no agreement that entitled Devas to receive WPC licence.

v. In *Caratube International Oil Company and Devincci Salah Hourani v. Kazakistan . 2017,(ii) ICSID case no. ARB/13/13, award, 27 September 2017 (APP.EO-138),* the tribunal rejected the DCF method to compute FMV, holding that it was not established in terms of the World Bank Guidelines that the claimant was a going concern as there was no history of profitability, though by the time the oil exploration contract was cancelled by the respondent, the claimant was in existence for five years and it had earned some revenue but had not realized profits. The relevant parts of the award of the tribunal depicting this position state as under:

[…]

1094. The Tribunal recognizes that the DCF method is widely accepted as an appropriate method to assess the lost profits of going concerns with a proven record of profitability. In this regard, it is worth mentioning the World Bank Guidelines, cited by both Parties, which suggest that the market value of an expropriated investment may be determined "for a going concern with a proven record of profitability, on the basis of the discounted cash flow value".

1095. However, in the opinion of the Tribunal, the Claimants have not convincingly established that CIOC ever was a going concern with a proven record of profitability. […] (Emphasis supplied)

[…]

1097. It is not disputed that, at the time of the termination of the Contract, CIOC had been in existence and performed the Contract for just over five years. It also appears undisputed that, while CIOC had realized (and reinvested) a certain amount of revenues from oil sales produced during the Contract's trial production program, CIOC had not realized profits, but has a record of negative cash flows and a record of accounting losses during the performance of the Contract. […] Therefore, for the Tribunal, the Claimants have not convincingly established that CIOC was a going concern with a proven record of profitability. […] (Emphasis supplied)

10. Thus, for the application of the DCF method for the determination of the valuation of an entity on the date of the taking, it must be shown that it was a going concern with proven record of profitability. Devas does not fit into this description of a going concern as it has not adduced even a shred of evidence to show that it is a going concern with historical data of profitability. There is not even a reasonable certainty of future profits. The edifice on which theory of future profits is built by the Claimant, is on the foundation of speculation and not on an income producing asset that has been in operation for a sufficient period of time.

vi. In *Bear Creek Mining Corporation v. Republic of Peru (ICSID Case No. ARB/14/21 [Ex. R-224]*, the Republic of Peru enacted Supreme Decree 083 dated 29 November 2007, declaring that Santa Ana Project was a public necessity and authorising the claimant, a Canadian Mining Company to acquire, own and operate mining concessions and to execute any rights derived from ownership [see para 149 of the award]. This was opposed by local communities, including by violent protests. On 24 June 2011, the Government of Peru revoked the earlier Supreme Decree 083 by enacting Supreme Decree 032-2011-EM. Aggrieved by the aforesaid action, the claimant filed a claim against Peru, inter-alia, on the ground that the Supreme Decree 032 resulted in expropriation of its investment in breach of the Peru-Canada Free Trade Agreement. The claimant computed the damages in the sum of USD 522 million by applying the DCF method. claimant's experts of FTI, determined Santa Ana's FMV value to be USD 224.2 million as on 23 June 2011 or, under the alternative long-term commodities price, USD 333.7 million [see para 605 of the award]. The arbitral tribunal found that the claimant was not a going concern and lacked history of profitability as also many government approvals were not received by it. The relevant observations of the tribunal:

> 589. [...] features that make any measure other than the value of amounts invested highly speculative. [...] Even assuming that the Tribunal finds that Respondent's measures breached the FTA, witness testimony demonstrated that the lack of social license alone would have led to the Santa Project's failure. [...]
>
> 590. According to <u>longstanding international law precedent</u>, calculating damages using an income-based method-like FTI's DCF approach – is too speculative and, therefore, inappropriate, for an asset that is not a "going concern" or that lacks a history of profitability. [...] (Emphasis supplied)

591. Neither of the cases that Claimant cites- Vivendi II v. Argentina (1) ICSID Case No. ARB/97/3 Award, 21 November 2000 and Gold Reserve v. Venezuela ICSID Case No.ARB(AF) Inc /09/1] supports the proposition that a DCF analysis is the preferable method of valuing a pre-revenue project. Vivendi II unambiguously rejected the use of the DCF method to value the early-stage asset at issue in that case and awarded damages based on Claimant's amounts invested, due to the speculative nature of assumptions and projections. That case, however, involved a far more predictable asset that Claimant's non-existent silver mines: a water services utility that had been in operation for over two years under a 30-year concession contract.

592. Unlike the case at hand, in Gold Reserve v. Venezuela, <u>both parties used the DCF method for assessing the quantum of damages and agreed on the DCF model used. That tribunal merely applied the agreed upon valuation method. […]</u>

[…] (Emphasis supplied)

600. The Tribunal notes that the Santa Ana Project was still at an early stage and <u>that it had not received many of the government approvals and environmental permits it needed to proceed. On the basis of the evidence before it, the Tribunal concludes that there was little prospect for the Project to obtain the necessary social license to allow it to proceed to operation</u>, even assuming it had received all necessary environmental and other permits. <u>The Tribunal notes that no similar projects operated in the same area, and there was no evidence to support a track record of successful operation or profitability in the future.</u> (Emphasis supplied)

[…]

604. In view of the above consideration, the Tribunal concludes that the calculation of Claimant's damages in the present case cannot be carried out by reference to the potential expected profitability of the Santa Ana Project and the DCF method. The Project remained too speculative and uncertain to allow such a method to be utilized. Instead, <u>the Tribunal concludes that the measure of damages should be made by reference to the amounts actually invested by Claimant.</u> (Emphasis supplied)

vii. In the case of *Wena Hotels Limited v. Arab Republic of Egypt, ICSID Case No. ARB/98/4, Award, 8 December 2000*, agreements were executed between Wena Hotels (Wena), a British company, and Egyptian Hotels Company (EHC), affiliated to General Public Sector Authority for Tourism, whereby EHC leased Luxor Hotel for 21.5 years and El Nile Hotel for 25 years to Wena in Egypt. In the terms of the agreements, Wena was to develop, manage and operate the hotels. Soon thereafter disputes arose between the parties. Wena alleged breach of agreements by EHC resulting in expropriation of its investment. Wena raised claims on account of alleged lost profits, lost opportunities and reinstatement costs. It urged the tribunal to utilise DCF analysis for its claims for lost profits [for facts, see paras 17-19 of the award]. The tribunal discarded the DCF analysis due to insufficient "*solid base on which to found any* *profit or for predicting growth or expansion of the investment made by Wena"* [see para 124 of the award]. The tribunal also found that:

> 123. Wena's claims for lost profits (using a discounted cash flow analysis), lost opportunities and reinstatement costs are inappropriate -because an award based on such claims would be too speculative. [...]

11. The tribunal in support of the aforesaid view cited Metalclad [Metalclad Corporation v. United Mexican States, ICSID Case No. ARB (AF)/97/1(2000) paras 119-120] and SSP (South Pacific Properties Middle East) Ltd. Hong Kong et al. v. Arab Republic of Egypt [para 187, ICSID Case ARB/84/3 Award on Merits, 20 May 1992.]

viii. In the case of *Hassan Awdi, Enterprise Business Consultants, Inc. and Alfa El Corporation v. Romania [ICSID Case No. ARB/10/13, Award, 2 March 2015],* the claimants, an American citizen and his two companies incorporated in Delaware, USA, on the one side and the Romanian Authority for the State Assets Recovery (AVAS) on the other side executed the Privatisation Contract on 23 December 2003 for the sale and purchase of shares of Rodipet, a privatised press distribution company. Under the contract, AVAS undertook that Romania would extinguish tax liabilities and debts of Rodipet and grant to it a 49-year concession over land housing press distribution, whereas the claimants undertook to raise EUR 2 million in capital for Rodipet and EUR 3.75 million for technical investment etc. Disputes emanated on termination of the Privatization Contract by Romania resulting in revocation of the concession and taking control over claimants' indirect shareholding in the company. The claimants' plea for application of the DCF method for valuation of lost asset was not acceded to by the tribunal as Rodipet was not a going concern and was not making profits, rather it had a history of losses.

> 514. [...] The application of the DCF method relied upon by Claimants as 'the most appropriate way to determine the fair market value' is not justified in the circumstances. This is because Rodipet is not a going concern, it has a history of losses. There are moreover uncertainties regarding future income and costs of an investment in this industry in the Romanian market. [footnotes omitted]

ix. In *Waguih Elie George Siag and Clorinda Vecchi v. The Arab Republic of Egypt, [ICSID Case No. ARB/05/15, Award 1 June 2009 (CL-32)]*, the claimant had made substantial investment in the project but its business was young and lacked long track record of an established trading. The tribunal endorsed the generally acceptable view that in respect of an early business with insufficient track record of an established trading business, use of the DCF method is not appropriate. The relevant part of the Award reads as under:

> 566. However, while the Tribunal is satisfied that the Claimants' investment was a substantial one, and one considerably more valuable than portrayed by Egypt, the Tribunal is not satisfied that it was an investment which lends itself to a robust DCF analysis.
>
> 570. Points such as those just mentioned tend to reinforce the wisdom in the established reluctance of tribunals such as this one to utilize DCF analyses for "young" businesses lacking a long track record of established trading. In all probability that reluctance ought to be even more pronounced in cases such as the present where the business is still in its relatively early development phase and has no trading history at all. The tribunal accepts Egypt's submission that authorities are generally against the use of DCF analysis in circumstances such as the present [...] profit generating.

x. In *Achmea B.V. v. Slovakia, [PCA No. 2008-133, Final Award (CL-100)]*, the tribunal held against the use of DCF method, inter-alia, on the ground that:

> 325. [...] the investment was in its early stages, in years that saw the very considerable disruption caused by various global economic crises. With a very short track record it is difficult to extrapolate to a robust estimate of the probable future value of Claimant's investment. [...]

xi. In the case of *Tecnicas Medioambientales Tecmed S.A. v. Mexico, [ICSID Case No. ARB(AF)/00/2, Award, 29 May 2003 (CL-117)]*, utilisation of cash flow analysis was not resorted to by the tribunal. In this regard the tribunal observed as under:

> 186. [...] The non-relevance of the brief history of operation of the Landfill by Cytrar —a little more than two years— and the difficulties in obtaining objective data allowing for application of the discounted cash flow method on the basis of estimates for a protracted future, not less than 15 years, together with the fact that such future cash flow also depends upon investments to be made — building of seven additional cells— in the long term, lead the Arbitral Tribunal to disregard such methodology to determine the relief to be awarded to the Claimant.

xii. In the case of *Senor Tza Yap Shum v. Peru,[ICSID Case No. ARB/07/6, Award 7 July 2011 (CL-141 / R-90)]*, the tribunal for the following reasons rejected the use of the DCF method to assess the damages for the alleged loss caused to the claimant, a Chinese national dealing in the purchase and export of fishmeal, by expropriatory action of the Peru's tax authority against TSG Peru:

> 261. [...] on the date on which the measures were put into effect (January 2005), TSG has only been operating for three years, of which the first two gave negative results and only in the second fishing season of 2004 did the business achieve positive cash flow. [...] [Claimant's unofficial translation from Spanish][footnotes omitted]
>
> [...]
>
> 263. [...] a valuation method like DCF, which presupposes a predictable future and long-term operating capacity of the investment, cannot be chosen. The dearth of evidence on the existence of a history of profitability of the activity of TSG implies that the projected positive results of TSG lack certainty. (Respondent's unofficial translation from Spanish original) [footnotes omitted]

12. Thus, there is ample authority for the proposition that to support a credible DCF valuation claim, the entity must establish that the projected revenue is based on a sufficiently long history of profitability. In the case of Devas, this vital element for DCF computation is missing. Claimants have not led any evidence to show that Devas had created a customer base in India or had the expertise to launch the proposed services.

IV. The Claimants' Arguments and Supporting Case Law

13. It was urged that DT, one of the shareholders of Devas, has a history of profitability and is well known in the field of telecommunication for its experience and expertise. The majority award has accepted the contention of the Claimants. First of all, it is the business entity which is required to have history of profitability and not its shareholder. In case the argument of the Claimants is accepted, every new pre-revenue entity will claim its valuation by adoption of the DCF method on the ground of the profitability or cash flow of its shareholders in their individual businesses. Cash flow or profitability of its shareholders in their individual businesses is not a barometer to measure its (new entity's) future cash flows or profits. Secondly, the Claimants have not led evidence to establish that DT has experience of and expertise in LTE-LD technology and e-MBMS services. The evidence reveals that DT has not deployed LTE-TD technology. There is also no evidence to show that DT had experience of and expertise in the business of hybrid satellite-terrestrial communications. Rather it is the admitted case of the Claimants that hybrid satellite terrestrial business was novel for DT, as it was focussed on traditional telecommunication models using fixed line or mobile services (Term

Sheet R226). For DT it was a new business. The majority award proceeds on the assumption that DT would have the capacity to adapt to the new technology. These are mere assumptions and conjectures. The determination of the valuation of the business of Devas on the valuation date by DCF analysis on such assumptions is highly speculative in nature and lacks certainty. This aspect will be dealt with in the later part of this dissenting opinion. Thirdly, even if DT is to be considered as second self of Devas or its alter-ego, there is no evidence to indicate that it has a customer base and transborder reputation in India.

14. The Claimants in support of their plea for application of the DCF method for valuation of Devas have placed reliance on the awards rendered in the following cases, which can be appreciated in their proper perspective by looking at the factual settings in which they were rendered:

i. *Gemplus S.A. v. Mexico; Talsud S.A. v. Mexico, [ICSID Case Nos. ARB (AF)/04/3 & ARB (AF)/04/4, Award (CL-15)]*

15. In this case, claims resulted from the revocation of concession granted by the respondent to the claimant to operate a National Vehicle Registry, known as Renave. The tribunal did not consider the DCF method to be an appropriate methodology as at the valuation date, the Concessionaire did not have any significant or reliable track-record as a business, or 'going concern and accordingly it rejected the claimants' case based on DCF formulation but assessed the Concessionaires' reasonably anticipated loss of future profits on the basis of a modified form of the income-based approach. Observations of the tribunal read as follows:

> Para 13-70: 'No Going Concern'-. As at the relevant date for valuation (24 June 2001), the Concessionaire was not operating as a going concern in the form envisaged at the time of the Concession Agreement [...] Moreover, as a business, the Concessionaire had barely progressed beyond start-up operations by 15 September 2000, at which time it began its suspended half-life until 24 June 2001. The Concessionaire had therefore no significant or reliable track-record as a business, or 'going concern' by 24 June 2001, as that business was originally conceived under the Concession Agreement.
>
> 13-72: DCF Method: The Tribunal does not consider the DCF method to be an appropriate methodology to apply on the facts of the present case; and it rejects the Claimant's case on the use of the DCF method. The Tribunal accepts the Respondent's submission to the effect that the status of the Concessionaire as a business, during the period from August/September 2000 up to the relevant valuation date of 24 June 2001, was far too uncertain and incomplete to provide any sufficient factual basis for the DCF method. [...]

13-74: Underlying Data: At the main hearing, the Respondent's expert witness, Mr.Rion of PRA, whilst disagreeing with the use of the DCF method, did not dispute the accuracy of much of the underlying data used by LECG/Horwath. This material consensus between the Parties' quantum experts was summarized in the Claimants' post-hearing submission, as follows [at para. 39-40]:"In cross-examination, Mr. Rion conceded the accuracy of the background information and assumption used by LCEG, the financial history and Business Plan, the existence of a track record and even the status of Renave as a going concern as at 20 August 2000. (D7.1469, 14 to 1470, 2;1473,9; 1475,1 to 1476,3; 1477,8 to 1478,4; other references in D7.1478, further references in D7.1479; 1480; 1481; 1485; 1488; 1493; 1494; 1495; 1502; 1504,5-9; 1512, 16-21 (track record) and D.7, 1513.1-1515,6 (going concern). In light of these concessions, all the basic data relied on by LECG for the purposes of proposing an income approach for the question of valuation using the discounted cash flow (DCF) method, have been validated by the Respondent's expert. They must be taken as admitted." (Emphasis supplied)

Para 13-75: The Tribunal's Approach: Having rejected the Parties' respective primary cases, as to their respective DCF and Non-DCF methods, it is necessary for the Tribunal to steer an appropriate middle course, between Scylla and Charybdis, given the Tribunal's firm view that the Claimants' share in the concession must be valued by reference (inter alia) to the Concessionaire's reasonably anticipated loss of future profits assessed as at 24 June 2001, i.e. a modified form of the income-based approach using much of the LCEG/Horwath underlying data, albeit not using its DCF method.

16. It is important to note that respondent's expert witness, Mr. Rion did not dispute the accuracy of much of the underlying data used by the claimants' experts, LECG/Horwath. In the matter before this tribunal, there is no agreed data on the basis of which DCF calculations can be made. (Emphasis supplied)

ii. *Himpurna California Energy Ltd. v. PT. (Persero) Perusahaan Listruik Negara [award, 4 May 1999 Final Award (CL-16)]*

17. From the facts of Himpurana, as stated in the award, it would be clear that it has no application to the matter in hand. The claim in Himpurana arose under the Energy Sales Contract (ESC), entered into by and between the claimant and the respondent. The claimant under the agreement was to supply electricity from Dieng Geo Thermal Field to Perusahaan Listruik Negara (PLN), Indonesia Electricity Corporation for a period of 30 years. As per the agreement, the claimant in order to execute the contract obtained a large credit facility from a consortium of banks for the implementation of the contract. It purchased a large amount of equipment and land use rights from local owners, erected steam gathering systems and generating facilities, and carried out engineering, design and analysis. It drilled five temperature core holes and 19 full sized wells. The claimant completed 60 MW generating plant Dieng unit 1. The claimant claimed to have invested USD 315 million in the project. While it was constructing Dieng Unit 2 of 80 MW and had

arranged finances for Unit 3 and 4, the PLN repudiated the contract on the ground of unprecedented economic adversity. Before the repudiation, it is significant to note that power was available for delivery to PLN from generating plant Dieng Unit 1, but the respondent did not avail of the same and did not pay the invoices raised by the claimant. As per the terms of the agreement, PLN was obliged to commence payments to the claimant from the "Date of First Operation" for all electricity delivered or made available. Thus, it is evident that at the time of termination of the contract by the respondent in the projects' first operational year, Dieng unit 1 was already generating energy, which created a revenue earning stream. In the facts and circumstances of the case, the tribunal awarded lucrum cessans by adjusting the DCF computations. (Emphasis supplied)

The relevant extracts read as follows:

> 22. By the time the present dispute arose, the Claimant had completed construction of a 60 MW generating plant referred to as Dieng Unit 1 and was in the process of constructing the 80 MW Dieng Unit 2, and had arranged for financing for Dieng Unit 3 and.
>
> [...]
>
> 576. The Arbitral Tribunal is not aware of any instances of international arbitral tribunals carrying out their own DCF computations to replace those presented by one of the parties. [...]
>
> 579. The present Arbitral Tribunal wishes to be transparent in both its reasoning and its computations, fully recognizing the limitations of an exercise where risks, costs and revenues are conjectural, controversial and imperfectly synchronised. The Arbitral Tribunal has followed three lodestars: (i) the DCF method is adopted in accordance with the understanding articulated above in paragraphs 438-448; (ii) the Claimants must bear the burden of demonstrating the validity of its hypothesis; (iii) the infirmities perceived by the Arbitral Tribunal with respect to those hypothesis have resulted in a recomputation which the arbitrators fully realise is imprecise, but which seeks to avoid arbitrariness by compelling a thorough consideration of all relevant factors, all the while being conclusion of erring, whenever imprecision is inevitable, in favour of PLN. Thus, doubts have been resolved equitably in favour of the debtor.
>
> 580. There is no reason to apologise for the facts that this approach involves approximation; they are inherent and inevitable. Not can it be criticized as unrealistic or unbusinesslike; it is precisely how business executives must, and do, proceed when they evaluate a going concern. The fact that they use ranges and estimates does not imply abandonment of the discipline of economic analysis not, when adopted by the arbitration, does this method imply abandonment on the discipline of assessing the evidence before them.

18. Unlike Himpurna, Devas does not have any operational business generating revenue. It is not a going concern. There cannot be any quarrel with the adoption of the DCF method to compute lucrum cessans in a case where a going concern is to be evaluated. The planned business of Devas was also marked by risks and

uncertainties about the launch of satellites and the all-important WPC license, which it did not possess and had only contemplated to apply for the grant of the same.

iii. *Kardassopoulos v. Georgia, Fuchs v. Georgia [ICSID Case Nos. ARB/05/18 & ARB/07/15, Award (CL-20)]*

19. In this case, long term concession rights of the joint venture vehicle, GTI Ltd., in respect of over laying of certain oil and gas pipelines to transport oil and gas from Azerbaijan to the Black Sea were cancelled by the respondent but not before execution of certain amount of work on the pipeline by it. The claimants, who had a 50% interest in GTI, raised claims on expropriation of their investment [para 104-108]. As is apparent from the following paragraphs of the award, the tribunal determined the FMV of 50% share of the claimants in GTI on the weighted average of contemplated three comparable transactions

[...]

542. These three transactions are each weighted in order to arrive at a proxy for the FMV of the Claimants' 50% stake in GST. Mr. Kaczmarek originally estimated the total weighted average of these comparables to US$31.3 million [Kaczmarek 1, para 137, table 10]:

Fair Market Value of a 50 Percent Interest in GTI as at 10 November 1995

Valuation Approach	**Weight**	**Valuation**	**Weighted Valuation**
Lease of Gachiani-Supsa-Assets & Rights of AIOC	55%	$32,543,219	$17,898,770
Brown & Root Analysis of Gachiani-Supsa	35%	$30,281,837	$10,596,643
Offer from Velt Energie	10%	$28,100,000	$2,810,000
Total	**100%**		**$31,307,413**

[...]

595. The Tribunal finds the Claimants' approach to valuing the Claimants' 50% interest in GTI's rights, based on the income and the market approaches, to be compelling in this case. The Claimants have also cited several authorities in support of their position that a completed or seriously contemplated transaction offers the best evidence of an asset's FMV.

[…]

603. Accordingly, the Tribunal finds it appropriate in the circumstances of this case to rely on the three comparable, weighted as proposed by the Claimants, to arrive at the FMV of the Claimants' 50% interest in GTI as at 10 November 1995, […]

20. The methodology employed by the aforesaid tribunal to value the shares of the claimants is not relevant to determine the FMV of Devas and the value of its shares held by the Claimants as there is no evidence of any sale transaction of a business comparable to that of Devas.

iv. *Occidental Petroleum Corp. v. Ecuador [ICSID Case No. ARB/06/11, Award (CL-27)]*

21. Occidental Petroleum Corp (OPEC) and Corporacion Estatal Petrolera Ecuatoriana, a state entity, executed a Services Contract on 25 January 1985 under which the claimant provided services relating to the exploration and production of oil in block 15. As per the terms of the Services Contract, on discovery of oil by OPEC it was to be paid for its cost and investment as per various terms and formulae prescribed therein. It was in May 1993, after 8 years of exploration, that OPEC began production of oil from Block 15. On 21 May 1999, the Services Contract was replaced by the Participating Contract executed between OPEC and the Republic of Ecuador through Petroecuador, a state entity, for exploration and exploitation of hydrocarbons in Block 15. Under the Participation Contract, the entire expenditure for exploration and exploitation was to be undertaken by OPEC and it was to share the crude oil with the State as per the formula laid down in the Participation Contract. The claims of OPEC arose, inter-alia, on Ecuador issuing a decree by virtue of which the Participation Contract dated 21 May 1999 was declared to expire on 15 May 2006, resulting in termination of the Participation Contract several years before the expiry of the contractual periods in respect of the different areas.

22. The tribunal applied the DCF method to arrive at compensation payable to OPEC on account of expropriation of its investment by the State. The fact that OPEC was a going concern with a revenue stream and it worked the project for a sufficient number of years thereby generating operating history is reflected from the following paragraphs of the award.

[…]

> 117. The amount of OEPC's participation was determined on the basis of the equation described in the above-referred Clause 8.1 The equation took into account several factors, including the field, the rate of production, and certain agreed-upon percentages. At the end of 2005, OPEC's participation was approximately 70% of the oil produced from Block 15. After payment of expenses, taxes and other assessments, however, between 1999 and 2006, OEPC allegedly received approximately 30% of total net profits.
>
> [...]
>
> 126. The Tribunal observes that when the Participation Contract and the Unitized Fields Joint Operating Agreements were signed in 1999, OEPC was producing approximately 28,000 barrels per day from Block 15. After the signature of these agreements, OEPC began a significant capital expenditure program in Block 15 and allegedly increased daily production from Block 15 from approximately 28,000 barrels per day to over 100,000 barrels per day, a level of production it maintained through 2006. Production from the Eden Yuturi field allegedly accounted for the majority of this increase. During this period, the field was thus brought from being entirely undeveloped to producing 70% of the oil produced from Block 15.
>
> [...]
>
> 708. The Tribunal is of the view that, in this case, the standard economic approach to measuring the fair market value today of a stream of net revenues (i.e., gross revenues minus attendant costs) that can be earned from the operation of a multi-year project such as OEPC's development of block 15 is the calculation of the present value, as of 16 May 2006, of the net benefits, or 'discounted cash flows'. [...]

23. Devas in contrast to OPEC is not a going concern and has no revenue stream. There is no similarity between the OPEC and Devas situations. This being so, the decision rendered by the ICSID tribunal has no application to the instant case.

v. *Rumeli Telekom A.S. v. Kazakhstan, [ICSID Case No. ARB/05/16, Award (CL-29)]*

24. It was claimed by the claimants that the respondent by its various acts and omissions in violation of the Investment Contract expropriated their stake in Kar-Tel, a telecommunication entity, with its revenue reaching approximately USD 60 million with the number of subscribers reaching over 160,000 in 2001 and increasing to 380,000 in 2002. On the contrary, the respondent disputed the figures and alleged breaches of the Investment Contract by the claimants, which led to their removal from management in April 2002 and termination of the Investment Contract in October 2003. It also alleged that Kar-Tel became insolvent, but with the efforts of the new management, bank loans were arranged and new equipment was installed resulting in increase in the number of subscribers. The claimants claimed damages on account of the respondent's act of expropriation of their stake by computing the damages by employing the DCF method. The tribunal in the following paragraphs of the award expressed doubt about Kar-Tel being a going

concern in terms of the World Bank Guidelines and the accuracy of the DCF method of valuation in such a case:

> 810. […]. It is well known that DCF values are to a greater or lesser extent sensitive to the validity of the data on which they are based, such as the inflation rate, the discount rate, the assumptions underlying the predicted cash flows. Claimants' expert's report contains a number of sensitivity analyses which demonstrate that quite small changes in input can materially affect the outcome. For example, the expert's original value of USD 567 million could, depending on various alternative assumptions which might reasonably have been made, have been as much as USD 753 million or as little as USD 451 million. The Tribunal is aware that the sensitivity analyses are used as a cross check on the figure adopted by the expert, and not to invalidate the figure. Nevertheless, they demonstrate that the <u>method must be understood as an approximation</u> which is dependent on the validity of the assumptions, and not as a mechanical calculation which will yield a value whose validity is not open to question. (Emphasis supplied)
>
> 811. This is particularly relevant in a case such as this, where even in October 2003 the enterprise had not been in existence for long enough to have generated the data required for the calculation of future income. This would mean that the enterprise would not be treated as a going concern under the World Bank Guidelines, and would therefore be more suitable for the 'liquidation value' rather than the DCF method of valuation. Kar-Tel would in October 2003 still have been in a relatively immature stage of development, with no established and stable track record of past income from which to predict future income. This would have given rise to considerable doubt about the reliability of the DCF method.

25. That said, the tribunal nevertheless valued the GSM licence, which was won by Kar-Tel by placing a bid of USD 67,500,000 in a competitive auction to operate the mobile telecommunication network, the only asset of the enterprise, by the DCF method, but the tribunal, as would be revealed by its following observations utilised the available historical data:

> 811. Despite this, the application of the 'liquidation value' still makes it necessary to ascribe a value to Kar-Tel's only asset of real value, namely its licence to operate the mobile telecommunication network. On any view that clearly had a value in October 2003 far in excess of its book value. Since the value of that asset was directly linked to its potential to produce future income, there is no realistic alternative to using the DCF method to ascribe a value to it. <u>It is however necessary to recognise the limitations of the DCF method, including the limited reliability of the method without adequate historical data.</u> This is strikingly illustrated by the fact that the DCF valuation by Claimants' expert as at April 2002 produced a revised valuation which implied an enterprise value ('EV') per subscriber of USD 2,500, whereas, according to Respondent's expert the EV for a sale and purchase of a 40% stake in Kar-Tel's competitor K-Cell in February 2002 resulted in an EV between USD 722 and USD 770: analysts at the time produced their own EV's of between USD 500 and USD 600, from which they concluded that the price was on the high side. The discrepancy between the DCF valuation and the EV values is very striking. (Emphasis supplied)
>
> […]

813. In the absence of any more reliable method of valuation, the Tribunal takes as its starting point the base case DCF valuation by Claimants' expert as at October 30, 2003 of USD 227 million for Claimants' 60% stake in Kar-Tel, after repaying the Motorola Loan. <u>This figure assumes historical data derived in part from the period between April 2002 and October 2003, when Kar-Tel was under new management and adequately capitalised. During this period, Kar-Tel had improved its technical base, introduced new billing systems and begun to recover market share. […]</u> (Emphasis supplied)

814. Taking into account all the circumstances described above, the Tribunal concludes that an award of USD 125 million will adequately compensate Claimants for the expropriation of their shares and will give them full reparation for the injury caused by the internationally wrongful acts which the Tribunal has found to have been committed by Respondent. The Tribunal therefore orders Respondent to pay this amount of USD 125 million to Claimants.

815. In reaching this conclusion, the Tribunal has taken note of the evidence (some of which was contested) as to various negotiations which are said to have taken place with regard to the shares in Kar-Tel.

816. Two of these negotiations are said to have involved offers to buy Claimants' shares which were rejected: see paragraphs 138, and 541-547. Since these took place at a time when Claimants had been or were likely to be deprived of the shares, and the offers were rejected by Claimants, the Tribunal does not regard them as relevant to the market value of the shares in October 2003.

817. The third negotiation concerned the sale by Telcom Invest of its 40% stake in Kar-Tel to Claimants in the autumn of 2002: see paragraphs 134-135, 401-403, and 506-510. This reached the stage of a draft agreement for the sale of Telcom Invest's 40% shareholding for USD 12 million. In the end the transaction fell through, but if Telcom Invest was willing to sell its 40% stake for USD 12 million, it can certainly be asked why Claimants' 60% stake should have been worth more than USD 18 million. A number of explanations are possible, the most likely of which is that Telcom Invest and its backers had at that time little or no real knowledge of the mobile telecommunications business and had failed to appreciate the potential value of the licence. The Tribunal does not consider that this evidence can be used as a safe guide to the fair market value of Claimants' shareholding, beyond indicating that the true value of the licence was less obvious in 2002 than it later became: at that time the very rapid growth in the market which began in 2003 had not become established.

26. As has already been pointed out, the tribunal in the aforesaid case took into consideration the historical data that was on record for computing the damages by the DCF process. But in the case of Devas, no such historical data is available. Also, there are no entities like Devas in the host state whose valuation are available on the valuation date.

vi. *Gold Reserve Inc v. Venezuela, [ICSID case no ARB(AF)/09/1 Award, 22 September 2014 (CL107)]*

27. The claimant initiated arbitration for adjudication of its claim for damages against the respondent for terminating the Brisas Mining Concession, Unicornio

Concession and for revoking the partial environmental permit for use on the Brisas Concession and on account of violation of the Venezuela's Bilateral Treaty with Canada (BIT). The tribunal, inter-alia, held that the claimant failed to exploit the minerals within the required timeframe in breach of the concession agreements; the respondent had a contractual right to terminate the concessions on plausible grounds; the acts of termination were in exercise of regulatory powers under the 1999 Mining Law Act and Mining Titles and therefore, not acts of an expropriatory nature, but, the manner in which expropriation was done by the respondent State, seriously breached the FET Standard under Article II(2) of the BIT [see para 667 of that award].

28. The tribunal, as observed in the following paragraph of the award, adopted the DCF method to determine the compensation:

> 830. Claimant's experts have modelled an alternative value based on a weighted average of a DCF valuation, comparable publicly traded company and comparable transactions. Although the Brisas Project was never a functioning mine and therefore did not have a history of cashflow which would lend itself to the DCF model, the Tribunal accepts the explanation of both Dr Burrows (CRA) and Mr Kaczmarek (Navigant) that a DCF method can be reliably used in the instant case because of the commodity nature of the product and detailed mining cashflow analysis previously performed. The Tribunal also notes that the experts agreed on the DCF model used, and it is only the inputs that are contested. Many of these have already been discussed above, with the remaining variables discussed below. […] [footnotes omitted]

29. As is manifest from the aforesaid paragraph of the award, the tribunal considered the lack of history of cash flow of the Brisas Project being unsupportive of the DCF method. But the tribunal accepted the explanation of Dr. Burrows of Charles River Associates and Mr. Bent C Kaczmarek of Navigant, experts representing the respondent and the claimant respectively [see page 23 para 112 for experts], that the DCF method was capable of being relied upon because of the nature of the product. The product being referred to covers gold, copper, and molybdenum won from the ore. The concessionaire under the concession agreements was entitled to extract the said minerals from the specified mines. Gold, Silver etc. are market commodities. [The real time data for their indices are provided by market markers on a regular basis (markets.businessinsider.com, Nasdaq.com)]. A commodity is an exchangeable article of trade. It is exchangeable as distinguished from service. The contemplated business of Devas is in the nature of service. Service cannot be considered as a commodity. In this case, the experts of both sides

agreed on the DCF model. But in the subject arbitration, this not the position. This decision is hardly of any relevance for valuation of Devas.

vii. *Quiborax S.A. and Non-Metallic Minerals S.A. v. Bolivia, [ICSID Case No. B/06/2, Award dated 16 September 2015 (CL-131)]*

30. The tribunal utilised DCF analysis to assess damages suffered by the claimants, Quiborax S.A. and Non Metallic Minerals S.A. (NMM), on account of unlawful expropriation of their investment by a presidential decree, whereby the mining concessions granted to them in certain areas located at the Rio Grande Delta of Gran Salar de Uyuni were revoked [see para 26 of the award]. The tribunal found that before revocation of the concessions, NMM had been operating the mining concessions for about two years for which there was sufficient record of operations [see para 347 of the award]. It relied upon the World Bank Guidelines on the Treatment of Foreign Investment, 2002, according to which the market value of an expropriated investment may be determined for a going concern with proven record of profitability [see para 344 of the award]. The findings of the tribunal in the following paragraph reflect the reasons of the tribunal for the application of the DCF analysis for FMV of NMM:

> 347. […] The record suggests that NMM commenced operating the concessions in late 2001 and commenced sales in 2002. NMM thus operated the concessions for at least two full years, and was operating at the time of the expropriation […] In the Tribunal's view, NMM's mining activity has a sufficient record of operations and prospective profitability to justify applying the DCF method to value the concessions. As discussed in detail below, <u>there is sufficient evidence in the record to make a</u> projection<u> of the future cash flows that would have been generated by the concessions with reasonable certainty</u>. In particular, there is sufficient evidence of the reserve found in the concessions, prospective future sales (arising from the Supply Contract between Quiborax and RIGSSA in 2001) and sufficient information on prospective prices and costs to justify valuing the concessions on the basis of the DCF method. [footnotes omitted] (Emphasis supplied)

31. It is evident that the tribunal applied the DCF formulation to assess the damages as NMM was a going concern. There was sufficient evidence of the reserve found in the concessions, there was evidence of prospective future sales and sufficient information on prospective prices and costs.

32. In contrast to the above ICSID case, Devas is not a going concern, it has no history of profitability, Devas has no customer base anywhere, much less in the host country, and the prices at which prospective customers would have been billed

are not known. Thus, the above ICSID award cannot serve for supporting the use of the DCF method to assess the FMV of Devas.

33. There is another significant aspect which requires attention. The claimants in the ICSID arbitration contended that both NMM and Quiborax were going concerns at the time of the expropriation and therefore, their FMV be established on the basis of the DCF method. The tribunal noted that "there has been expropriation of NMM's investments in Bolivia (i.e., the mining concessions) and of Quibrox's investment in Bolivia (which the tribunal understands to have been mainly its shares in NMM). Hence, Quibrox's FMV as such is irrelevant" [see para 346 of the award]. The tribunal, in other words, considered the concessionaire's status as a going concern to be relevant but not of its shareholder. Therefore, if the concessionaire was not a going concern, it would not have been permissible for it to claim that since its shareholder is a going concern with history of profit making, the concessionaire also acquires the status of a going concern. On the same token DT's alleged status of a profit-making concern in its own business, is not relevant for determining whether Devas qualifies as a going concern so as to be able to claim its valuation by DCF method.

viii. *S.D. Myers Inc. v. Canada, [Second Partial Award dated 21 October 2002(CL- 132)]*

34. The claimant, S.D Myers Inc. (SDMI) a USA based company processes and disposes of Polychlorinated Biphenyl (PCB), a hazardous chemical compound. In 1993, SDMI started its operations in Canada through an affiliated company. In November 1995, the Ministry of Environment, Government of Canada, imposed a ban on export of PCB from Canada. In February 1997, the ban was lifted and Canada opened its border with USA. After the opening of the border, in July 1997 the border was again closed by Canada to the export of PCB and PCB waste material from Canada. SDMI, filed claims against Canada under the UNCITRAL Rules for alleged breach of NAFTA Articles 1102, 1105, 1106 and 1110, inter alia, on the ground that the order banning the export of PCB and PCB waste material from Canada was intended to curtail operations and investment of SDMI in Canada. SDMI also claimed that while it was prohibited from conducting its business of exporting PCB contaminated waste, Canada-based companies were given superior treatment by permitting them to conduct their business in Canada without interference which resulted in loss and damage to it [paras 110,126, 127, 132 and

133 of the first partial award]. The tribunal by its first partial award determined that Canada's ban on PCB exports to USA was in breach of Canada's obligations under Article 1102 and 1105 Chapter 11 of NAFTA. It observed that in so far as Canada's said conduct caused harm to SDMI by injuring its investment in Myers Canada, Canada must pay compensation to SDMI [see para 301 of the first partial award]. In the second partial award, the tribunal determined the compensation payable to SDMI. It took into consideration the fact that SDMI lost profit stream because of the ban imposed by Canada and other factors. The relevant paragraphs of the award read as under:

> 98. SDMI did not invest in Canada to achieve a rate of return solely related to the quantum of its monetary investment. Insofar as it was delayed, it was delayed in making profits and further developing the opportunity to make profits. Some of the Canadian PCB inventory was processed by others while the border was closed. When the border re-opened, some of the remaining inventory that SDMs would have processed was, or would have been, processed by others. SDMI lost the income that it might have obtained from these inventories. Furthermore, SDMI lost income from that part of the inventory that was not lost to others during the closure, but which it might have processed during the nineteen month "window of opportunity" it would have had but for CANADA's export ban. Return of the money that SDMI invested in Canada, or merely paying SDMI a "return" on that investment, would not see it whole. It would not take adequate account of SDMI's potential to earn an income stream.
>
> 99. In reaching this conclusion the Tribunal is not attempting to enunciate any general principles that might serve as precedents in other cases. It is recording its view that the first two of CANADA's alternative approaches would not provide an appropriate measure of compensation on the facts of this particular case.
>
> 100. Subject to consideration of issues concerning direct, indirect or that the consequential damages, remoteness and foreseeability, the Tribunal considers appropriate loss to be addressed in this particular case is the loss of net income stream. This approach formed both the basis of SDMI's principal claim and the third alternative suggested by CANADA. The Tribunal's view is reinforced by the fact that the expert accountants retained by both sides agreed that SDMI's lost income stream is capable of rational assessment, even though they disagreed substantially as to the result that should follow. [footnotes omitted]
>
> [...]
>
> 181. SDMI had an excellent record of profitability and an outstanding record of passing safety audits by regulators and customers. There is no reason to doubt that many potential customers based in Canada would have been impressed by SDMI's record, and that SDMI would have worked hard to maintain that reputation while engaged in its Canadian operations. [footnotes omitted]
>
> 182. Other facts also demonstrated the SDMI's prospects for success in Canada. SDMI had spent a considerable amount of time and effort making the company known to the holders of Canadian PCB's; during the closure over 50% of the Canadian inventory on which SDMI had quoted was processed by others; immediately prior to the closure SDMI was positioned to take advantage of the open border; it clearly had a price advantage over

> any Canadian competition; and there were significant geographical advantages that favoured SDMI.
>
> [...]
>
> 271. The Tribunal also accepts that there are risks inherent in undertaking any new business venture, particularly in uncharted territory, but these risks were diminished somewhat by SDMI's marketing efforts, its reputation and its past experience.

35. As is apparent from the aforesaid observations of the tribunal:

- For determining loss caused to the claimant, Canada had suggested three alternatives, the third alternative mooted by it was in sync with the approach of the tribunal and the basis of SDMI's principal claim that the appropriate loss to be addressed in the case is the loss of net income stream;

- Expert accountants of both <u>sides agreed that lost income stream is capable of rational assessment</u>;

- SDMI had an excellent record of profitability and an outstanding record of passing safety audits by regulators and customers;

- The <u>risk</u> involved in starting a business at a new location was diminished by SDMI's marketing efforts, its reputation and past experience;

- SDMI spent considerable amount of time and effort making the company known to the holders of Canadian PCBs;

- Prior to closure, SDMI was positioned to take advantage of open border;

- SDMI clearly had price advantage over any Canadian competition; and

- There was significant geographical advantage that favoured SDMI.

36. The aforesaid factors contributed to SDMI's prospect of success in Canada. It is also important to note that during the period the border was open from February 1997 to sometime in July 1997, SDMI had entered into seven contracts and in accordance therewith it exported PCB and PCB's waste from Canada to USA for processing at its facility. In view of such strong factors indicating its potential for success in Canada, it was not a case for compensating SDMI with sunk value of its investment along with interest, especially in view of the fact that the expert

accountant of Canada agreed that lost income stream is capable of rational assessment.

37. These important factors were unique to that case and were the basis for the decision of the tribunal. This decision of the tribunal can hardly serve as a precedent in the case of Devas. The first two bullet points above mention the concessions made by Canada, whereas the Republic of India in the present proceedings has not made any concession. Rather it is the stand of the Republic of India that the DCF method is inappropriate to calculate Devas' FMV as it is not a going concern and has no track record or history of profitability. No evidence has been led by the Claimants to establish that the risk element involved in starting the proposed business in India was mitigated by marketing efforts of Devas and with its reputation and past experience. In fact, Devas has not claimed that it has past experience of the contemplated services that it was to offer to the viewers. It has also not made any claim that it is known in India by its reputation or experience. Therefore, for all these reasons the decision rendered in *S.D. Myers Inc. v. Canada* has no application to the case in hand.

ix. *ADC Affiliates Ltd. v. Hungry [Case NO. ARB/03/16 (Cl-1)]*

38. In this case, the claimants, ADC Affiliates and ADC and ADMC Management, Cypriot companies, entered into a contract agreement with Airport Traffic and Airport Administration (ATAA), which was under the administrative control of the Ministry of Transport and Communication and Water Management of the Government of Hungary. As per the terms of the agreement, the claimants were to renovate, construct and operate two terminals of Budapest-Ferihegy International Airport, Hungary. The work was executed in the year 1998. In December 2001, the Hungarian Ministry of Transport issued a decree which led to the takeover of all the activities relating to the operation of the airport from the claimants. As a consequence, the decree resulted in expropriation of the running business of the claimant. Before the issuance of the decree, the claimants had been operating the terminals for about two years from 1998 until the end of 2001. Therefore, this was not a case of pre-revenue enterprise. Another significant fact is that shortly before the issuance of the decree, one Mr. Somogyi-Toth, on behalf of ATAA by its letter of 11 December 2001 approved the business plan of the claimants. The claimant's expert incorporated the said business plan, albeit with minor adjustments, in its 2002 LECG Model, 2004 LECG Model and 2005 LECG Model. The expert relied on

the business plan as the basis for the DCF calculations. The tribunal agreed with the use of the 2002 business plan since prior to the decree, ATAA had itself given its approval to it. In the circumstances, the tribunal was of the view that the 2002 business plan constituted the best evidence before the tribunal of the expectation of the parties at the time of expropriation for the anticipated stream of cash flows [see paras 506-507 of the award]. The following relevant paragraphs of the award reflect the justification for the use of the DCF method in the facts and circumstances of that case:

> 281. The Tribunal accepts that the Project Company performed at the very least in accordance with the projections contained in the business plans agreed from time to time. It is highly significant that the 2002 Business Plan was signed off by Mr. Somogyi-Toth on behalf of the ATAA on December 11, 2001 just days before the event complained of in this arbitration. Further, Mr. Somogyi-Toth fairly confirmed that his duty at ATAA, Mr. Vertes (also a member of Supervisory Board), must have reviewed the 2002 business plan prior to Mr. Somogyi-Toth signing it. (Emphasis supplied)
>
> [...]
>
> 506. One of the Respondent's main criticism concerns LECG's reliance on the 2002 Business Plan of the Project Company (subject to minor adjustments) as a basis for DCF calculations, as incorporated in its own models (the "2002 LECG Model", "2004 LECG Model" and "2005 LECG Model"), because it would not provide a reliable basis on which two based projections as to the future performance of the project company for the purposes of assessing damages.
>
> 507. The Tribunal disagrees since 2002 Business Plan was approved by ATAA in a letter of December 11, 2001, a few days before the Decree was issued that led to expropriation and after five drafts have been discussed between the Quota Shareholders. The 2002 Business Plan, therefore, constitutes the best evidence before the Tribunal of the expectation of the parties at the time of expropriation for the expected stream of cash flows. [...]
>
> 514 In the light of all of the above, the tribunal is fully satisfied that [...] LECG's adoption of the DCF method is fully justified.

39. In the subject case, the business plan of Devas has been neither signed nor endorsed by India on the basis of which DCF calculations were based. In the circumstances, the aforesaid precedent is hardly of any application to the subject arbitration.

x. *Joseph Charles Lemire v. Ukraine [ICSID Case No. ARB/06/18, Award, 28 March 2011 (CL-109)]*

40. The claimant, a US citizen, who was a majority shareholder of Gala Radio, a radio station in Ukraine, felt aggrieved of the actions of Ukraine namely, the alleged violation of the settlement agreement arrived at between the parties, the alleged violation of FET Standard of the 'Treaty Between the United States And Ukraine

Concerning The Encouragement And Reciprocal Protection Of Investment' (the BIT), wrongful acts of the respondent in not granting certain frequency licenses to operate nationwide FM music network and not issuing authorisation to operate AM talk radio channel in breach of FET Standard under the BIT. In so far as the plea based on the alleged violation of the settlement agreement is concerned, the same was negated by the tribunal. In respect of the breach of the BIT relating to non-issue of frequency licenses to operate nationwide FM music channel is concerned, the tribunal adopted the DCF method to determine damages. It is important to note that experts of both sides agreed that that in a case like this, the DCF valuation was appropriate for determining damages [see para 254 of the award].

41. However, as regards the claimant's complaint concerning alleged loss of revenue caused to him by the respondent for its failure to issue the requisite authorisation to operate AM talk radio channel, the tribunal did not find the DCF valuation to be suitable in view of the reasons that:

> 260. […] there is a lack of comparable entities to perform a bottom up calculation of revenues, with the result that the projected income of an AM channel in Ukraine cannot be predicted with a minimum level of certainty;
>
> 261 […] it is impossible to prepare a DCF valuation without an intolerable level of speculation […]

42. It is significant that the experts of both sides agreed that the DCF valuation was appropriate to determine damages caused to the claimant for violation of the FET Standard. As opposed to this, in the present arbitration, this not the position. There is a clear and categorical stance of the Respondent that DCF analysis is inappropriate to arrive at the FMV value of Devas. It is also significant that in the above case, DCF formulation to determine loss of profits for non-issue of authorisation to operate AM talk radio channel was declined, inter-alia, on the ground that there were no comparable entities to forecast the historical income of an AM channel in Ukraine with a minimum level of certainty. In the case of Devas also there are no comparable entities to forecast the historical income of its proposed business. This being so, without historical data of profitability, results based on DCF analysis cannot be relied upon as being highly speculative.

43. The majority award does not consider the use of DCF analysis to establish the value of Devas as inappropriate though Devas has not generated any historical data of operational profitability. It also does not consider it a pre-revenue entity. In addition to the cases mentioned by the Claimants, the majority of this Tribunal

relies on a recent award rendered in the case of *Tethyan Copper PTY Company v. Islamic Republic of Pakistan [ICSID Case NO.ARB/12/1]*. As regards the cases relied by the Claimants are concerned, they have already been dealt with and distinguished. In so far as the Tethyan Copper PTY Company case is concerned, in my view it stands on a different footing from the instant case. Tethyan preferred a claim for compensation for damage caused to it as a result of wrongful denial by the state of the mining lease application, which deprived it to build and operate copper-gold mine at Reko Diq in the district of Baluchistan. Gold and copper are market commodities. As already pointed out while dealing with the case of *Gold Reserve Inc v. Venezuela*, in respect of minerals the real time data for their indices are provided by market markers on regular basis. A commodity is an exchangeable article of trade. The contemplated business of Devas is in the nature of service. Service cannot be considered as a commodity or akin to a commodity. In the majority award, it is observed that "[…] just as in the mining sector, there exists a tested methodology common to all telecom service sellers applied to value their business." [see para 537 of the majority award]. The observation at best, if at all, could apply to revenue earning telecom service sellers and not for evaluating pre-revenue telecom entities. To effectively evaluate a telecommunication company, three essential metrics are used:

- The average revenue per user (APRU) - a metric that measures the average revenue the company generates per user over a given time.
- The churn rate - a metric that measures the number of subscribers that cancel their subscriptions.
- Subscribers growth - a metric that measures how many new customers a company adds over a given time.

44. An investor, in order to evaluate a telecommunication company, will look at quantitative metrics, including assets, liabilities, stock holders' equity, debt and free cash flow [Investopedia updated 27 March 2020]. These metrics are missing in the case of Devas as it is a pre-revenue entity. Therefore, it not possible to arrive at a reliable valuation of Devas by the DCF method.

45. Besides, Devas cannot be compared with revenue earning telecom companies for arriving at its valuation on the valuation date. A contrary argument has been

categorically rejected by the ICC Tribunal in the Devas Multimedia Private Limited case, [Ex. C-258] referred to above. The relevant observations read as under:

> Are the comparable companies and comparable transactions methodologies appropriate?
>
> 376. Nor does the tribunal consider that is appropriate to rely on Mr Kaczmarek's other methodologies, namely the comparable companies and comparable transactions methodologies.377. The "comparable" companies that Mr Kazcmarek relies on are Bharti Airtel and Sirius XM. The tribunal does not consider either company to be comparable. Bharti Airtel is India's largest cellular phone company (in terms of subscribers and market share) and in 2011 it had annual revenue of USD 13.3 billion and a presence in 19 countries [...] By contrast, Devas was a start-up company that had no subscribers and no revenue.
>
> 378. Sirius XM operates in North America, not India, and in circumstances that are materially different to those that Devas would face. [...] It operates in the audio services industry only; and so it does not face some of the technological complexities that Devas would face in operating its broadband wireless services. [...] Further, unlike Devas, it also has an established sales channel that guarantees a given level of subscribers through the sale of new cars, approximately 70% of which have Sirius XM installed [...]
>
> 379. The "comparable" transactions that Mr Kazcmarek relies on are two acquisitions of 20 MHz of S-band spectrum by DISH Network in the United States of America in early 2011. The tribunal does not consider that it is appropriate to compare the value of bandwidth in the United States to the value of Devas' business. The value of bandwidth can differ across borders and industries as it depends on factors such as average revenue per user, subscriber base and income levels of the subscriber base.
>
> 380. The tribunal's view of the comparable companies and transactions methodologies has been fortified by the fact that Mr. Kaczmarek himself has little confidence in them. He testifies that they were "non-traditional in this case" and gave them each a 10% weighting (compared to the DCF methodology's 80% weighting). The fact that he considers them less reliable than the DCF methodology, and the tribunal has no confidence in the DCF methodology, is telling.

46. It may be recalled that the DT Tribunal has expressed doubts about the accuracy of the valuation of Devas based on the DCF formula as the cash flows in the Series-C Model (with DT's adjustment to the terminal growth rate), yielded a value of USD 1.78 billion for 100% of Devas using a 20% discount rate. Contrasting with the price DT Asia actually paid for the shares was based on a value of USD 375 million, which was about 80% lower than the alleged DCF value. Thus, there is a clear indication that DT did not base the purchase price of the Devas' shares on its DCF analysis. The DT Tribunal concluded that "These "real world" DCF analyses are hence of limited value to the Tribunal when considering the appropriateness of the DCF method" [see para 208 of the PCA DT Award].

47. The DT Tribunal has noted in its award that the difficulty in determining the future cash flows of Devas was acknowledged in DT's financial statements of 2008. In view of the said acknowledgment, the DT Tribunal observed that it is difficult to understand how "cash flows could not be reliably determined for accounting purposes but could instead be reliably determined for valuation purposes in this arbitration" [see para 206 of the PCA DT Award]. This significant observation casts a doubt on the assumed cash flows of Devas.

V. Risk Factors and Uncertainties Inherent in Devas' Business

48. The Devas project is associated with hazard of risk and uncertainty. In the facts and circumstances of this case, it is not suitable to make a prognosis regarding the future cash flows of the high-risk Devas business as slight changes in the assumptions, presumptions and probabilities can drastically alter the values. The risk factors and uncertainties are writ large on the face of the record. They are discernible from the extracts culled out from the following documents:

i. Extracts from "Briefing for DT Management Board Meeting on February 19, 2008, dated February 11, 2008" [Ex. R-209]:

<u>Management summary-</u>2 [page 3]

- *There is no well-established track record of BWA, AV and VoIP-Services in India, so no prognosis of subscriber and pricing development is based on extrapolation of past development, but assumption-driven.*
- *Due to greenfield-nature, BP is subject to high level of uncertainty. [...]*
- *From a business perspective, the satellites are not obligatory; however, they are a necessity to obtain the spectrum. Inter-working of the Satellite and terrestrial end-devices require a solution <u>yet to be developed</u>; in the unlikely case of failure, severe repercussions in the relationship to ISRO as the lessor of the Spectrum could arise.*

Management Summary (3) [page 4]
<u>Regulatory Spectrum</u>

*Devas' sole reliance of its spectrum on a contract with ISRO for the lease of capacity on two satellites <u>represents a risk</u>. Potentially problematic is the mixed satellite and terrestrial usage, as regulations stipulate that terrestrial utilization of spectrum requires an authorisation by an authority other than ISRO/DoS, namely the Department of Telecommunications (DoT)***.** *While the contract with ISRO stipulates that it is responsible to secure all regulatory approvals, which according to Devas it has obtained, there is no explicit confirmation from the DoT.*

Potential consequences in this highly regulated market are a dispute between the authorities, possibly initiated by competitors, that could lead to a delay; worst-case scenario would be a severe limitation in flexibility for terrestrial usage, or a total loss of spectrum.

<u>PROJECT SKY-Finance & Valuation (2) [page 11]</u>

Due to the high risk assumed for the start up business in India, a WACC of 20% has been applied. […]

<u>PROJECT SKY-TECHNICAL BACKGROUND (2) [page13]</u>

<u>Terrestrial Component</u>

<u>More than 90% of the Devas business will come from the terrestrial based network(s)</u>

Project Sky- Regulatory Issues (1) *[page 15]*

DT Position: The fundamental concern to DT in the given context is that Indian regulations explicitly stipulate that any ISP-license to obtain 'a separate specific authorization and license _ from the WPC', as the responsible agency for spectrum licensing and management. In addition, guidelines for Telecom Service Providers for Satellite Communications require the licensee to approach the WPC to obtain frequency authorization. […]

Project Sky-Regulatory Issues (2) [page 16]

License Requirements (Cont'd):

Possible scenarios in the given context are:

A. WPC adopts the Devas position and takes the view that only procedural/technical clearances are required by Devas, possibly along with the payment of a fee for use of spectrum.

B. WPC concludes that the regulatory framework is unclear and that before it can come to a decision, relevant rules need to be framed in connection *with the use by private operators of satellite spectrum in conjunction with a hybrid network.*

C. WPC takes the view that Devas is required to obtain a substantive authorization from WPC in connection with the use of spectrum.

Scenario B. and C. would result in a <u>substantial risk</u> that the deployment of the Devas network would get delayed, and perhaps <u>even refused in certain circumstances</u>. Other points of concern are that more generally, India has to be considered as a highly regulated market, and it is difficult to foresee how it will evolve over the near to long-term. It also has to be noted that Devas had unhelpful run-ins with certain important authorities, including the Foreign Direct Investment Board (FIPB), which may put such authorities on notice in future dealings with the company […]

ii. Extracts from "DT Briefing, "Meeting with Devas-Shareholders on 19 February 2008" and "Board Meeting on 19 February, 2008" dated 15 February 2008". [Ex. R-210]

Risks

Spectrum: Devas' key asset is its spectrum's such spectrum, however, is based on the contract with ISRO/DoS that in turn is subject to an unclear regulatory regime.

According to Devas, DoS has full powers to utilize the respective spectrum nationally and contract it to private parties for services. Furthermore, Devas states that ISRO has complied with its contractual obligation to secure all necessary regulatory approvals in the given context.

However, the mixed satellite and terrestrial usage of the spectrum is potentially problematic, as it could fall into an area of overlapping responsibilities of different Indian authorities, namely ISRO/DoS and the Wireless Planning & Coordination Wing (WPC), a wing of the Department of Telecommunications (DoT) and responsible for spectrum licensing and management.

According to legal advice obtained by DT, regulations explicitly stipulate that any ISP-licensee is required to obtain 'a separate specific authorization and license from the WPC'. In addition, guidelines for Telecom Service Providers for Satellite Communications require the licensee to approach the WPC to obtain frequency authorization.

However, DT is not aware of any explicit authorisation by the WPC. This gives rise to concerns as to the possible position WPC may take in this matter. Legal advice lays out that WPC could adopt the Devas position; or it could come to the conclusion that relevant rules first need to be framed in connection with the use by private operators of satellite spectrum in conjunction with a hybrid network, or it could take the view that Devas is required to obtain a substantive authorization, in which case Devas' current approach would be highly questionable.

To get clarity on the matter, DT (Kevin Copp in person, Hamid Akhavan via telephone) did met/talk with the Chairman of the WPC. However, the feedback was non-committal.

Accordingly, DT requested to eliminate any uncertainties by way of confirmatory letter either from WPC directly or from ISRO/DoS, explicitly confirming either the approval from, or the non-responsibility of WPC. This has not been obtained so far and Devas has indicated that, at least at this stage, it is reluctant to approach the authorities with the request for a formal clarification.

Possible ways to address this key-risk factor are: revisit the valuation of US$650M pre-money; and/or make explicit confirmation from ISRO/ and-or WPC a condition to closing; and/or DT commits itself to the US$150m-investment, but only in staged phases upon certain regulatory milestones having been met.

[…]

iii. Extracts from "Briefing for DT Management Board Meeting on 10 August 2009, dated 6 August 2009" [Ex. R-213]

Detailed Proposition: Background

[…]

- *Concretely, the $45m-tranche will be subject to the same risk elements stated in the Board Papers for the initial invest in 2008 (presented 19Feb08 and 11Mar08) and the attached AR-paper. Such risk relate e.g. to the successful launch and operations of the satellite(s); the pending confirmation or license of the telecoms regulator for terrestrial usage of the spectrum; the successful start* *and establishment of Devas' operations and product-offerings; and stricter regulatory requirements with regard to foreign ownership restrictions in the context of the (disclosed) discrepancy between economic and voting shareholding.*

- *The $105m-tranches shall become relevant after the launch of the (initial) satellite and the de facto acceptance by the authorities of the terrestrial spectrum-usage due to their approval of the network rollout. Thereby, the two key-risk elements should have been mitigated.*

- *As previously, the investment would be made via DT's 100% subsidiary DT Asia PTE. Ltd./Singapore. Accordingly, the expression "DT" in this board presentation legally means the investment by DT Asia.*

- *It has to be noted that Devas aims for a Capital-increase of $45m also to secure funding for commitments to be entered into in 2009, but to be paid only in 2010. Accordingly, DT will advance a position to commit $ 40m, but with the aim to pay out according to an agreed cash-flow plan and to a maximum of $20m in 2009, with the remainder in the first quarter 2010.*

49. The aforesaid documents reveal that there was an unabated serious apprehension of delay and high degree of uncertainty in the deployment of Devas network and even refusal of WPC licence by the WPC wing of the Department of Telecommunication. The "Briefing for DT Management Board Meeting on 10 August 2009, dated 6 August 2009" [Ex. R-213] shows that even after the grant of the short-term experimental licence dated 7 May 2009 [Ex. C-65] for the development and testing granted to Devas by the WPC wing and the follow-up experimental testing, the risk relating to terrestrial usage of the spectrum and launch and operations of the satellite(s) was not mitigated. It is manifest from the licence that the assignment was purely temporary and did not confer any right for its regular use. It is more or less affirmed by Dr. Kim Larsen, Senior Vice-President within the Group Technology Department of DT in Bonn office (Germany), appearing as a witness for the Claimant, that the risk elements relating to launch of satellite and terrestrial reuse licence were not allayed. This is apparent from his following response to a question put to him in his cross-examination:

The risk elements would be launch of satellite. It would be certainly the terrestrial reuse licence and so forth [see page 380, lines 8-10 of the agreed final transcript].

50. The Devas business plan envisaged setting up a hybrid satellite-terrestrial communications system [see Statement of Claim, paras 37 and 38]. For the terrestrial use of spectrum through satellite, the WPC license is a requirement under law. The Devas Agreement dated 28 January 2005 [Ex. C-16/JCB-37] did not create any vested right in Devas to secure the WPC license. In other words, the agreement did not create any obligation on the host state to issue WPC license in favour of Devas. There is no record to show that any assurance or commitment was given by any state authority that the WPC license shall be granted to Devas. It was the term of the agreement that "Devas shall be solely responsible for securing and obtaining all licenses and approvals (statutory or otherwise) for the delivery of Devas Services via satellite and terrestrial network" [Article 12(b)(vii) of Devas Agreement, [Ex. C-16/JCB -37]]. It also appears from the "DT Briefing "Meeting with Devas-Shareholders on 19 February 2008" and "Board Meeting on 19 February 2008", dated 15 February 2008" [Ex. R-210] that in order to get clarity on the matter of the WPC license, representatives of DT talked with the Chairman of the WPC but the "feedback was non-committal".

51. The "Briefing for DT Management Board Meeting on February 19, 2008, dated 11 February 2008" [Ex. R-209, page 13] shows that 90% of the Devas business was to come from terrestrial based networks. Putting it differently, in the absence of crucial WPC license, only 10% business of audio-visual services was possible. The grant or rejection of WPC license depends upon the decision of the concerned authority, which in such cases exercises quasi- judicial functions. Therefore, no other authority or state can extend an assurance in such a matter.

52. Apart from the aforesaid uncertainties, there is another uncertainty regarding the availability of a suitable technology with Devas to deliver the contemplated services. There is also uncertainty about the time frame that would have been required by Devas /DT to roll out its services. These facts stand established from the testimony of the Claimants' witnesses either to the question put to them during their cross examination or to the questions put to them by the Tribunal. Dr. Larsen, in response to the questions put to him in his cross examination admitted that:

- the first actual commercial deployment of eMBMS was in Korea in 2014 [page 406 lines 22-24 of the agreed final transcript];
- even as late as 2017 there were only few deployments of eMBMS technology [page 407 lines 4-9 of the agreed final transcript]; and
- DT does not have any commercial deployment of eMBMS [page 407 lines 7-20 of the agreed final transcript].

53. To the question whether he was aware of any Satellite AV services to mobile phones, his answer was: "Not to my Knowledge" [pages 407 lines 23-25 and page 408 lines 1-3 of the agreed final transcript].

54. Even according to the statement of Dr. Bazelon, the Claimants' expert witness, it appears that TD-LTE technology was not deployed by DT before 2011 though vendor trials were going on. In regard to the question whether the TD-LTE technology was ever used by the DT after 2011, he stated that he did not know if DT had deployed it subsequently [page 1172, lines 13-14, 22 and page 1173 lines 6-7 of the agreed final transcript]. Dr. Bazelon in his oral testimony admitted that he did not compare Devas' business model with similar operating businesses in India. Dr. Bazelon did not check what licence fee was being paid by users of comparable technology in India [page 1170, line 17-23 of the agreed final transcript]. Dr. Bazelon, in response to the question whether the rural population could afford the fee which was worked out, stated that "*An analysis such as that – when I was discussing how the Darwin model was put together in consideration market expectations, that's where that analysis would be done. I reviewed it and attempted to benchmark it, <u>but I don't believe I did a separate analysis of that</u>.*" The answer is irresolute; however, one thing is discernible that he did not make a separate analysis of the affordability aspect of the rural population [page 1170, line 25 of the agreed final transcript].

55. Dr. Jacob Sharony, the expert witness of the Respondent, in his oral testimony stated to the effect that DT was monitoring and trailing and investigating and studying TD-LTE technology but commercial deployment was not seen. He further added that "as of 2018, they are trailing" [Page 1372, lines 13-19 of the agreed final transcript].

56. None of the witnesses of the Claimants has stated that DT had successfully used the aforesaid technologies or had matured them for utilisation. It is clear that DT had no experience and expertise in these technologies before the year 2011 and thereafter, even until the year 2018, the time the statements of the witnesses were recorded. This being so, it cannot be stated with reasonable amount of certainty when DT would have been able to acquire the requisite capability to deploy the technologies. They have also not stated that DT had developed a technology in 2011 or thereafter that could be used for transmission of data to smart phones.

VI. The Majority's Views on the Technology for Delivering Devas' Services

57. At this stage, it will be appropriate to take note of some of the observations in the majority award about the aspect relating to technology for delivering Devas' services. It has been pointed out that Devas initially planned to use DVB-SH technology coupled with WIMAX technology. Subsequently, its plans switched to delivery of services utilising LTE technology. Thereafter, Devas conceived of deploying DVB-SH technology with LTE technology but this model, as observed in the majority award, presented limitations [see para 367 of the majority award]. It has also been observed that "AV services, Devas' reliance on DVB-SH technology would not have looked particularly attractive to a willing buyer in 2011, as such technology was in fact not used in the majority of smartphones. As a result, most smartphones would not have the capability of capturing Devas' AV signal directly." [see para 368 of the majority award]. It is further observed in the majority award that "[...] there is no specific evidence on the record that Devas was already working toward a different technology model" [...] [see para 373 of the majority award].

58. But together with the aforesaid observations, the majority expressed the view that "with the help of DT, in particular, Devas would have had the capacity to adapt its technology model over time, including potentially by obtaining a telephony license." [see para 373 of the majority award]. There is another observation more or less on the same lines: "It would be implausible to assume that Devas would have taken no measures to adapt to the new smartphone world" [see para 372 of the majority award].

59. I respectfully disagree with these observations. They operate on assumptions and not on evidence. Nothing has been placed on record indicating the time they would have taken to adapt to the new technology. Moreover, it is being assumed

that Devas would have been able to secure not only the WPC license but also the telephony license from the quasi-judicial regulatory authority.

60. From the evidence on record, one thing is clearly established that DT did not have the expertise in eMBMS Technology and delivery of transmission through LTE broadcast or any other technology used in smart phones. The question which searches for an answer is: within what time would the Claimant have been able to acquire the requisite technology to transmit data to the users of smart phones. Assuming that DT had the capacity to adapt to the new technology, there is no credible evidence to show in how much time this would have been possible. It is a quandary. This aspect also indicates that it will be too speculative and dangerous to use cash flow method without any degree of clarity on such aspects.

VII. The Majority's Projections of Market Development

61. The majority award under the caption 'Positive Market Development after 2008/2009' observes that a hypothetical knowledgeable, willing, and unpressured buyer in February 2011 would have noted a number of positive developments since 2009 [see paras 360-365 of the majority award]. With due deference, I disagree in view of the following reasons:

i) It has not been proved that DT had a customer base, goodwill and contact with customers in the host State.

ii) No evidence has been brought on record to show that any efforts were made by Devas or DT to establish a customer base and to advertise its contemplated service in the host State.

iii) The second tranche of shares were acquired by DTs in 2009 from Devas at the same rate which it paid in 2008, which means that the value of shares and business did not appreciate after 2008. [Ex. R-213, page 11, bullet point 8]

iv) It would have been known to a hypothetical, knowledgeable, willing and unpressured buyer in 2011 that DT did not have the experience and expertise of the appropriate technology and despite its association with Devas the business model of Devas may not take off within a quantifiable period of time.

v) A hypothetical buyer would have noticed that DT itself was of the view that even after obtaining the experimental license followed by trials and other events connected with them, the risk elements were not mitigated. ["Briefing for DT Management Board Meeting on 10 August 2009, dated 6 August 2009" [Ex. R-213], also see para 18(iii) first two bullet points].

vi) A hypothetical buyer would not have felt encouraged by the success of smart phones and tablets to buy the Devas business even though supported by DT as a shareholder since it did not have the requisite experience and expertise of new technology. Besides, the buyer would not have considered it worthwhile to acquire the business as Devas was neither possessed of WPC and telephony licenses nor did the Devas agreement confer on it any right over the licenses.

vii) A hypothetical buyer would not have shown interest in the Devas business as even the satellites were not available and Devas had yet to secure the WPC and telephony licences. It would have thought about the risk involved in depending on the assumption that the licenses would be granted in due course.

viii) A hypothetical buyer would have known that 90% of the Devas business was to come from terrestrial based networks and in its absence dependence on 10% business of audio-visual services would not be economically viable [see Ex. R-209, page 13].

ix) A hypothetical buyer would have known that DT made an attempt to seek clarification from the Chairman, WPC regarding the WPC license but his feedback was non-committal [see Ex. R-210].

VIII. Regulatory Licences Required by Devas

62. The question whether a fair and reasonable regulator would have been inclined or disinclined to issue the WPC licence is of critical importance. The regulatory authority would have been guided by all the relevant facts and circumstances having a bearing on the question. It would have also noticed the following statement by Devas in the "Briefing for DT Management Board Meeting on 10 August 2009, dated 6 August 2009" [Ex. R-213]:

> Devas current business model
>
> [...]
>
> Satellite unit-price of $20M and $9M yearly operational expenses upon successful launch. This extremely low price in particular due to close ISRO ties.
>
> [...]

63. It is clear from the above statement that Devas secured an extremely low price for the aforesaid facility due to its 'close ties' with ISRO. This would be seen along with the fact that top positions in Devas were held by erstwhile employees of ISRO and the Department of Space. Mr. M.G. Chandrashekhar held the following positions in ISRO [Page 51 of the statement of Mr. Ramachandran]:

(i) Head of programme planning and evaluation group of newly formed ISRO satellite Centre; and

(ii) Scientific Secretary ISRO, Member Secretary, Management Council of ISRO and Director Earth Observation in the year 1988. These positions were held by him until 1997.

64. Besides, Mr. Chandrashekhar, the following persons employed by Devas were earlier associated with ISRO or the Department of Space or Antrix:

(i) Mr. Ramachandran Vishwanathan, had a long career at ISRO;

(ii) Mr. Jai Singh, headed the satellite communication programme and was the first programme director of INSAT, the Department of Space/ISRO;

(iii) Mr. R.N. Agarwal was head of WPC; and

(iv) Mr. K. Narayanan headed the satellite communication programme of the Department of Space/ISRO.

65. Dr. Larsen, in his cross examination, was asked the meaning of the words: "This extremely low price in particular due to close ISRO ties". He replied as follows:

> *This means that ISRO was very supportive about the business model of Devas, in my opinion* [see page 385 lines 8-9 of the agreed final transcript].

66. The regulator would have examined the implication of the word "close-ties" and the explanation of Dr. Larsen in the context of the positions held by the aforesaid persons along with the stand of the Claimants and render its decision on the vexed question of WPC and telephony licenses. It is uncertain what view the regulator would have taken.

IX. Conclusion

67. In view of so many risk factors, uncertainties and imponderables, it will be inappropriate, highly unsafe and speculative to adopt the DCF analysis to arrive at the FMV of Devas, which is not a going concern, by imagining or at best predicting future cash flows without there being any historical data of past profits. Assumptions beyond tolerable level of speculation are antithetic to the DCF valuation.

68. The tribunals have discarded DCF analysis on account of insufficient operational history even in cases where business activity had commenced. In this view of the matter, I reject the use of the DCF method to determine the FMV of Devas. In the circumstances, the sunk cost method for determining compensation payable to the Claimants in respect of investments made by them in acquiring the shares of Devas appears to be appropriate.

69. For the foregoing reasons, I am unable to persuade myself to subscribe to the majority Award on Quantum.

70. It will not be necessary for me to calculate the compensation payable to the Claimants by the sunk cost method as such amount will be subsumed in the amount of compensation arrived at by the majority.

Issued at the place of arbitration, The Hague, the Netherlands, as of the date of the Award on Quantum.

AD Singh

The Honorable Shri Justice Anil Dev Singh