



Central Power Purchasing Agency (Guarantee) Limited

A Company of Government of Pakistan



D/O CHIEF FINANCIAL OFFICER (CPPA-G)

WITHOUT PREJUDICE

Ref No. 11870-74

Dated: 13-07-2022

Chief Executive Officer,
Star Hydro Power Limited,
Usman Square, 3rd & 4th Floor,
Main Double Road, E-11/2,
Islamabad.

For info to
- ADC (CT)
- CMS (Tech)
- D & (R.O)
- M.P.
N 14/7/22
cc: Chairman
Am (11881 CO)
Gom (11881 CO)
15/7/22
Dir

Subject: TARRIFF MODIFICATION PETITION FOR THE EXCLUSION OF
PRINCIPAL DEBT DAMAGES FROM THE STAR HYDRO POWER
LIMITED(SHPL)

This is with reference to your legal Counsel's letter dated 20.06.2022 and 02.06.2022 regarding the subject matter whereby the tariff modification petition of the Company was forwarded to CPPA for its onward submission to NEPRA under IPR 2017. It has been noted that SHPL has already submitted the subject request to NEPRA directly in contravention of the IPR 2017.

Foregoing in the view, request of the Company is hereby returned unactioned in original, along with the bankers Cheque No.19997406 dated 17.06.2022 drawn on HBL for an amount of Rs.1,869,444/- as the matter falls within the purview of NEPRA owing to the SHPL's is deviation from the regulatory framework.

(Zubair Mahmood)
Deputy GMF-II

Encls: As Above

C.C:

1. Registrar NEPRA, NEPRA Tower, Attaturk Avenue, G-5/1, Islamabad.
2. CEO CPPA-G, Shaheen Plaza, Blue Area, G-7/2, Islamabad.
3. CFO CPPA-G, Shaheen Plaza, Blue Area, G-7/2, Islamabad.
4. CLO CPPA-G, Shaheen Plaza, Blue Area, G-7/2, Islamabad.

Tariff Division Record

Dy No. 4188
Dated 15-7-22

REGISTRAR
Dy No. 6989
Dated 14-7-22



STAR HYDRO

K-water Global

Usman Square, 3rd & 4th Floor,

Main Double Road, E-11/2,

Islamabad-Pakistan.

Tel: +92-51-2304934, 37, 77 & 99

Fax: +92-51-2304991

Email: patrind@patrind.com

Web: www.patrind.com

Date: June 01, 2022

Registrar

National Electric Power Regulatory Authority (**NEPRA**)

NEPRA Tower,

Ataturk Avenue (East)

G-5/1

Islamabad

Subject: Star Hydro Power Limited ("SHPL") – Tariff Modification
Petition for the exclusion of Principal Debt Payment pursuant to
Section 6.5(b) of the Power Purchase Agreement

*Reference: Decision of the Authority in the matter of true-up of SHPL's tariff at the commercial operations date, reference No. NEPRA/R/SA(Tariff)/TRF-172/SHPL-20 11/19480-19482, dated 29 July 2020 ("**True-Up Determination**");*

*Power Purchase Agreement between SHPL and National Transmission and Despatch Company Limited (NTDC), dated 8 March 2012 ("**PPA**");*
and

*arbitral award, dated 18 May 2022, issued by the London Court of International Arbitration's ("**LCIA**") in the matter of National Transmission and Despatch Company Limited v Star Hydro Power Limited (LCIA arbitration no. 204975) ("**LCIA Award**").*

Dear Sir,

Star Hydro Power Limited (hereinafter, "**SHPL**" or the "**Petitioner**") owns and operates a 147 MW run-of-the-river hydropower project on river Kunhar, near village Patrind, District Muzaffarabad, Azad Jammu & Kashmir (AJ&K).

On 18 May 2022, the London Court of International Arbitration ("**LCIA**") in accordance with the Article 26.7 of the LCIA Rules of Arbitration has issued an Award in the Arbitration No: 204975 National Transmission and Despatch Company Limited v Star Hydro Power Limited (the "**LCIA Award**").

The Petitioner hereby submits to the learned Authority the attached Tariff Modification Petition under Rule-3 of the NEPRA Tariff Standards and Procedure Rules, 1998 and other enabling provisions of the Regulation of Generation,

Transmission and Distribution of Electric Power Act, 1997 and the Rules and Regulations framed thereunder, along with the applicable fee. This Tariff Modification Petition is submitted to revise the tariff to exclude the Principal Debt Damages awarded to SHPL in the LCIA Award.

Yours faithfully

For and on behalf of

STAR HYDRO POWER LIMITED

Bong Rok Oh 
Chief Executive Officer

Cc:

- i. Managing Director, National Transmission and Despatch Company, 2nd Floor, Shaheen Complex, Egerton Road, Lahore.
- ii. Managing Director Private Power & Infrastructure Board (PPIB), Ground & 2nd Floors, Plot No. 10, Immigration Building, Mauve Area, G-8/1, Islamabad.
- iii. Chief Financial Officer-CPPAG, Plot No. 73, West-D, Shaheen Plaza, Basement & Ground Floor, Fazal-e-Haq Road, Blue Area, Islamabad.

Checklist NEPRA (Import of Electric Power) Regulations 2017

Star Hydro Power Limited
Tariff Modification Petition
(exclusion of Principal Debt Damages)

No.	Requirement	Information
1.	Reg. 3(1)(a) – name and address of the applicant	<i>Star Hydro Power Limited Usman Square, 3rd & 4th Floor, Main Double Road, Sector E-11/2 Islamabad Pakistan</i>
2.	Reg. 3(1)(b) – authorization from the competent authority to file application along with affidavit as to the correctness of the information	<i>Board Resolution has been attached with the Tariff Petition. Affidavit has been attached with the Tariff Petition.</i>
3.	Reg. 3(1)(c) – demand which is going to be met through the proposed Import of Power	<i>Power acquisition request (PAR) and contract have already been approved by NEPRA.</i>
4.	Reg. 3(1)(d) – details of the Seller including but not limited to name, address, description of generation facilities etc	<i>Star Hydro Power Limited 147 MW hydroelectric generation facility near Patrind, Azad Jammu and Kashmir.</i>
5.	Reg. 3(1)(e) – comprehensive Tariff Proposal including proposed Rates for Import of Power, details of project cost, tariff break-up and tariff assumptions	<i>Power acquisition request (PAR) and contract have already been approved by NEPRA.</i>
6.	Reg. 3(1)(f) – source of power generation, where applicable	<i>147 MW hydroelectric generation facility near Patrind, Azad Jammu and Kashmir.</i>
7.	Reg. 3(1)(g) – capacity and/or the estimated annual energy to be imported	<i>147 MW</i>
8.	Reg. 3(1)(h) – feasibility study of the project, if applicable	<i>Power acquisition request (PAR) and contract have already been approved by NEPRA.</i>
9.	Reg. 3(1)(i) – proposed interconnection arrangement with approximate distance	<i>Interconnection is already in place.</i>
10.	Reg. 3(1)(j) – augmentation required in existing transmission network and/or the grid, if any	<i>N/A, see above.</i>

11.	Reg. 3(1)(k) – estimated costs of the interconnection arrangement and augmentation required in the transmission network	<i>N/A, see above.</i>
12.	Reg. 3(1)(l) – technology, indicating primary fuel, alternate primary fuel and back up fuel, where applicable	<i>Hydroelectric</i>
13.	Reg. 3(1)(m) – undertaking from the Seller to comply with the grid code, distribution code and other applicable documents	<i>Power acquisition request (PAR) and contract have already been approved by NEPRA.</i>
14.	Reg. 3(1)(n) – expected commercial operations date	<i>Complex is already commissioned.</i>
15.	Reg. 3(1)(o) – expected duration of Import of Power	<i>Up till 2042, subject to extension.</i>
16.	Reg. 3(1)(p) – adequacy of the transmission system of the national grid company or Distribution Company, as the case may be, to import the electric power	<i>Interconnection is already in place.</i>
17.	Reg. 3(1)(q) – summary of evidence giving brief particulars of the data, facts and evidence in support of the application	<i>Please refer to the Tariff Petition.</i>
18.	Reg. 3(2) – application fee	<p><i>Fee is not payable as the applicant does not fall in any of the four (4) heads set out in the schedule to the NEPRA (Fees Pertaining to Tariff Standards & Procedure) Regulations 2002.</i></p> <p><i>The applicant is not:</i></p> <ul style="list-style-type: none"> • <i>a generation licensee;</i> • <i>a transmission licensee;</i> • <i>a distribution licensee;</i> • <i>a consumer.</i>



**EXTRACTS OF THE RESOLUTIONS PASSED BY THE BOARD OF DIRECTORS
OF STAR HYDRO POWER LIMITED ("COMPANY") IN THEIR MEETING HELD
ON MAY 31, 2022 AT THE REGISTERED OFFICE OF THE COMPANY SITUATED
AT [ADDRESS], PAKISTAN**

RESOLVED THAT the Company be and is hereby authorized to file a Tariff Modification Petition before the National Electric Power Regulatory Authority ("**NEPRA**"), *inter alia*, under Rule-3 of the NEPRA Tariff Standards and Procedure Rules, 1998 and other enabling provisions of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 ("**Act**") and the Rules and Regulations framed thereunder.

FURTHER RESOLVED THAT Bong Rok Oh, Chief Executive Officer of the Company be and is hereby authorized for and on behalf of the Company to sign and file all necessary documents, pay necessary fee, appear before NEPRA as needed and to do all such acts necessary, incidental to or deemed appropriate for processing and completion of the Tariff Modification Petition.

CERTIFICATION

CERTIFIED, that, the above resolutions were duly passed at a meeting of the Board of Directors of the Company, at which the quorum of directors was present, and was held on May 31, 2022 at 200 Sintanjin-Ro, Daedeok-Gu, Daejeon, 34350 Republic of Korea.

FURTHER CERTIFIED, that the said resolutions have not been rescinded and are in operation and that this is a true and correct extract and copy thereof.

Chief Executive Officer

VAKALATNAMA

Date: June 01, 2022

We, Star Hydro Power Limited (the "Company"), hereby appoint and constitute Mr Nadir Altaf, Mr Hasnain Naqvee, Mr Haseeb Rao and Mr Omair Malik ("Authorised Persons") to appear and act for and on behalf of the Company as our advocates in connection with the processing and presentation of the Company's Tariff Modification Petition with the National Electric Power Regulatory Authority ("NEPRA"), *inter alia*, under Rule-3 of the NEPRA Tariff Standards and Procedure Rules, 1998 and other enabling provisions of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 ("Act") and the Rules and Regulations framed thereunder.

We also authorise the said Authorised Persons or any one of them to do all acts and things necessary, incidental to or deemed appropriate for the processing, completion, and finalization of the Tariff Modification Petition with NEPRA.

RIAA BARKER GILLETTE

STAR HYDRO POWER LIMITED

Bong Rok Oh

Chief Executive Officer

BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

**TARIFF MODIFICATION PETITION
UNDER
NEPRA (TARIFF STANDARDS AND PROCEDURES) RULES 1998**

**In relation to:
147 MW Hydro Power Project at Patrind, Azad Jammu and Kashmir**

**Petitioner:
Star Hydro Power Limited**

Dated June 01, 2022

Table of Contents

1.	Details of the Petitioner and Project Background	7
1.1.	Name and Address	7
1.2.	Representatives of the Petitioner	7
1.3.	Project Advisors.....	7
1.4.	Project Background	7
2.	Tariff Modification Petition.....	8
2.1.	Tariff	8
2.2.	Power Purchase Agreement – Section 6.5(b).....	8
2.3.	LCIA Award	8
2.4.	Legal Basis	9
3.	Key Features of the Project.....	10
4.	Proposed Tariff.....	11
4.1.	Revised debt schedule.....	11

Annexes

1. LCIA Award dated 18 May 2022
2. Revised debt schedule

1. Details of the Petitioner and Project Background

1.1. Name and Address

Petitioner Name	Star Hydro Power Limited ("Petitioner")
Petitioner Address	Usman Square, 3rd & 4th Floor, Main Double Road, Sector E-11/2, Islamabad, Pakistan

1.2. Representatives of the Petitioner

	Name	Job Title
Representative 1	Bong Rok Oh	Chief Executive Officer
Representative 2	Hae-Dong Choi	Deputy Chief Executive Officer
Representative 3	Beom Su Park	Chief Financial & Commercial Officer
Representative 4	Jawad Ahmed	Manager Accounts

1.3. Project Advisors

Advisor	Name
Legal Advisors	RIAA Barker Gillette

1.4. Project Background

The Petitioner owns and operates a 147 MW run-of-the-river hydropower project on river Kunhar, near village Patrind, District Muzaffarabad, Azad Jammu & Kashmir (AJ&K) ("Project").

The Project achieved commercial operations on 8 November 2017.

The Petitioner is party to *inter alia* a power purchase agreement ("PPA") with National Transmission and Despatch Company Limited ("NTDC"), dated 8 March 2012.

2. Tariff Modification Petition

2.1. Tariff

Through its decision dated 29 July 2020 (reference no. NEPRA/R/SA(Tariff)/TRF- 172/SHPL-20 11/19480-19482), the Authority determined a one-time true-up adjustment of the Petitioner's EPC-stage tariff (such adjusted tariff referred to as the "Tariff").

The Tariff sets out a schedule that specifies, amongst other components, the approved principal debt amounts to be paid by NTDC to the Petitioner via the Tariff for the servicing of the Petitioner's project debt.

2.2. Power Purchase Agreement – Section 6.5(b)

The Petitioner and NTDC are parties to the PPA, which provides for (amongst other matters) the development and commissioning of the Project by the Petitioner and the completion and commissioning of the Power Purchaser Interconnection Works ("PPIW")¹ by NTDC.

In case NTDC delays completion and commissioning of the PPIW and such delay results in a delay to the commissioning of the Petitioner's Project, Section 6.5(b) of the PPA requires NTDC to pay certain amounts to the Petitioner, including principal debt payments if the delay continues beyond sixty (60) days.

Where the principal debt payments are made by NTDC pursuant to Section 6.5(b), the same section requires that *"such principal debt paid by [NTDC] under this Section 6.5 shall be excluded in any determination or calculation of the Tariff at the Commercial Operation Date to be paid by the Power Purchaser hereunder"*.

2.3. LCIA Award

In 2017, the Petitioner issued invoices to NTDC for the amounts payable under Section 6.5(b) on the ground that NTDC had delayed completion of the PPIW which had consequently delayed the commissioning of the Project.

The matter became disputed between the parties and was referred to dispute resolution under the PPA. Ultimately, the dispute was referred to the London Court of International Arbitration ("LCIA").

On 18 May 2022, the LCIA-appointed sole arbitrator issued the arbitral award ("LCIA Award", attached as **Annex 1** hereto), finding overwhelmingly in the Petitioner's favour.

Most notably, paragraph 186 of the LCIA Award determined that NTDC is required to pay to the Petitioner USD 9,507,197.18 as damages for breach of its obligation to make the principal debt payment ("Principal Debt Damages").

"186. The Sole Arbitrator has found that [NTDC] breached the PPA by failing to make the Principal Debt Payment. She quantifies the damages payable for [NTDC]'s breach as USD 9,507,197.18, the

¹ I.e., the works necessary to construct and commission the interconnection line for off-taking power from the Petitioner's Project.

"Principal Debt Damages". Damages for breach of contract operate to put the wronged party in the position they would have been had the contract been properly complied with. The Sole Arbitrator awards Star Hydro the Principal Debt Damages to compensate it for [NTDC]'s breach of the PPA in failing to pay the Principal Debt Invoice."

In order to be entitled to the Principal Debt Damages under the LCIA Award, paragraph 187 of the LCIA Award requires the Petitioner to apply to the Authority for the exclusion of the Principal Debt Damages from the tariff, so as to avoid double recovery by the Petitioner.

"187. In order to ensure that Star Hydro is not put in a better position than it would have been in had the contract been properly complied with, the award of the Principal Debt Damages is conditional upon Star Hydro making an application to NEPRA to revise the tariff to exclude the Principal Debt Damages. The award of the Principal Debt Damages will crystallize 30 days after Star Hydro makes the application to NEPRA. Payment of the Principal Debt Damages is not contingent upon or related to any subsequent decision of NEPRA relating to the tariff, the obligation to pay the Principal Debt Damages is triggered upon Star Hydro providing [NTDC] with evidence of its application to NEPRA to revise the tariff to exclude the Principal Debt Damages."

Therefore, the Petitioner has filed this present Petition to revise the tariff to exclude the Principal Debt Damages.

2.4. Legal Basis

Under the Regulation for Generation, Transmission and Distribution of Electric Power Act 1997 ("NEPRA Act"), NEPRA is responsible inter alia, for determining tariffs and other terms and conditions for the supply of electricity through generation, transmission, and distribution. NEPRA is also responsible for determining the process and procedures for reviewing tariffs and recommending tariff adjustments. Further, pursuant to the enabling provisions of the NEPRA Act, the procedure for tariff determination has been prescribed in the NEPRA (Tariff Standards and Procedure) Rules 1998 ("Tariff Rules").

Pursuant to the relevant provisions of the Tariff Rules, read with the provisions of the NEPRA Act and the rules and regulations made thereunder; the Petitioner submits this tariff modification petition ("Tariff Petition") for the exclusion of Principal Debt Damages from the Tariff before NEPRA for its approval.

3. Key Features of the Project

Project Company	Star Hydro Power Limited
Capacity	147 MW
Project Type	Independent Power Producer (IPP)
Applicable Policy	Power Policy 2002
Applicable Tariff Regulations	NEPRA (Tariff Standards and Procedure) Rules 1998
LOI issued by	PPIB
Contract Type	PPA
Power Purchaser	National Transmission and Despatch Company Limited (NTDC)
Basis	Build, Own, Operate, Transfer
Location	Patrind, Azad Jammu and Kashmir
Construction Mode	Turnkey EPC
EPC Contractor	Daewoo E&C
Technology	Hydropower
Interconnection	132kV Grid

4. Proposed Tariff

4.1. Revised debt schedule

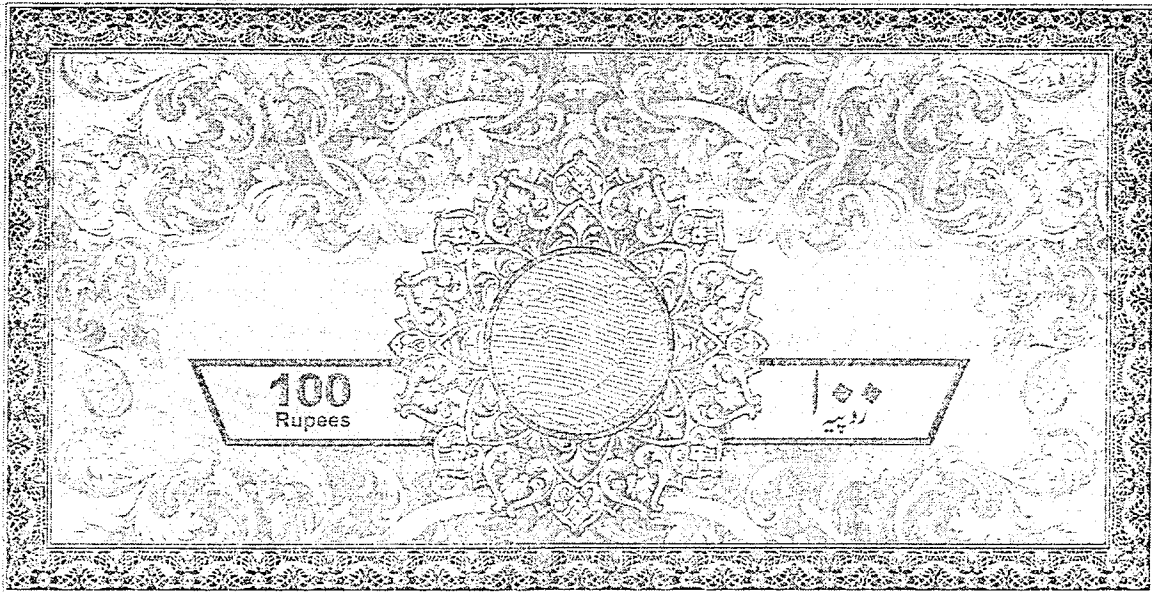
Following the exclusion of the 1st Principal Debt Amount, the revised debt schedule is attached as Annex 2 hereto.

This petition and its Annex 2 are without prejudice to the claim referred by SHPL to the LCIA against the reduction of USD 94 million (approx.) from SHPL's tariff.

Signed



Bong Rok Oh
Chief Executive Officer



AFFIDAVIT

BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY


I, Bong Rok Oh, Chief Executive Officer, Star Hydro Power Limited (SHPL), hereby solemnly affirm and declare that the contents of the accompanying Tariff Modification Petition, including all supporting documents, are true and correct to the best of my knowledge and belief and that nothing material has been concealed therefrom.

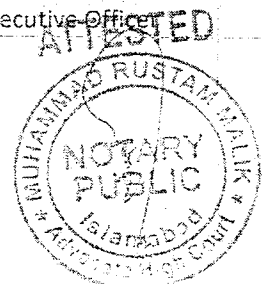
I also affirm that all further documentation and information to be provided by me in connection with the accompanying Tariff Petition will also be true and correct to the best of my knowledge and belief.

Islamabad
June 01, 2022

 Deponent
Bong Rok Oh
Chief Executive Officer

Verified on oath at Islamabad on June 01, 2022 that the contents of the above Affidavit are true and correct to the best of my knowledge and belief.

 Deponent
Bong Rok Oh
Chief Executive Officer



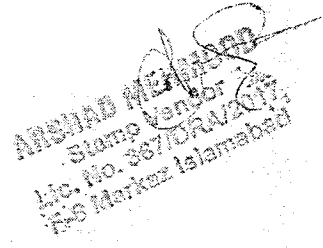
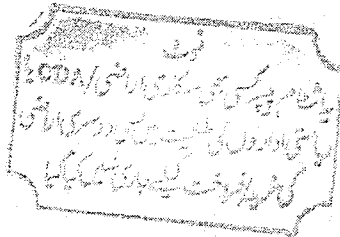
31 MAY 2022

9672

01-06-2022

For: Mr. Bong Rok Oh, Chief Executive Officer, Star Hydro Power Limited
In Favour of: National Electric Power Regulatory Authority (NEPRA)

AFFIDAVIT



IN THE MATTER OF AN ARBITRATION UNDER THE ARBITRATION RULES OF THE
LONDON COURT OF INTERNATIONAL ARBITRATION

Case Number 204975

BETWEEN

NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED

Claimant

-and-

STAR HYDRO POWER LIMITED

Respondent

FINAL AWARD

LUCY GREENWOOD
SOLE ARBITRATOR

I.	INTRODUCTION.....	1
A.	The Parties and the Power Purchase Agreement.....	1
B.	Procedural History.....	3
II.	BACKGROUND TO THE DISPUTE	7
A.	The Relationship Between the Parties.....	7
B.	The Complex.....	7
C.	Obligations under the PPA	8
D.	Testing of the Complex.....	11
E.	Certification of the Complex.....	13
F.	Delays.....	14
G.	Delay Payments and Liquidated Damages	15
H.	The Principal Debt Invoice	16
I.	The Expert Determination.....	17
III.	THE PARTIES' POSITIONS AND RELIEF REQUESTED.....	18
A.	National.....	18
B.	Star Hydro	19
IV.	THE SOLE ARBITRATOR'S ANALYSIS	21
A.	The Application of Pakistan Law.....	21
B.	National's claim to Liquidated Damages	23
1.	The first limb of the first sentence of Section 6.5(b)	24
2.	The second limb of the first sentence of Section 6.5(b).....	25
3.	The third limb of the first sentence of Section 6.5(b)	29
4.	The fourth limb of the first sentence of Section 6.5(b)	30
(a)	When were the PPIW completed?.....	30
(b)	Did the delay in completing the PPIW cause a delay to the Commissioning of the Complex?.....	38
(1)	The Engineer's use of sub-consultants.....	39
(2)	Are the certificates valid?.....	43
(c)	The period of time by which the RCOD should be extended	49
C.	Star Hydro's claim to the Delay Payments and Principal Debt Invoice	50
1.	The right to payments for delay under Section 6.5(b).....	50
2.	The right to payment of the Principal Debt Invoice under Section 6.5(b).....	51

3.	Restrictions on the obligations to make payments under Section 6.5	56
(a)	Would the delays to the Commissioning Tests nonetheless have occurred?	56
(b)	Was the Complex tested at the first available opportunity?	61
D.	Responsibility for the period 30 October 2017 – 8 November 2017	64
E.	Is Star Hydro entitled to additional financial costs?	64
F.	List of Issues	65
G.	Quantum	72
1.	Delay Invoices	73
2.	Principal Debt Invoice	75
3.	Pre-award interest	78
4.	Post-award interest	79
H.	Costs of the arbitration	80
1.	Legal Costs	80
2.	Arbitration Costs	82
3.	Interest on Costs	83
V.	DISPOSITION	83

I. INTRODUCTION

A. The Parties and the Power Purchase Agreement

1. Although National Transmission and Despatch Company Limited ("National") is nominally the Claimant in this arbitration and Star Hydro Power Limited ("Star Hydro") is nominally the Respondent, in reality the parties have asserted significantly overlapping, if not quite mirror claims against each other. At the preliminary hearing of this arbitration the parties agreed that they would proceed on the basis that National was the Claimant and Star Hydro the Respondent.
2. National is a public limited company incorporated under the laws of Pakistan. National links power generation units with load centres throughout Pakistan and is also responsible for the transmission of power from hydroelectric power plants and thermal units to distribution companies. In 2002, National was granted an exclusive transmission licence for a period of thirty years.¹ Until 2015 the Central Power Purchase Agency (Guarantee), referred to as "CPPA-G" was a part of National. As National's Counsel explained during the evidentiary hearing *"the contract was signed by [National] which, at the time, included the CPPA-G as one of its wings. That is why the correspondence that we have or the record that we have interchangeably will refer to [National] and CPPA-G"*.² During the course of the arbitration the parties referred to CPPA-G and National interchangeably and correspondence addressed to CPPA-G was taken to include National (and *vice versa*).³
3. In this arbitration National is represented by Raja Mohammed Akram & Co, 33 C Main Gulberg, Lahore, Pakistan.
4. Star Hydro is also a public limited company incorporated under the laws of Pakistan. Star Hydro owns and operates the hydroelectric power generation complex at the heart of this arbitration.⁴
5. In this arbitration Star Hydro is represented by Herbert Smith Freehills, 22F West Tower Center, 1 Building 26, Eulji-ro, 5-gil Jung-gu, Seoul 04539 South Korea.

¹ Statement of Claim, paragraph 7.

² Tr 1/30: 4-14.

³ In this Final Award, for ease of reference, National is used throughout unless circumstances require an express reference to CPPA-G.

⁴ Star Hydro Request for Arbitration, paragraph 2.

6. Initially, two arbitrations were commenced by the parties. Star Hydro commenced an arbitration against National by way of a Request for Arbitration dated 4 December 2020. National commenced an arbitration against Star Hydro by way of a Request for Arbitration dated 5 December 2020. The arbitrations were brought under Section 18.3 of a Power Purchase Agreement dated 8 March 2012 between the parties (the "PPA"). In Section 18.3 of the PPA, the parties provided:

"(a) Any Dispute arising out of or in connection with this Agreement that has not been resolved following the procedures set forth in Section 18.1 and Section 18.2(n) or has been required by a Party to be referred to arbitration without reference to an Expert and is not the kind of Dispute identified in Section 18.2(n), shall be settled by arbitration in accordance with the rules of the London Court of International Arbitration, as in effect on the date of this Agreement (the "Rules"), by one (1) arbitrator appointed in accordance with the Rules. The arbitration proceedings shall be conducted, and the award shall be rendered, in the English language.

(b) If under the Laws of Pakistan the application of the Rules to the arbitration established for the resolution of a Dispute would not result in an enforceable award then such Dispute shall be finally settled by arbitration under the Rules of Arbitration of the United Nations Commission on International Trade Law (the "UNCITRAL Rules") by one (1) arbitrator appointed in accordance with the UNCITRAL Rules.

(c) The arbitration shall be conducted in Lahore, Pakistan; provided, however, that if the amount in Dispute is greater than five million Dollars (\$5,000,000) or the amount of such Dispute together with the amount of all previous Disputes submitted for arbitration pursuant to this Section 18.3 exceeds seven million Dollars (\$7,000,000) or an issue in Dispute is (i) the legality, validity or enforceability of this Agreement or any material provision hereof, or (ii) the termination of this Agreement, then either Party may, unless otherwise agreed by the Parties, require that the arbitration be conducted in London, in which case the arbitration shall be conducted in London. Except as awarded by the arbitrator and except as hereinafter provided, each Party shall be responsible for its own costs incurred by it in connection with an arbitration hereunder. Notwithstanding the foregoing, either Party may require that arbitration of any Dispute be conducted in London (or such other location outside Pakistan agreed to by the Parties), in which case the arbitration shall be conducted in London (or such other location outside Pakistan

agreed by the Parties); provided, however, that if the Dispute is not of a type that could have been conducted in London (or such other location outside Pakistan agreed by the Parties) in accordance with the provisions of the foregoing sentence, the Party requiring that arbitration be conducted in London (or such other location outside Pakistan agreed by the Parties) shall pay all costs of arbitration as and when incurred by the other Party (including out of pocket costs but excluding any award made by the arbitrator) in excess of the costs that would have been otherwise incurred by such other Party had the arbitration been conducted in Lahore, Pakistan; provided, further, that the Party requiring that arbitration be conducted in London (or such other location outside Pakistan agreed by the Parties) may seek a determination that the Dispute or the defence thereof is spurious and without any merit whatsoever, and upon such final and binding determination, any amounts paid to the other Party to cover such excess costs shall be returned to the paying Party.

(d) No arbitrator appointed pursuant to this Section 18.3 shall be a national of the jurisdiction of either Party or of the jurisdiction of any Investor that directly or beneficially owns five percent (5%) or more of the Ordinary Share Capital, nor shall any such arbitrator be an employee or agent or former employee or agent of the Power Purchaser, the Company, the Lenders or of any Investor that directly or beneficially owns five percent (5%) or more of the Ordinary Share Capital".⁵

7. The arbitrations were commenced under the 2020 Rules of the London Court of International Arbitration ("LCIA") in accordance with the arbitration agreement set out above.

B. Procedural History

8. The parties agreed to consolidate the two arbitrations. This agreement was reached in correspondence with the LCIA dated 14 December 2020 and 7 January 2021. The two arbitrations were therefore consolidated into this single proceeding under case reference LCIA 204975. On 4 February 2021 the parties were notified that the LCIA Court had appointed Lucy Greenwood as Sole Arbitrator in this consolidated arbitration.
9. The contact details of the Sole Arbitrator are:

⁵ C-1.

Lucy Greenwood
Greenwood Arbitration
Ladywell Lakes, The Dean
Alresford, SO24 9BD
Email: lucy.greenwood@greenwoodarbitration.com.

10. The Sole Arbitrator is a UK national and is not, therefore, a national "*of the jurisdiction of either Party*" in accordance with Section 18.3 of the PPA. No objections were made to the Sole Arbitrator's jurisdiction in this matter at any time during the arbitration.
11. Section 18.2 of the PPA envisaged that certain disputes arising under the PPA could be referred to an expert for determination prior to commencing an arbitration. Section 18.2(i) of the PPA provides:

"the recommendation of the Expert shall not be binding; provided, however, that if arbitration proceedings in accordance with Section 18.3 have not been commenced within seventy-five (75) Days from the date the Expert's determination was received by the Parties in accordance with Section 18.2(g) the Expert's determination shall be final and binding on the Parties, and any right of such Parties to resort to arbitral, judicial or other proceedings in relation to the subject matter of the determination shall stand waived to the fullest extent permitted by law".

12. As described further below, the parties took part in an expert determination process in accordance with Section 18.2 of the PPA. The parties agreed that the arbitration(s) had been commenced within the time limit set out in Section 18.2(i) above and therefore the Expert's decision was not binding.⁶
13. Section 19.7 of the PPA provides: "*This Agreement shall be governed by and construed in accordance with the laws of Pakistan*". This arbitration is therefore governed by Pakistan law. In accordance with Section 18.3 of the PPA the language of the arbitration is English.
14. The parties were initially in dispute as to the seat of the arbitration. Star Hydro's position was that the parties had expressly referenced the seat of the arbitration in their arbitration agreement and that the provisions of the agreement, together with certain actions that had been taken, meant that the seat of the arbitration was London. National's position was that

⁶ See Procedural Order No.1.

the arbitration agreement was silent on the seat of arbitration and the references in the agreement to Lahore/London were simply to the venue of any hearing.

15. The arbitration agreement provided in relevant part as follows:

“(c) The arbitration shall be conducted in Lahore, Pakistan; provided, however, that if the amount in Dispute is greater than five million Dollars (\$5,000,000) or the amount of such Dispute together with the amount of all previous Disputes submitted for arbitration pursuant to this Section 18.3 exceeds seven million Dollars (\$7,000,000) or an issue in Dispute is (i) the legality, validity or enforceability of this Agreement or any material provision hereof, or (ii) the termination of this Agreement, then either Party may, unless otherwise agreed by the Parties, require that the arbitration be conducted in London, in which case the arbitration shall be conducted in London”.⁷

16. After hearing from both parties, the Sole Arbitrator determined that this arbitration would be seated in London. She issued Procedural Order No.1 confirming the seat of the arbitration and establishing the procedural timetable for this matter on 9 March 2021.⁸ In accordance with the timetable, the Statement of Claim was submitted on 23 April 2021, the Statement of Defence and Counterclaim on 18 June 2021, the Statement of Reply and Defence to Counterclaim on 17 September 2021 and the Statement of Rejoinder on 15 October 2021. The parties engaged in a document exchange process and all pleadings were submitted with supporting documents. The parties submitted pre-hearing briefing on 25 January 2022.
17. Witness Statements were submitted by the parties on behalf of Munawar Hussain, Arif Khan, Furqan Shabbir, Jamshaid Iqbal, Shahid Nazir and Taqi ud Din (Claimant) and Zeeshan Sadiq, Ahsin Gilani, Jawad Ahmad, Andrew Thick, Syed Atif Ali Shah and Junaid Khan (Respondent). Expert Reports accompanied by supporting documents were submitted on behalf of Muhammad Shabbir, Shahid Mahmood (Claimant) and Christopher Martin, John Martens, Timothy Morse and Peter Bird (Respondent).
18. The evidentiary hearing took place from 7–10 March 2022 at the International Dispute Resolution Centre in London. The Sole Arbitrator, Counsel and certain witnesses attended the hearing in person with others attending remotely via video conference.⁹ The hearing was

⁷ C-1, PPA, Section 18.3(c).

⁸ See Procedural Order No.1 for the Sole Arbitrator’s reasoning.

⁹ A list of participants was annexed to Procedural Order No.3, which set out an agreed hearing protocol.

transcribed by EPIQ Court Reporters, and the transcript was circulated to the Sole Arbitrator and the parties each day.

19. At the end of the hearing the parties and the Sole Arbitrator discussed further directions and on 11 March 2022 the Sole Arbitrator confirmed the following:

"The record was closed on 10 March 2022 and no new evidence may be submitted.

Counsel are requested to liaise regarding the revision of the list of issues and provide me with an updated list of issues in word format by 18 March 2022.

Oral closing submissions will take place remotely on 22 March 2022 at 1 pm London time. Counsel are requested to liaise regarding timing, the use of any demonstratives and logistics.

Written closing submissions will be filed simultaneously by 5.30 pm London time on 30 March 2022.

Costs submissions will be filed by 5.30 pm London time on 6 April 2022, with reply costs submissions filed by 5.30 pm London time on 11 April 2022".

20. Oral closing submissions were made to the Sole Arbitrator via video conference on 22 March 2022. The submissions were transcribed, and the transcript was circulated to the parties and the Sole Arbitrator. The parties agreed to file post hearing briefing on 1 April 2022, with cost submissions exchanged by agreement on 20 April 2022. Also by agreement, each party commented on the other side's cost submissions on 28 April 2022.

21. The parties submitted numbered exhibits during the course of the arbitration, which are referred to in this Final Award. This Final Award adopts the designations used by the parties, namely C- for Claimant's exhibits and R- for Respondent's exhibits and also references the joint hearing bundle.¹⁰ Terms not otherwise defined in this Final Award are as defined in the PPA. References in this Final Award to evidence, submissions or other material are not exhaustive or exclusive.

¹⁰ The exhibits were collated into a Joint Hearing Bundle. Occasionally exhibits were submitted by both parties, therefore there were duplicates among the exhibits. The Joint Hearing Bundle removed the duplicates; however, this Final Award may refer to a document using either its R- or C- reference or its Joint Hearing Bundle reference. No significance should be attached as to which reference is used.

22. In determining this dispute full and careful consideration was given to the entire record, including the credibility of the witnesses. The Sole Arbitrator weighed the evidence carefully, affording the evidence the weight it deserved and considering its admissibility. The Sole Arbitrator records her thanks to the parties and their legal advisers and representatives for the helpful way in which this reference has been conducted as well as the careful and considered submissions which were made.

II. BACKGROUND TO THE DISPUTE

A. The Relationship Between the Parties

23. The parties began negotiations in early 2010 over a potential hydroelectric power project in northern Pakistan.¹¹ Star Hydro proposed that it would construct and operate a power generation facility and that National would purchase the facility's output. On 8 March 2012 the parties executed the PPA, with financial close being achieved on 20 December 2012 and construction beginning thereafter.¹² Under the PPA, Star Hydro was required to design, engineer, construct, insure, and commission, operate and maintain a 147 MW hydroelectric power generation facility to be located at Patrind, District Muzaffarabad, AJ&K (the "Complex"). National was responsible for connecting the Complex to Pakistan's electricity transmission network (often referred to as the grid).

B. The Complex

24. The Complex is situated in northern Pakistan near Patrind village, on the border between the provinces of Khyber-Pakhtunkhwa, Azad Jammu and Kashmir. The Complex uses water from the River Kunhar to generate electricity through three turbines, which, together with generators and auxiliary equipment, are located in the powerhouse of the Complex. The generators are connected to transformers and then to a switchyard. The switchyard is connected to a transmission line which enables the electricity to be transmitted through Pakistan's electricity transmission network to distributors and consumers. The transmission line eventually ran from the Complex to a 132 kV grid station, a distance of around 6 kilometres. The transmission line comprised 28¹³ metal towers with the terminal tower¹⁴ located inside the Complex.

¹¹ Hussain Statement 1, paragraph 14.

¹² Hussain Statement 1, paragraph 15.

¹³ Or possibly 29 towers, Martin Report 1, paragraph 3.29.

25. Completing the transmission line to connect the Complex to the grid was a challenging task given the remote and mountainous terrain.¹⁵ Mr Nazir, Chief Engineer, who gave evidence on behalf of National during the evidentiary hearing, said the transmission line was the *"toughest line in my services, I have almost 30 years of experience, field experience, but I have never never faced such problems"*.¹⁶ The Complex was situated in a *"mountainous area covered with thick forestation"*¹⁷ and there were issues in obtaining regulatory approvals for the clearance of trees. After a period of delay, the transmission line was completed, and the Complex synchronized with the grid. Further issues arose during the testing of the Complex prior to commissioning, and it is undisputed that the Complex was commissioned later than planned. The dispute turns on who was responsible for the delays and the legal implications of the delays to the project.

C. Obligations under the PPA

26. Star Hydro was responsible for designing and constructing the Complex together with the design, construction, and installation of the facilities to allow the Complex to be connected to the grid (the *"Company Interconnection Facilities"* as defined in the PPA¹⁸). National was responsible for the design and construction of the *"Power Purchaser Interconnection Facilities"* (the "PPIF", as defined in the PPA¹⁹) which comprised the equipment *"on the Power Purchaser's side of the Interconnection Point"*. (The *"Interconnection Point"* was specified as the point where the Complex and the grid were to be connected²⁰). The work required for the PPIF was referred to as the *"Power Purchaser Interconnection Works"* (the "PPIW", as defined in the PPA²¹). Throughout the arbitration, PPIF and PPIW were used fairly interchangeably by the parties and the main focus was on the construction of the transmission line by National, which formed the bulk of the PPIW and PPIF.
27. The PPA established a number of key dates and imposed obligations on the parties to achieve certain milestones in the project by those dates. As it provides a relatively fixed date (subject to the possibility of extension), a good starting point is the *"Required Commercial Operations Date"*, which is defined in the PPA as *"the date that is 51 Months following the*

¹⁴ Also known as tower 1.

¹⁵ Shahid Report, paragraph 19.

¹⁶ Tr 2/108:9-11.

¹⁷ Nazir Statement 1, paragraph 37.

¹⁸ C-1, PPA Section 1.1.

¹⁹ C-1, PPA Section 1.1.

²⁰ C-1, PPA Section 1.1.

²¹ C-1, PPA Section 1.1.

date on which Financial Closing occurs, as such date may be extended pursuant to Section 6.5 or Section 8.1(b) or by reason of a Force Majeure Event or due to non-availability of water within Technical Limits".²²

28. Leaving aside for present purposes any extension to the "*Required Commercial Operations Date*", it is accepted by the parties that financial close was achieved on 20 December 2012,²³ which meant that the "*Required Commercial Operations Date*" was 20 March 2017 (for ease of reference, the "*Required Commercial Operations Date*" is referred to in this Final Award as "RCOD").²⁴ The "*Commercial Operations Date*" was defined by the parties as "*the Day immediately following the date on which the Complex is Commissioned; provided, that in no event shall the Commercial Operations Date occur earlier than one hundred and twenty (120) Days prior to the Required Commercial Operations Date without the prior written approval of the Power Purchaser, which approval may be given or withheld in the sole discretion of the Power Purchaser*".²⁵ (for ease of reference, the "*Commercial Operations Date*" is referred to in this Final Award as "COD"). The "*Scheduled Commercial Operations Date*" was agreed by the parties to be "*the date reasonably advised to the Power Purchaser by the Company at Financial Closing and again at Construction Start, as such date may be revised from time to time based on the scheduled construction programme for the completion of the Complex*".²⁶ (for ease of reference, the "*Scheduled Commercial Operations Date*" is referred to in this Final Award as "SCOD"). This date was initially notified by Star Hydro to National as 20 November 2016,²⁷ but was subsequently amended and notified by Star Hydro on 26 October 2016 to be 26 February 2017,²⁸ and this date is agreed by the parties.²⁹ The required completion of the PPIW was to be 120 days prior to the SCOD, namely 29 October 2016, and, again, this date is agreed by the parties.³⁰

29. The PPA required Star Hydro to "*carry out and complete the Construction Works such that the Company is able to achieve the Commercial Operations Date by the Required*

²² C-1, PPA, Section 1.1.

²³ Hussain Statement 1, paragraph 14.

²⁴ The date is agreed by the parties in the Joint Expert Report of Shahid Mahmood and Christopher Martin dated 17 December 2021.

²⁵ C-1, PPA, Section 1.1.

²⁶ C-1, PPA, Section 1.1.

²⁷ R-9.

²⁸ C-11.

²⁹ See, *inter alia*, the Joint Expert Report of Shahid Mahmood and Christopher Martin dated 17 December 2021.

³⁰ See the Joint Expert Report of Shahid Mahmood and Christopher Martin dated 17 December 2021.

Commercial Operations Date".³¹ Once the Construction Works were completed Star Hydro was to prepare the Complex for testing, as explained further below.

30. In relevant part, the PPA established the following obligations on the parties regarding the PPIF and the PPIW.

Section 6.5(a):

"(a) On or within ten (10) Days after the Effective Date, the Company shall give to the Power Purchaser written notice of the Scheduled Commercial Operations Date then anticipated by the Company. Following the receipt of such notice, the Power Purchaser shall commence the final design of the Power Purchaser Interconnection Facilities. Thereafter, the Power Purchaser shall give the Company reports on the progress of the Power Purchaser Interconnection Works as appropriate until the same are completed. The Power Purchaser shall complete the Power Purchaser Interconnection Works and be able to absorb into the Grid System electrical power generated by the Complex as is necessary to enable the Company to carry out the pre-commissioning of the Complex and the Commissioning Tests no later than one hundred twenty (120) Days prior to the Scheduled Commercial Operations Date provided to the Power Purchaser pursuant to the first sentence of this Section 6.5(a);"

Section 6.2:

"The Power Purchaser shall be responsible for the design, construction, financing, completion, and commissioning of the Power Purchaser Interconnection Facilities in accordance with Schedule 3..."

Section 6.3:

"Within three (3) Months after the execution of this Agreement and in any event not later than the date of the notice given by the Company to the Power Purchaser pursuant to Section 6.5, the Company shall provide to the Power Purchaser the information required in Schedule 3.

Based upon this information, the Power Purchaser will design, construct and complete the Power Purchaser Interconnection Facilities within the time required by Section 6.5.

³¹ C-1, PPA, Section 4.1(b).

Within ten (10) Days of a request by the Power Purchaser, the Company shall provide all additional information reasonably requested by the Power Purchaser in connection with its completion of the Power Purchaser Interconnection Facilities. The Power Purchaser shall use such supplemented information in its final design of the Power Purchaser Interconnection Facilities. The timely provision by the Company of such supplemental or additional information shall not modify the obligation of the Power Purchaser to complete the Power Purchaser Interconnection Works as required herein".

31. National was required to complete the PPIF/PPIW "no later than 120 days before the SCOD" unless certain events had occurred, in which case the completion date was to be extended.
32. The "Metering System" which measures the electrical output from the Complex was "to be procured by [National], and thereafter installed and tested by [Star Hydro] and transferred to [National] and thereafter owned and maintained by [National]".³²

D. Testing of the Complex

33. The Complex had to undergo detailed testing prior to the start of commercial operations. The testing requirements were set out in detail in Section 8 of the PPA. The PPA provided that there was to be (i) testing prior to the COD (Section 8.1), (ii) testing prior to synchronization with the grid (Section 8.2), (iii) so called "initial operations testing", which would occur after the Complex was synchronized with the grid, then, once Star Hydro was satisfied that the Complex was capable of "continued reliable operation", the Commissioning Tests would be carried out.
34. Of note in the PPA are the following obligations.
35. First, Star Hydro was required to provide a testing programme and schedule to National. The parties made provision for the parties to "mutually agree"³³ different dates if National was "unable (including by reason of its failure to complete the Power Purchaser Interconnection Facilities)...to accommodate the schedule". If these dates were deferred beyond fifteen days after the mutually agreed date, then National was to make certain payments to Star Hydro. The parties further provided that National would not be obliged to

³² C-1, PPA, Section 1.1.

³³ C-1, PPA, Section 8.1(b)(i).

make these payments if the delay to the tests *"would nevertheless have occurred regardless of [National's] delay or deferral"* of the tests.³⁴

36. Second, *"prior to synchronization of the Complex with the Grid System"* the Engineer was required to provide the *"Certificate of Readiness for Synchronization"*.³⁵ This was defined as *"the certificate to be issued by the Engineer to the Company and the Power Purchaser under Section 8.2 stating, in relation to the Complex that the Complex has, in the professional opinion of the Engineer, passed the necessary no load, full speed tests and the Complex is in a condition that is ready for and capable of synchronization with the Grid System"*.³⁶ Pre-synchronization tests were listed as (a)-(g) in Section 8.2 of the PPA. Tests (a)-(e) were carried out from 20-26 December 2016³⁷ and the remaining two (Section 8.2(f) and Section 8.2(g)) tests were completed on 11 June 2017.³⁸
37. Third and as noted, after synchronizing the Complex, there was to be *"initial operational testing of the Complex"* carried out by Star Hydro.³⁹ Once Star Hydro was *"satisfied that the Complex is capable of continued reliable operation"* Star Hydro was entitled to request that the Engineer issue the *"Certificate of Readiness"*. This was defined as *"the certificate to be issued by the Engineer to the Company and the Power Purchaser under Section 8.1 stating, in relation to the Complex, that the Complex is, in the professional opinion of the Engineer, ready for the Commissioning Tests to be carried out and that the Complex is in a condition that it will successfully complete the Commissioning Tests"*.⁴⁰ Following the issuance of the Certificate of Readiness, Star Hydro was to notify National and carry out the Commissioning Tests, which, if the tests were passed, would result in the Complex being commissioned and the establishment of the COD.
38. The Commissioning Tests were completed, and the Complex commissioned (and the COD established) on 8 November 2017.

³⁴ C-1, PPA, Section 8.1(c).

³⁵ C-1, PPA, Section 8.2.

³⁶ C-1, PPA, Definitions.

³⁷ Thick Statement 1, paragraph 21.

³⁸ C-33, Hussain Statement 1, paragraph 27.

³⁹ C-1, PPA, Section 8.3.

⁴⁰ C-1, PPA, Definitions.

E. Certification of the Complex

39. As noted above, one step in the testing process comprised the pre-synchronization tests. If successfully completed these tests enable the synchronization of the Complex, which involves connecting the Complex to the grid for the first time. Section 8.2 of the PPA required the Engineer to provide Star Hydro and National with a "*Certificate of Readiness for Synchronization*". This was to be issued after the following tests had been carried out:

"(a) automatic voltage regulator setting and adjusting in stand still condition and with the generator running at no load;

(b) Turbine governor control checks

(c) open and short circuit tests on each generator; and

(d) functional testing and timing of high voltage switchgear in the switchyard of the Complex.

(e) The Company and the Power Purchaser shall verify that the protection level settings for the following are as agreed by the Operating Committee:

(i) stator earth fault;

(ii) negative phase sequence;

(iii) generator transformer over-current and earth fault; and

(iv) high voltage bus-bar protection.

(f) Voltage phasing checks will be carried out between the sub-station of the Complex and the Grid System.

(g) All inter-tripping circuits between the Complex and the Power Purchaser's equipment will be proved".

40. Tests (f) and (g) required a connection to the grid.⁴¹

⁴¹ Thick Statement 1, paragraph 21.

41. After the Complex had been synchronized, there was to be further "initial operational testing".⁴² When Star Hydro was "satisfied that the Complex is capable of continued reliable operation" it was to request that the Engineer issue the "Certificate of Readiness", at which point the "Commissioning Tests" were to be carried out. These were:

- "(i) initial Tested Capacity test;*
- (ii) reliability run test;*
- (iii) automatic voltage regulator droop;*
- (iv) Turbine governor operation;*
- (v) reactive capability;*
- (vi) minimum load capability;*
- (vii) response of Complex to step load changes; and*
- (viii) full load rejection".*

42. Once the Commissioning Tests had been successfully completed, the Engineer was required to certify the capacity of the Complex and issue the Capacity Test Certificate.

F. Delays

43. Leaving aside for present purposes the contested issue as to when the PPIW were completed, it is accepted by the parties that there was delay to the project and that all the pre-synchronization tests of the Complex were not completed until 11 June 2017, with COD not achieved until 8 November 2017.

44. National asserts that it was impeded by Star Hydro in completing the PPIW and it points to four events in particular that caused delay that it alleges were attributable to Star Hydro. These are: (i) changes in the location of the terminal tower; (ii) issues with the installation of fire-fighting equipment; (iii) issues with the 11kV feeder; and (iv) changes in location of the switchyard. National also asserts that there was an additional delay caused by Star Hydro allegedly insisting on a particular type of relay being installed to protect the transmission line.

⁴² C-1, PPA, Section 8.3.

45. Star Hydro disputes that these events caused the delay to the completion of the PPIW (which it asserts was required before the pre-synchronization tests could take place) and instead alleges that National began construction of the PPIW late and did not obtain relevant approvals in time.⁴³

G. Delay Payments and Liquidated Damages

46. At the heart of this dispute is the question of the imposition or otherwise of delay payments and liquidated damages in accordance with the PPA.
47. Section 6.5(b) of the PPA states:

(b) If the Power Purchaser has not completed, Commissioned and energized the Power Purchaser Interconnection Works by the date required in this Section 6.5, as such date may be extended as provided in this Section 6.5, and such delay causes a delay in the Commissioning of the Complex, the Required Commercial Operations Date shall be extended Day-for-Day until the date on which the Power Purchaser Interconnection Works are completed. In addition, if the Power Purchaser has not completed the Power Purchaser Interconnection Works by the date which is fifteen (15) Days following such date, and such delay causes a delay in Commissioning of the Complex, as certified by the Engineer under Section 8.3, then the Power Purchaser shall pay to the Company Monthly, in arrears, (and prorated for any portion of a Month) an amount equal to (i) the Carrying Costs plus, fifty percent (50%) of the "Insurance Component", and fifty percent (50%) of the "Fixed O&M Component" of the Capacity Price computed on the basis of the Contract Capacity. The Return on Equity during the extended construction period on account of such delay shall be accrued and payable through the updating of Reference Tariff Table 1 in Schedule 1 at the time of the Commercial Operations Date. Such payments shall commence on the Scheduled Commercial Operations Date prevailing immediately prior to such delay and shall continue until the earlier of (i) the end of a period equal to the period of delay in completing the Power Purchaser Interconnection Works and (ii) the completion of the first attempted Commissioning Tests (whether successfully completed or not); provided, however, that the payment of such amounts by the Power Purchaser and extension of the Required Commercial Operations Date shall be subject to issuance by the Engineer of the Certificate of

⁴³ Statement of Defence and Counterclaim, paragraph 71.

Readiness for Synchronization and a simultaneous certification by the Engineer that the delay caused by the Power Purchaser would likely cause the then scheduled Commissioning Tests to be delayed. The Power Purchaser shall notify the Company, with at least a ten (10) Days notice, at the end of any such delay..."⁴⁴

48. Star Hydro claims delay payments from National under Section 6.5(b) on the basis that National did not complete the PPIW on time and that the delay to the completion of the PPIW caused a knock-on delay to the commissioning of the Complex.

49. Section 9.6(c) of the PPA states:

"If the Company is in breach of its obligation under Section 4.1(b) to achieve the Commercial Operations Date by the Required Commercial Operations Date, then for each Month (prorated daily) thereafter until the Commercial Operations Date is actually achieved, the Company shall pay the Power Purchaser as liquidated damages an amount equal to two and one-half Dollars (\$2.50) per kW of Contract Capacity per Month (prorated daily) until the Commercial Operations Date is achieved. The Parties acknowledge and agree that it would be difficult or impossible at the date of this Agreement to determine with absolute precision the amount of damages that would or might be incurred by the Power Purchaser as a result of the Company's failure to perform those matters for which liquidated damages are provided under this Section 9.6".

50. National claims liquidated damages from Star Hydro under Section 9.6(c) on the basis that the Complex was not commissioned by 20 March 2017 (the RCOD).

H. The Principal Debt Invoice

51. There is also a dispute in relation to Star Hydro's financing of the Complex and, in particular, the first instalment Star Hydro paid to its lenders on 30 June 2017.⁴⁵ The first instalment amounted to USD 9,507,197.18 and is referred to in this Final Award as the "Principal Debt Invoice".⁴⁶

⁴⁴ Emphasis added.

⁴⁵ E/321.

⁴⁶ C-77.

52. Star Hydro relies on Section 6.5(b) of the PPA to assert that National is required to compensate it for the Principal Debt Invoice. This states:

“In addition to the payment of the aforesaid amounts, if the delay by the Power Purchaser in completing the Power Purchaser Interconnection Facilities continues beyond the sixtieth (60th) Day following the date of the issuance by the Engineer of the Certificate of Readiness for Synchronization and a simultaneous certification by the Engineer that the delay caused by the Power Purchaser would likely cause the then scheduled Commissioning Tests to be delayed, the Power Purchaser shall also be required to pay the principal debt payments when due under the Financing Documents; provided that such principal debt paid by the Power Purchaser under this Section 6.5 shall be excluded in any determination or calculation of the Tariff at the Commercial Operation Date to be paid by the Power Purchaser hereunder. Such principal debt payment shall be due from the Power Purchaser within thirty (30) Days following receipt of an invoice therefor (but in no event earlier than the sixtieth (60th) day following the Scheduled Commercial Operations Date prevailing immediately prior to such delay), which invoice shall be signed by the Lenders or the Agent certifying the amount shown therein to be correct and stating the due date for such payment of principal debt under the Financing Documents. Such payments shall continue until the earlier of (i) the end of a period equal to the period of delay or deferral of any Commissioning Test or Commissioning Tests and (ii) the completion of the first attempted Commissioning Tests (whether successfully completed or not)”.

I. The Expert Determination

53. As described above, the parties agreed in the PPA that disputes could be submitted to an expert for determination prior to being referred to arbitration. The parties duly appointed Mr Badr-ul-Munir Murtiza (the “Expert”) in accordance with Section 18.2(b) of the PPA, and he issued the “*Report on Expert’s Determination of Disputes*” on 24 September 2020 (the “Expert Determination”).⁴⁷ The Expert held that National was entitled to payment of liquidated damages under Section 9.6 of the PPA of US\$649,250 from Star Hydro and that Star Hydro was entitled to payment of PKR 616,865,850 from National for delay payments under Section 6.5(b) of the PPA. National made a payment of PKR 512,401,525 to Star

⁴⁷ C-2, C-3.

Hydro, being the net amount to which Star Hydro was entitled under the Expert Determination.

54. At the preliminary hearing the parties confirmed that the arbitrations were commenced within the 75-day period from the date on which the Expert Determination was notified to the parties, therefore and in accordance with Section 18.2(b) of the PPA, the Expert Determination was not binding on the parties, and they were entitled to commence the arbitrations. For the avoidance of doubt, the Sole Arbitrator further confirms that the Expert Determination is not binding on the parties, nor is it binding on the Sole Arbitrator.

III. THE PARTIES' POSITIONS AND RELIEF REQUESTED

55. As described at the outset, this arbitration was a consolidated arbitration, therefore although National was nominally the Claimant in the arbitration, in fact both parties were asserting competing, if not quite mirror, claims for compensation for the delays experienced in commissioning the Complex.

A. National

56. National's claims are based on an allegation that Star Hydro delayed the commissioning of the Complex by 233 days and is therefore liable to pay National liquidated damages for this delay under Section 9.6(c) of the PPA. National also contends that the RCOD could not be extended under Section 6.5(b), that Star Hydro is not entitled to any payment under Section 6.5(b) and that the payment made by National to Star Hydro in accordance with the Expert Determination should be returned.

57. National seeks the following relief from the Sole Arbitrator:

"(a) Order the Respondent to make the payment of US\$ 2,800,508/- (United States Dollars Two Million Eight Hundred Thousand Five Hundred and Eight only) as set out in NTDC's LD Invoice in terms of Section 9.6(c) of the PPA;

(b) Order the Respondent to make/return the payment of PKR 512,401,525/- (Pakistan Rupees Five Hundred and Twelve Million Four Hundred One Thousand and Five Hundred and Twenty Five Only) to the Claimant being the amount paid by the Claimant to the Respondent pursuant to the Expert Determination;

(c) Declare that the Respondent does not have an entitlement to demand or receive any payment from the Claimant under Section 6.5(b) of the PPA (as set out in SHPL's Invoices) and that SHPL's Invoices are not valid;

(d) Order the Respondent to pay all arbitration costs, including but not limited to, the Claimant's counsel's costs and expenses;

(e) Order the Respondent to make the payment of interest at the applicable rate on all of the above amounts as of the date these amounts were due until the date of their effective payment at the rate per annum equal to the Delayed Payment Rate; and

(f) Order any further and/or additional relief as the Arbitral Tribunal may deem just and appropriate".⁴⁸

B. Star Hydro

58. Star Hydro alleges that National was responsible for completing the PPIW late and in breach of Section 6.5(a) of the PPA, that this triggered an extension of the RCOD, and that National's delay in completing the PPIW entitles Star Hydro to delay payments under Section 6.5(b) of the PPA. Star Hydro also seeks payment of the Principal Debt Invoice under the same provision of the PPA, together with interest and further relief.

59. Star Hydro seeks the following relief from the Sole Arbitrator:

"i. DECLARE that NTDC is not entitled to receive liquidated damages under Section 9.6(c) of the PPA;

ii. DECLARE that NTDC completed the PPIW 224 days late in breach of Section 6.5(a) of the PPA;

iii. ORDER NTDC to pay to SHPL the amounts of Carrying Costs, Insurance Component and Fixed O&M Component payable by NTDC in accordance with Section 6.5(b) of the PPA for the period of NTDC's delay in completing the PPIW, in the amount of PKR 1,491,805,897 as invoiced by SHPL in the Delay Invoices or such other amount as the Sole Arbitrator determines to be payable, minus PKR 512,401,525 (the sum already paid by NTDC to SHPL pursuant to the Expert Determination);

⁴⁸ Statement of Claim, paragraph 125.

iv. DECLARE that SHPL is entitled, under Section 6.5(b) of the PPA, to the full sum invoiced in the Principal Debt Invoice;

v. ORDER NTDC to pay to SHPL the amount of USD 9,507,197.18 as set out in the Principal Debt Invoice, except to the extent that this would lead to double-recovery by SHPL;

vi. ORDER, in the alternative, NTDC to:

a. pay to SHPL the amount of USD 9,507,197.18 as set out in the Principal Debt Invoice, less any amounts – to be quantified during the course of this arbitration – that SHPL is entitled to recover through the post-COD Tariff following NEPRA's COD Tariff Decision; and

b. continue to pay to SHPL the post-COD Tariff in accordance with the COD Tariff Decision (including the debt servicing component) for the full period of twelve years as envisaged by NEPRA;

vii. ORDER NTDC to pay to SHPL the additional financing costs incurred by SHPL in raising the Principal Debt Payment prior to COD – to be quantified during the course of this arbitration;

viii. ORDER NTDC to pay to SHPL interest on the above sums, including the amount of interest payable at the Delayed Payment Rate (as defined in the PPA) under Section 9.9(b) of the PPA on the amounts outstanding against the sums paid pursuant to the Expert Determination;

ix. ORDER NTDC to pay all of the costs and expenses of this arbitration, including the fees and expenses of SHPL's counsel and any witnesses and/or experts in the arbitration, the fees and expenses of the Sole Arbitrator and the costs of the LCIA; and

x. ORDER such further or other relief as the Sole Arbitrator may in its discretion consider appropriate".⁴⁹

⁴⁹ Statement of Defence and Counterclaim, paragraph 207.

IV. THE SOLE ARBITRATOR'S ANALYSIS

60. The Sole Arbitrator has reviewed and considered in detail the written submissions of the parties, oral submissions from counsel and the evidence given by the numerous witnesses during the evidentiary hearing, as well as the voluminous documents and legal authorities relied upon by both parties during this arbitration.
61. In Section IV(A) of this Final Award the Sole Arbitrator considers the application of Pakistan law. In Section IV(B) the Sole Arbitrator addresses National's claims for liquidated damages through a detailed textual analysis of Section 6.5 of the PPA, considering the delays to the commissioning of the Complex, in particular the delay in completing the PPIW and whether National was impeded by Star Hydro in completing the PPIW. The Sole Arbitrator then discusses whether the RCOD could be, and was, extended under the PPA before establishing the responsibility for the delays and the entitlement to delay payments in Section IV(C), which also analyses whether Star Hydro is entitled to payment of the Principal Debt Invoice. Section IV(D) addresses the responsibility for the period 30 October 2017 – 8 November 2017. Section IV(E) addresses whether Star Hydro is entitled to its additional financing costs. The parties' agreed list of issues is addressed at Section IV(F). Quantum and costs are addressed in Section IV(G) and IV(H) respectively.

A. The Application of Pakistan Law

62. The LCIA Rules state: "*The Arbitral Tribunal shall decide the parties' dispute in accordance with the law(s) or rules of law chosen by the parties as applicable to the merits of their dispute*".⁵⁰ The Sole Arbitrator has decided this dispute in accordance with Pakistan law, as agreed by the parties. The Sole Arbitrator applies Pakistan law in her interpretation of the PPA and relies on Pakistan law to determine the standard of proof required for a party to succeed in its case. Although the parties did not address the Sole Arbitrator directly on the standard of proof under Pakistan law, she proceeds on the basis that a party must prove a cause of action by a preponderance of the evidence, in other words, a party must show to the satisfaction of the Sole Arbitrator that it was more likely than not that the alleged breach occurred, which accords with the standard of proof for civil matters in Pakistan.
63. In terms of the approach the Sole Arbitrator should take in construing the PPA, Star Hydro asserted that as "*neither Party has argued that the law as to contractual interpretation under*

⁵⁰ Article 22.3, LCIA Rules.

the laws of Pakistan differs from the English law approach, English law approach [sic] should therefore be applied".⁵¹ In response to questioning by the Sole Arbitrator during the evidentiary hearing, Star Hydro's Counsel stated that "*whether you apply the normal principles of contractual interpretation as a matter of English law or a matter of Pakistan law you are still looking at the words used in the context that they are used to determine the intentions of the parties*"⁵² and directed the Sole Arbitrator to the well-known English authorities of *Capita Insurance Services Limited v Wood*⁵³ and *Arnold v Britton*⁵⁴ and "*equivalent Pakistan law authorities*".⁵⁵ National's Counsel directed that the Sole Arbitrator take note of the approach in *Capita Insurance Services Limited v Wood*,⁵⁶ in particular highlighting the judgment of Lord Hodge that "*[s]ome agreements may be successfully interpreted principally by textual analysis, for example because of their sophistication and complexity and because they have been negotiated and prepared with the assistance of skilled professionals*".⁵⁷ National's Counsel also referred the Sole Arbitrator to the judgement of the Sindhu High Court in *Haji Naimatullah v The Federation of Pakistan*⁵⁸ which emphasized that "*the entire document should be read as a whole to gather the intention of the parties and that the court shall lean to an interpretation which will effectuate rather than one which will invalidate an instrument*".⁵⁹

64. National's Counsel agreed with Star Hydro's Counsel that "*for the most part*" the English and Pakistan authorities overlapped but noted that there were some differences which arose, particularly in relation to the application of the parole evidence rule.⁶⁰ In construing the PPA the Sole Arbitrator has adopted the approach promulgated by both Counsel, namely that there should be a textual analysis of the PPA encompassing the common and ordinary meaning of the words used, that the document should be read as a whole and that the intentions of the parties should be identified by reference to what a reasonable person, in

⁵¹ Star Hydro's Pre-Hearing Brief, paragraph 18.

⁵² Tr 1/48:12-25: 49: 1-5.

⁵³ CA-13.

⁵⁴ RA-2.

⁵⁵ Tr 1/49:3.

⁵⁶ CA-13.

⁵⁷ Tr 1/54:12-23.

⁵⁸ CA-11.

⁵⁹ Tr 1/55:21-25:56:1-3.

⁶⁰ Tr 1/49:19-24.

light of the relevant background knowledge of the parties, would have understood the parties to mean.⁶¹

65. Counsel did adopt differing positions regarding the nature of the PPA, with National's Counsel asserting that the PPA was a statutory or regulated contract and Star Hydro's Counsel taking the contrary position. The Sole Arbitrator does not dwell on whether the PPA should be considered to be a statutory contract here, nor does she make a finding as to whether the PPA is or is not to be considered a statutory or regulatory contract. She confines herself to the observation that there was no divergence between Counsel's views as to whether she should depart from general principles of contractual interpretation were the PPA to be treated as a statutory contract. During the evidentiary hearing National's Counsel accepted that Pakistan courts "*have taken the position that there is really no real distinction between principles of interpretation that apply to statutes and that apply to contracts*" and concluded that the principles "*are, for the most part, identical*".⁶² The Sole Arbitrator therefore determined that it was unnecessary for her to reach a conclusion on the nature of the PPA, as the approach she took to its interpretation was not affected by the type of contract it was.
66. The claims, as noted, are not precise mirror claims, but overlap significantly. Determining the claims requires a textual analysis of, in particular, Section 6.5(b) of the PPA. The first part of Section 6.5(b) addresses whether National's obligation to complete the PPIW by 29 October 2016 is excused, permitting National to claim liquidated damages from Star Hydro under Section 9.6(c). The second part of Section 6.5(b) addresses the right of Star Hydro to recover delay payments from National in the event that its failure to complete the PPIW by 29 October 2016 is not excused. Each claim is addressed in turn below.

B. National's claim to Liquidated Damages

67. The Complex was commissioned on 8 November 2017 and not on 20 March 2017 as planned. National claims that it is entitled to liquidated damages from Star Hydro for 233 days (from 20 March 2017 to 8 November 2017), claimed through an invoice dated 7 February 2019.⁶³

⁶¹ *Capita Insurance Services Limited v Wood, Arnold v Britton, Haji Naimatullah v The Federation of Pakistan*.

⁶² Tr 1/51:11-25.

⁶³ C-8.

68. The PPA places an absolute obligation on Star Hydro in Section 4.1(b) to “*carry out and complete the Construction Works such that the Company is able to achieve the Commercial Operations Date by the Required Commercial Operations Date*”,⁶⁴ which was, of course, 20 March 2017, unless that date was extended by the operation of the PPA. National advances its claim based on Section 9.6(c) of the PPA which states: “*If [Star Hydro] is in breach of its obligation under Section 4.1(b) to achieve the Commercial Operations Date by the Required Commercial Operations Date, then for each Month (prorated daily) thereafter until the Commercial Operations Date is actually achieved, [Star Hydro] shall pay [National] as liquidated damages an amount equal to two and one-half Dollars (\$2.50) per kW of Contract Capacity per month (prorated daily) until the Commercial Operations Date is achieved*”.⁶⁵
69. The starting point for consideration of National’s claim for liquidated damages for the period from 20 March 2017 to 8 November 2017 is whether the RCOD of 20 March 2017 was extended through the operation of Section 6.5(b) of the PPA. If the RCOD was extended by operation of the PPA, then National’s claim for liquidated damages is reduced or eliminated.
70. The Sole Arbitrator looks first at the constituent parts of the first sentence of Section 6.5(b) of the PPA. The parties agreed that the RCOD would be extended in a situation where: “*the Power Purchaser has not completed, Commissioned and energized the Power Purchaser Interconnection Works by the date required in this Section 6.5, as such date may be extended as provided in this Section 6.5, and such delay causes a delay in the Commissioning of the Complex, the Required Commercial Operations Date shall be extended Day-for-Day until the date on which the Power Purchaser Interconnection Works are completed...*”

1. The first limb of the first sentence of Section 6.5(b)

71. Taking each limb of this section in turn. First, National was required to complete, commission and energize the PPIW by “*the date required in this Section 6.5*”. It was common ground between the parties, as confirmed by the Joint Expert Report of Shahid Mahmood, John Martens and Timothy Morse,⁶⁶ that completion of the PPIW was required by 29 October 2016. This would give the parties 120 calendar days to meet the SCOD of 26 February 2017 and 142 calendar days to meet the RCOD of 20 March 2017. It is also

⁶⁴ C-1, PPA, Section 4.1.

⁶⁵ C-1, PPA, Section 9.6(c)

⁶⁶ D/17.

common ground between the parties that PPIW were not completed by 29 October 2016, therefore the first limb of the first sentence of Section 6.5(b) is satisfied.

2. The second limb of the first sentence of Section 6.5(b)

72. Second, the parties agreed that the date of 29 October 2016 for the completion of the PPIW could be extended "*as provided in this Section 6.5*". Section 6.5(a) set out four categories of events that, if they occurred, would extend on a day for day basis and "*to the extent necessary*" the date for completion of the PPIW. These were:

(i) Star Hydro's failure to execute "*easements, rights-of-way, licenses and other documents*";

(ii) Star Hydro's failure to provide National with certain technical data requested by National and which was "*reasonably necessary*" for National to "*undertake the design, construction, completion, installation, commissioning, maintenance and operation of the [PPIF]*";

(iii) a Force Majeure event impacting National's ability to complete the PPIW; and

(iv) "*any other failure by [Star Hydro] that materially and adversely affects [National's] ability to perform its obligations*".

All these events are subject to the caveat that no extension of time for the completion of the PPIW is to be granted to National "*to the extent that such failure or delay would nevertheless have been experienced by [National]*".

73. According to Mr Mahmood, who gave expert evidence on behalf of National, construction of a transmission line involves three main stages: (i) initial works such as "*survey and finalization of route, preparation of profile of transmission line, centre pegging/tower spotting of level terrain, tower staking, tower spotting of hilly terrain with respect to natural surface level, preparation of design of foundations, finalization of tower types, and release of towers*", (ii) after the initial works are completed, "*erection of towers and stringing (i.e., laying of conductors and wires between towers)*" takes place, and (iii) the final stage is the "*instrumentation of various measuring/protective equipment (including line protection relays), testing, and commissioning*".⁶⁷ National argues that Star Hydro's actions materially and adversely affected National's ability to construct and complete the PPIW, both in

⁶⁷ Mahmood Report 1, paragraph 29.

relation to performance of its obligations within the Complex and during construction of the transmission line.⁶⁸

74. National claims Star Hydro caused a delay of (i) 168 days in completion of the PPIW by withholding permission to access the site and/or changing the location of the terminal tower; (ii) 22 days in completion of the PPIW by not timely removing the fire-fighting equipment; (iii) 111 days in completion of the PPIW by failing to resolve problems caused by the 11kV feeder; and (iv) 179 days in completion of the PPIW by changing the location of the switchyard.⁶⁹ To succeed in its arguments in relation to this second limb of the first sentence of Section 6.5(b), National must show that Star Hydro's actions materially affected its work and that but for Star Hydro's actions it would have completed the PPIW on 29 October 2016. It has failed to do so.
75. First, the Sole Arbitrator observes that this argument was not assiduously pursued by National during the evidentiary hearing and not addressed by National in its oral or written closing submissions. Second, while it was clear from the evidence that the terrain over which the transmission line was extremely challenging and that there were difficulties obtaining environmental consents and addressing the demands of local people,⁷⁰ National did not furnish the Sole Arbitrator with sufficient evidence to enable the Sole Arbitrator either to assess its case on the delays allegedly caused by Star Hydro or to quantify those delays (and properly assess the impact of any overlapping delays). Accordingly, the Sole Arbitrator was placed in a difficult position in assessing whether any of the allegations made by National caused critical delay to its work in completing the PPIW and, further, that any such delays were properly attributable to Star Hydro and, in particular, whether they arose as a result of Star Hydro's failure to perform in accordance with its obligations under the PPA.
76. Mr Mahmood considered that *"the root cause of all the problems were failure of timely reporting to the EPA, getting the permissions from the EPA, changing location of the switch -- certainly have to contribute to it, and ROW issues, right of way issues. So these issues were the actual major cause of all these things"*.⁷¹ Notably Mr Mahmood did not consider

⁶⁸ National's Pre-Hearing Brief, paragraph 104 *et seq.*

⁶⁹ National's Pre-Hearing Brief, paragraph 11(c).

⁷⁰ Tr 4/ 53: 1-18 (Mr Mahmood).

⁷¹ Mr Mahmood Tr 4:26:12-17, see also Mr Mahmood's presentation which stated:

"Major reasons for this delay were ROW issues and delayed permission from the forest department. Root cause of these problems was failure of timely reporting to the EPA of the change in location of the switchyard and obtaining the required permission".

that issues involving the location of the terminal tower (and/or access to the site), the fire-fighting equipment or the installation of the 11kV feeder constituted critical delay caused by Star Hydro to National's work in completing the PPIW.

77. Both Mr Mahmood and Mr Martin, who gave expert evidence on behalf of Star Hydro, agreed that the change in location of the terminal tower did not cause critical delay.⁷² This was further confirmed by Mr Mahmood on cross examination.⁷³ The Sole Arbitrator was not persuaded that Star Hydro had denied National access to the site to construct the terminal tower prior to July 2016 (or at all).⁷⁴ Although extensive evidence was given at the evidentiary hearing regarding the decision to move the location of the terminal tower, National did not meet its burden to show that Star Hydro had failed to perform under the PPA and that any action in relation to the location of the terminal tower materially and adversely affected National's ability to complete the transmission line.
78. National also argued that Star Hydro failed to move fire-fighting equipment in a timely manner and caused National delay as a result. Although Mr Nazir's evidence was that the fire-fighting equipment was "*a hindrance*"⁷⁵ to the work at the site, and that he requested that the equipment be removed on 15 December 2016 (and it was not removed until 6 January 2017),⁷⁶ in the evidentiary hearing he confirmed that National would not have started work on the terminal tower on 15 December 2016 even if the fire-fighting equipment had been removed that day. He also agreed that National had in fact requested the equipment be moved on 3 January 2017 and it was removed on 5 January 2017.⁷⁷
79. National also argued there was delay relating to a failure by Star Hydro to lower the 11kV feeder, the internal power line that provides electricity for the Complex itself, and that the delay period ran from 3 January 2017 to May 2017. Mr Nazir addressed this issue at the evidentiary hearing and confirmed that had there been no issue with the 11kV feeder, National would not have been in a position to complete the PPIW on 3 January 2017.

"Q. Are you saying that if it wasn't for the 11kV Feeder you would have energise the transmission line 111 days earlier on 3 January?"

⁷² Joint Report of Shahid Mahmood and Christopher Martin.

⁷³ Tr 4/35:2-11.

⁷⁴ Sadiq Statement 1, paragraphs 61-64. Mr Sadiq's evidence regarding the terminal tower was largely unchallenged during the evidentiary hearing.

⁷⁵ Tr 2/81: 13.

⁷⁶ Nazir Statement 1, paragraph 28.

⁷⁷ Tr 2/76:14-17, see also Tr 2/76-79.

A. No, sir, we cannot energise the line on 3 January, but we can start the work for the terminal tower, so because the delayed, this issue, that is why I mention this date.

Q. Yes. We can agree. can't we, that it didn't caution [sic] a delay of 111 days?

*A. Yes.*⁷⁸

Mr Martin was not challenged in his view that the timing of the lowering of the 11kV feeder did not cause critical delay⁷⁹ and Mr Mahmood also confirmed this on cross examination.⁸⁰

80. The switchyard (where the electricity is prepared for transmission to the grid) was initially envisaged to be near the powerhouse, however it was subsequently moved to on top of the powerhouse.⁸¹ National argued that the change in location of the switchyard resulted in Star Hydro materially impacting National's work with regard to the PPIW, particularly because of difficulties obtaining consents for tree clearance given the location of the switchyard on top of the powerhouse. National also argued that Star Hydro failed to obtain environmental consent for the move.⁸² Mr Shah, Senior Manager for Star Hydro, was not challenged on his evidence that the environmental impact assessment did not mention the location of the switchyard in any detail⁸³ and, in fact, the delays identified by National related to the tree clearances. Mr Martin summarised the issue as follows:

*"any delay being claimed does not specifically relate to the change in location of the switchyard, but more specifically to the failure to have approval to remove the necessary trees. Given this was outside the Complex site and on the route of the Transmission Line, this must be NTDC's responsibility....Furthermore, as noted in respect of the other events, without detail of the progress of the works and what was planned and actually occurred it is not possible to say that any delay associated with the tree clearance caused critical delay to the completion of the PPIW".*⁸⁴

⁷⁸ Tr 2/88:5-14.

⁷⁹ Martin Report 1, paragraph 10.7.9.

⁸⁰ Tr 4/40:7-17.

⁸¹ Nazir Statement 1, paragraph 38.

⁸² Statement of Claim, paragraph 55.

⁸³ Shah Statement 1, paragraphs 13-15.

⁸⁴ Martin Report 1, paragraphs 10.9.23-10.9.24.

81. The issues regarding rights of way and tree clearances faced by National were significant, requiring government attention at times, but were not attributable to Star Hydro.⁸⁵ As Mr Nazir confirmed in his evidence:

"All of these problems they talk about in this letter, none of these are anything to do with Star Hydro, are they?"

Yes, it was relating to us and we resolved these issues with the help of the local administration, even some locations were cleared with the intervention of the Prime Minister of A.J.&K. So this line was the toughest line in my service".⁸⁶

82. The Sole Arbitrator found National's witnesses compelling in relation to the serious and challenging issues they experienced completing the transmission line, however she was not persuaded that it was more likely than not that Star Hydro's actions had impeded National's work and had caused the delay to the completion of the PPIW. Further, the parties agreed that there would be no extension of time for the completion of the PPIW, even where National could show the existence of events which were attributable to Star Hydro (which, for the reasons given above it has failed to do so), if the "failure or delay" would nonetheless have been experienced by National. The Sole Arbitrator additionally determined that it was more likely than not that the delays in completing the PPIW would nonetheless have been experienced by National.

3. The third limb of the first sentence of Section 6.5(b)

83. Third, the delay beyond 29 October 2016 in the completion of the PPIW must "cause a delay in the commissioning of the Complex". Further text in Section 6.5(b) appears to impose an obligation on the Engineer to validly certify this delay. As it is preferable to address these issues together, the Sole Arbitrator determines the question whether a delay was caused to the commissioning of the Complex and the validity of the certification of the delay in Section IV(B)4(b) below.
84. National additionally asserted that a period "over which the Respondent was itself not in a position to proceed with synchronization and which overlaps with the period of delay in the PPIW is a period what must be excluded from the period of delay in PPIW that is to result in

⁸⁵ National did not apply for the tree clearance consents until February 2017 (E/130/1927) and the EPA confirmed that the problem "could have been averted" if National had applied earlier (E/130/1928).

⁸⁶ Tr 2/108:2-9.

an extension to RCOD".⁸⁷ National argued that the Complex was not ready to proceed with synchronization until 9 February 2017 (being, it said, the date of the Certificate of Readiness for Synchronization). It therefore argued that the period for 29 October 2016 to 9 February 2017 should be excluded from the period of delay to calculate the extension of the RCOD. The Sole Arbitrator addresses this argument in Section IV(B)4(c) below.

4. The fourth limb of the first sentence of Section 6.5(b)

85. If the three elements set out above are met the RCOD would be extended. The calculation of the period by which the RCOD would be extended was specified in the fourth limb of Section 6.5(b) to be "*Day-for-Day until the date on which the [PPIW] are completed*". To properly calculate the period, it is therefore necessary to determine when the PPIW were completed and when the period by which the RCOD would be extended should commence.

(a) When were the PPIW completed?

86. Returning briefly to the first limb of the first sentence of Section 6.5(b), National was required to have "*completed, Commissioned and energized*" the PPIW by 29 October 2016 and the RCOD would be extended day for day to account for the period after 29 October 2016 during which the PPIW were not completed, commissioned and energized. The parties offered three possible dates for the Sole Arbitrator to consider in this regard: 28 April 2017, 29 May 2017, or 10 June 2017.

87. The starting point is, of course, the language of the PPA. The definition of the PPIW is "*those works and activities described in Schedule 3 to be undertaken by or on behalf of the Power Purchaser for the design, engineering, construction, installation and commissioning of the Power Purchaser Interconnection Facilities in accordance with the Agreement*". Schedule 3 is entitled "*Interconnection and Transmission Facilities*". It first addresses "*Interconnection*", requiring that the connection between the switchyard and the grid is to be made by Star Hydro "*through a 132KV double circuit transmission line to be constructed, owned, operated and maintained by [National]...The circuits of the transmission line will be connected through insulator strings to the line termination gantries of 132 kV switchyard at the Complex (the "Interconnection Point"). The boundary of responsibility between the Company and the Power Purchaser will be the tee clamp connecting the drop-in span to the switchyard equipment*". It then addresses "*Protection*" and states "*A carrier intertripping*

⁸⁷ National's Post-Hearing Brief, paragraph 14.

circuit for each transmission line shall be provided between the line circuit breakers at the Complex owned by the Company and the line circuit breakers at substations mentioned in 1(a) above”.

88. Section 6.5(a) specified that National was to “complete the [PPIW] and be able to absorb in the Grid System electrical power generated by the Complex as is necessary to enable [Star Hydro] to carry out the pre-commissioning of the Complex and the Commissioning Tests”. The obligation on National, therefore, is not only to complete the PPIW but also to ensure that the grid can absorb power so that Star Hydro can carry out the pre-commissioning of the Complex.
89. As the obligation in the PPA was on National to complete the PPIW, National bore the burden of showing to the satisfaction of the Sole Arbitrator that the PPIW were completed on 28 April 2017 (its primary case) or on 29 May 2017 (its secondary case).
90. National made largely unsubstantiated assertions through its witnesses that the PPIW were completed on 29 April: “The PPIW was completed on 28 April 2017”⁸⁸ “In fact, the PPIW was completed on 28 April 2017”⁸⁹ “The PPIW was completed on 28 April 2017”⁹⁰ “The PPIW was completed on 28 April 2017... 1. The Claimant completed the PPIW on 28 April 2017...”⁹¹ The Sole Arbitrator was not particularly assisted by this evidence.
91. When questioned by the Sole Arbitrator as to his opinion of what was required for the transmission line to be completed, commissioned and energized, Mr Mahmood was of the view that the transmission line would be complete when it was “physically connected”.⁹² He believed the words ‘commissioned’ and ‘energised’ could be used interchangeably:

“But when it is energised, when the electricity is put into it, I mean it is charged that is commissioned.

And for practical purposes it is complete.

THE CHAIR: Are you saying that “commissioned” and “energised” are identical terms?

⁸⁸ Arif Khan Statement 2, paragraph 10.

⁸⁹ Hussain Statement 2, paragraph 21.

⁹⁰ Nazir Statement 1, paragraph 11.

⁹¹ Taqi Ud Din Statement 1, paragraph 1.

⁹² Tr 4/129:12-25.

A. Yes.

THE CHAIR: They can be used interchangeably, that is your position?

A. Yes."⁹³

Mr Mahmood went on to assert that a line could be energised under an "interim arrangement" and that "as soon as a line is energised it is commissioned".⁹⁴

92. When asked the same question Mr Martens, who gave expert evidence on behalf of Star Hydro, said:

"Energisation really means that the line has voltage. It doesn't mean that power is flowing through it yet, it really means that it has voltage. You can think of it a little bit like an extension cord that you have plugged into the wall on one side, but nothing is connected to it so it is not really driving a load and power isn't flowing through it.

Once that is gone you can do some of the commissioning, where you can do things like check the phases of the voltage and this is to make sure that the sine waves are going in the proper sequence, so that you can confirm that when you do connect the load to it will not have an issue with that.

Then, once that is commissioned you can do intertripping tests as well to confirm that, for example, in the case of the differential relays that 2 they will operate together and trip properly. That is kind of the process of commissioning. You need to do all that before you can connect a load to it....

THE CHAIR *If I can extrapolate from what you are saying to make sure I'm understanding it properly, the sequence of those three terms for would be energising, you would then see a difference -- I don't want to put words in your mouth, so please do stop me if I'm not understanding you correctly. Energising, you would then say commissioning and at that stage, in your view, the transmission line would be complete?*

A. Then it would be ready for you to try to synchronise to it at that point."⁹⁵

⁹³ Tr 4/129: 17-25.

⁹⁴ Tr 4/130: 8-25.

⁹⁵ Tr 4/170-172.

93. As described in Section II(D) above, the required pre-synchronization tests were listed in Section 8.2 of the PPA. Tests (a)-(e) were carried out from 20-26 December 2016⁹⁶ and the remaining two tests were completed on 11 June 2017 (Section 8.2(f) and Section 8.2(g)).⁹⁷ These tests were specified as:

"(f) Voltage phasing checks will be carried out between the sub-station of the Complex and the Grid System.

*(g) All inter-tripping circuits between the Complex and the Power Purchaser's equipment will be proved."*⁹⁸

94. The question of when the PPIW could be considered to have been completed so as to allow the Complex to be connected to the grid really came down to the level of protection installed on the transmission line. Prior to 28 April 2017 differential relays had been installed on both circuits of the transmission line to protect the line but they had proved to be defective. National then considered replacing the differential relays on an *"interim basis with previously detached distance relays"*.⁹⁹ The Sole Arbitrator pauses here to briefly address the distinction between differential and distance relays.
95. Differential and distance relays are both protective relays which trip a circuit breaker if a fault is detected on the line. Distance relays identify the distance to the fault and selectively isolate the line with the fault. According to Mr Martens *"[distance relays] must, therefore, be correctly configured in accordance with the physical properties of the line they aim to protect and account for uncertainties in the system (line length, line spacing, modelling errors, current and voltage transformer inaccuracies, etc.)"*.¹⁰⁰ Differential relays work on a particular area by measuring the current flowing in and out of the area. For present purposes, the relatively short length of the transmission line (6 km) was a key consideration in determining whether differential or distance relays should be used. Per Mr Martens:

"The use of distance relays for primary protection of short transmission lines presents challenges. For example, on short transmission lines, the use of distance relays can lead to either false positives (i.e., tripping without a fault, or with a fault in a different zone)

⁹⁶ Thick Statement 1, paragraph 21.

⁹⁷ C-33, Hussain Statement 1, paragraph 27.

⁹⁸ C-1, PPA, Section 8.2.

⁹⁹ Tr 1/197:8-19, see also E/165.

¹⁰⁰ Martens and Morse Report 1, paragraph 72.

or not tripping sufficiently early in the event of an actual fault, depending on the relay settings. Since the electrical impedance of a short line is small, any variations in the effective impedance (based on the measured voltage and current and due to, for example, power swings) can comprise a significant fraction of the nominal impedance and hence exceed reasonable pre-determined thresholds, leading to trips (without a fault present). Altering the thresholds in the protective relay to account for this runs the risk of precluding the relay from tripping for a certain class of faults".¹⁰¹

96. Mr Mahmood agreed with the statement that "distance relay protection is generally less reliable than differential protection for short transmission lines", opining "Yes, this is correct. However, this does not mean it is unreliable in the sense of safety. In fact, this means it is generally less correct as it can mistakenly detect the out of zone fault as a line fault and trip the line".¹⁰² During the evidentiary hearing the Sole Arbitrator asked Mr Mahmood to clarify the distinction he drew between unreliability and safety. He replied:

"*"Unsafe" means: there is a transmission line, for example, simple thing, breaks and goes to the ground, and it doesn't get a trip, then somebody might get a shock, risk to life. It is feeding off our –*

THE CHAIR: Right.

A. So that is unsafe. "Unreliable" means that it will trip, though the line hasn't actually broken.

THE CHAIR: Yes. So, talking about safety, you are actually talking about risk to people and also risk to damaging the equipment?

*A. Yes".*¹⁰³

97. Turning to relevant events. According to Mr Taqi ud Din, Additional Chief Engineer who gave evidence on behalf of National, "the Claimant completed the PPIW on 28 April 2017 on distance protection relays and informed the Respondent about the completion of PPIW through its letter dated 2 May 2017".¹⁰⁴ This letter stated "it is pleased to inform that the 132KV double circuit T/Line from Patrind Power House to 132 KV Gid Station Rampura for

¹⁰¹ Martens and Morse Report I, paragraph 78.

¹⁰² Joint Report of Mahmood, Martens and Morse, topic 7.

¹⁰³ Tr 4/99: 9-21.

¹⁰⁴ Taqi ud Din Statement I, paragraph 11.

dispersal of power from 147MW Patrind Power House, Muzaffarabad has been energized on 28.04.2017 at 2026 Hrs. The testing results of the T/Line and Line Bays duly signed by all concerned officer [sic] are enclosed herewith for information and further necessary action".¹⁰⁵ Mr Taqi ud Din asserted "the Respondent could have but did not start pre-synchronization tests after the commissioning of PPIW on 28 April [2017]. I believe that [Star Hydro] should have conducted the pre-synchronization tests. I reiterate that there was no risk to the Complex due to the transmission line as the type of the protection relays of transmission line does not adversely affect the conduct of pre-synchronization tests".¹⁰⁶ Mr Mahmood also considered that "the PPIW was completed (energized and able to absorb electrical) on 28 April 2017" and Star Hydro could have proceeded to test the Complex on 28 April 2017, because "on 28 April 2017, the transmission line was energized with distance protection relays".¹⁰⁷ Although Mr Taqi ud Din claimed in his second witness statement that the "PPIW was energized and commissioned on 28 April 2017 on distance protection relays with the POTT Scheme in place"¹⁰⁸ he conceded at the hearing that he had not verified whether the POTT scheme¹⁰⁹ was in place on 28 April 2017.¹¹⁰

98. The Sole Arbitrator found that the evidence did not support National's position that the transmission line was protected with distance relays on 28 April 2017. The contemporaneous correspondence shows that National intended to replace the damaged differential relays and were considering replacing them with distance relays but that they had not yet done so as at 28 April 2017.¹¹¹ Further, a meeting took place on 5 May 2017 to discuss "**unavailability of transmission facility to Patrind HPP due to the damaging of differential relay during testing and commissioning at Rampura grid system**".¹¹² Given this express confirmation that the transmission line was unavailable, together with the Sole Arbitrator's determination that it was more likely than not that the transmission line was not protected by either differential or distance relays on 28 April 2017, this disposes of National's argument that the PPIW were completed on 28 April 2017.

¹⁰⁵ C- 29.

¹⁰⁶ Taqi ud Din Statement 1, paragraph 17.

¹⁰⁷ Mahmood Report 1, paragraph 23.

¹⁰⁸ Taqi ud Din Statement 2, paragraph 10.

¹⁰⁹ which requires distance relays at both ends of the lines, see Taqi Ud Din Statement 1, paragraphs 10-12.

¹¹⁰ Tr 1/213:25, Tr 1/214:1-6.

¹¹¹ C-170, letter from National dated 28 April 2017 "**both line differential relays are being replaced on an interim basis**". (Emphasis added).

¹¹² R-62. (Emphasis added).

99. The meeting on 5 May 2017 identified two options: (i) borrowing a differential relay so that testing could begin on one circuit or (ii) installing distance relays. Both options were problematic. If distance relays were used it was acknowledged that *"the inter-tripping test"* (required by Section 8.2(g) of the PPA) *"cannot be done"* and that this option *"may be reliable but not 100% safe"*, whereas the first option could *"only be exercised to save time because commissioning tests are of 56 days and during this period NTDC can make arrangement of the relays and install at Rampura before the commencement of the RRT test/full load test"*, i.e the testing could start with one circuit protected by differential relays but the testing could not be completed until both circuits were protected.¹¹³ The meeting concluded with National *"to inform...the exact date of delivery and availability of differential relay at site"*.¹¹⁴ A follow up letter from National elaborates on the options and seems to favour disabling the differential feature of the relays and operating the relays as distance relays on an interim basis before protecting the line on differential relays.¹¹⁵ National noted that the *"matter is extremely urgent"*.¹¹⁶ Another meeting took place on 11 May 2017 at which it was agreed that a differential relay would be borrowed and commissioned for one circuit and that differential relays would be commissioned for the second circuit. National would also *"carry out installation and Inter-Facing Siemens relay with the SCADA/DCS and fault recording system....If any extra cost occurs during installation NTDC will manage"*.¹¹⁷
100. On 29 May 2017 *"both of the Transmission Lines were finally protected with differential relays"*¹¹⁸ yet the borrowed differential relay had not yet been interfaced with the SCADA/DCS¹¹⁹ fault recording system and Mr Sadiq, Electrical Manager at Star Hydro, said *"this was an important issue and we were unable to proceed until NTDC had resolved it"*.¹²⁰ On 30 May 2017 Star Hydro wrote to National asking about the interfacing of the

¹¹³ R-62.

¹¹⁴ R-64.

¹¹⁵ R-64.

¹¹⁶ R-64.

¹¹⁷ R-4.

¹¹⁸ Statement of Defence and Counterclaim, paragraph 32, see also C-30.

¹¹⁹ SCADA is the *"Supervisory Control and Data Acquisition System"* Martin Report 1, paragraph 1.5.1. DCS is the *"Distributed Control System"*, Statement of Reply, paragraph 126, footnote 220. Interfacing the relay with the SCADA/DCS was, according to Mr Sadiq, *"fundamental in order for the operators and equipment at the Complex to know when there is a fault on the line so that they can respond appropriately"*, Sadiq Statement 1, paragraph 42.

¹²⁰ Sadiq Statement 1, paragraph 43.

system and stating *"We are looking forward to early completion of such work by NTDC so that the commissioning tests can start"*.¹²¹

101. In closing argument National's Counsel took the position that *"there were two perfectly good sets of differential relays available on two lines on 29 May and a pretext was made, was manufactured, I would submit, by Star Hydro, for not commencing testing, by pointing to the SCADA and DCS interface"*.¹²² The Sole Arbitrator did not find that the contemporaneous correspondence supported a conclusion that Star Hydro had been deliberately delaying progress on the project with regard to the two outstanding tests. On 2 June 2017 Mr Sadiq reiterated to National *"please assure us that all necessary arrangements regarding interfacing of Siemens relay with our DCS system should be done by NTDC before the start of pre-commissioning tests"*.¹²³ Mr Sadiq followed up on 3 June 2017 and, indeed, it appeared to the Sole Arbitrator that all parties were diligently working together to resolve the issue during this time period.

102. The relay was successfully interfaced with the SCADA/DCS system on 7 June 2017 and tests on the relays then took place between 7-9 June 2017. The Voltage Phasing and All Inter Tripping Circuit test documentation was signed by the Engineer on 10 June 2017, which signalled the successful completion of the Section 8.2(f) and (g) tests and the Certificate of Readiness for Synchronisation was issued on 11 June 2017.¹²⁴ Mr Junaid Khan, who gave evidence for Star Hydro, conceded that tests *"leading up to commissioning"* were possible *"to some extent"* on one circuit and that Star Hydro had itself proposed this in early May,¹²⁵ however the Sole Arbitrator takes the view that limited testing which might have been possible in May would not be sufficient to satisfy National's obligation under the PPA to complete, commission and energize the PPIW so as to *"be able to absorb into the Grid System electrical power generated by the Complex as is necessary to enable the Company to carry out the pre-commissioning of the Complex and the Commissioning Tests"*.¹²⁶ The Sole Arbitrator concluded, on the evidence before her, that National had not shown that Star Hydro was in a position to carry out the pre-commissioning

¹²¹ R-66, letter from Star Hydro to National *"the interfacing of Siemens Differential Relay (7SD522) with SCADA/DCS and fault recording system installed at Patrind Power House will be done by NTDC. Please assure us when your representative from Siemens will be available for interfacing of said relay with our SCADA System"*.

¹²² Tr 5/51:20-24. Claimant's Counsel, oral closing submissions.

¹²³ R-67.

¹²⁴ R-70, C-33.

¹²⁵ Tr 3/17-18, see also C-90.

¹²⁶ C-1, PPA, Section 6.5(a).

of the Complex on 29 May 2017, principally because the relays had not been interfaced with the SCADA/DCS system. Its case that the PPIW were complete as at that date therefore fails.

103. The Sole Arbitrator therefore concluded that the PPIW were completed, commissioned and energized on 10 June 2017. At this date the transmission line was protected with differential relays, the configuration and testing of the relays were complete, the grid could absorb power from the Complex and the pre-synchronization tests had been carried out.

(b) Did the delay in completing the PPIW cause a delay to the Commissioning of the Complex?

104. Taking as a starting point the required completion date of 29 October 2016, the delay period equates to 224 days (as the Sole Arbitrator has determined the PPIW were completed in accordance with the PPA on 10 June 2017). This period of time is agreed by the parties.¹²⁷ By operation of the PPA the RCOD would therefore be extended by 224 days and the new RCOD became 30 October 2017, as long as the delay to the PPIW caused a delay in the Commissioning of the Complex.

105. In order to determine whether this requirement was satisfied, the Sole Arbitrator must determine the contested issue of the certification provided by the Engineer.

106. The principal obligations for certifying delay appear in the latter part of Section 6.5(b). The issue is, however, addressed here as the Sole Arbitrator considers that the parties must have intended the certification to be required in relation to the third limb of the first sentence of Section 6.5(b) as well as in relation to the latter part of Section 6.5(b) which addresses any delay payments.

107. It is something of an understatement to say that the PPA was not a model of clarity in relation to the requirement for delays to the commissioning of the Complex to be certified. The certification of delay is separate from the formal (named) certificates required in Section 8. These were: (i) a "*Certificate of Readiness for Synchronization*", defined in the PPA as "*the certificate to be issued by the Engineer to the Company and the Power Purchaser under Section 8.2 stating, in relation to the Complex, that the Complex has, in the professional opinion of the Engineer, passed the necessary no load, full speed tests and that the Complex*

¹²⁷ D/17 Joint Expert Report of Mahmood, Martens and Morse.

is in a condition that is ready for and capable of synchronization with the Grid System." and a "Certificate of Readiness", defined in the PPA as *"the certificate to be issued by the Engineer to the Company and the Power Purchaser under Section 8.1 stating, in relation to the Complex, that the Complex is, in the professional opinion of the Engineer, ready for the Commissioning Tests to be carried out and that the Complex is in a condition that it will successfully complete the Commissioning Tests"*.

108. As noted, there is no formal definition of or requirements for the certification of delay issued by the Engineer. The reference to delay for present purposes appears in the third limb of the first sentence of Section 6.5(b) and in the subsequent text of Section 6.5(b), which refers to the *"extension of the Required Commercial Operations Date"* being *"subject to issuance by the Engineer of the Certificate of Readiness for Synchronization and a simultaneous certificate that the delay or deferral caused by the Power Purchaser would likely cause the then scheduled Commissioning Tests to be delayed or deferred"*.¹²⁸

109. For present purposes and to avoid confusion, the Sole Arbitrator identifies the relevant certificates at play in this arbitration as (i) the Certificate of Readiness for Synchronization; (ii) the Certificate of Delay; and (iii) the Certificate of Readiness for Commissioning.

110. The PPA requires that the "Engineer" certifies the delay. Belatedly, National raised an argument that the use of a so-called 'sub-consultant' by the firm appointed to act as the Engineer on the project rendered the certification of testing witnessed by that sub-consultant invalid. It is to this argument that the Sole Arbitrator now turns.

(1) The Engineer's use of sub-consultants

111. The PPA set out the parties' obligations regarding the appointment of the Engineer. Section 6.2 provides:

"(a) Not later than two hundred and seventy (270) Days prior to the then-prevailing Scheduled Commercial Operations Date, the Engineer shall have been appointed by the Company, with the approval of the Power Purchaser, (and shall by such date be available to perform the duties of the Engineer provided herein and shall thereafter keep appointed and available for as long as may be necessary to discharge the duties of the Engineer under this Agreement) to carry out the duties of the Engineer specified in this

¹²⁸ Emphasis added.

*Agreement in accordance with the highest professional standards and duty of care, both to the Company and to the Power Purchaser. The Company shall not replace any Person appointed as the Engineer without the prior written consent of the Power Purchaser.*¹²⁹

*(b) The terms and conditions of appointment of the Engineer shall oblige the Engineer to act independently and impartially, on the basis of his expertise, experience and knowledge in relation to all matters referred to him pursuant to this Agreement and in carrying out his other duties ascribed to him under this Agreement. The costs and remuneration to which the Engineer is entitled under his terms and conditions of appointment shall be borne by the Company".*¹³⁰

112. The PPA defined "Engineer" as a "firm of engineering consultants to be appointed and hired by the Company with the approval of the Power Purchaser in accordance with Section 2.6 for the purpose of observing the construction of the Complex and the Commissioning Tests and certifying to the Power Purchaser and the Company the results of the Commissioning Tests and the other matters specified herein".¹³¹ National endorsed the selection of Multiconsult UK Ltd ("Multiconsult") as the Engineer for the project on 2 August 2016.¹³² Star Hydro subsequently retained Multiconsult through an agreement dated 2 September 2016 (the "Engineer Agreement").¹³³ In that agreement, Multiconsult agreed to "deploy experienced staff, well versed with the technical standards, practices and the requirements of the Services for carrying out the Services at Project site" and was required to submit a "staffing plan" to Star Hydro. Multiconsult had previously submitted a proposal which included "CVs of Key Project Staff" listed as Mr Andrew Thick, Mr Philip Burlow, Mr Christopher Grant and Mr Yasir Malik.¹³⁴ These individuals were also identified in the section on staffing costs in the Engineer Agreement.¹³⁵ The Engineer Agreement also provided "Once the staffing for this Project is agreed between the Company and the

¹²⁹ Emphasis added.

¹³⁰ Emphasis added.

¹³¹ C-1, PPA, Definitions.

¹³² R-149, letter from CPPA-G to Star Hydro. As noted in this Final Award, no distinction was drawn by the parties between CPPA-G and National, save where expressly indicated.

¹³³ C-174.

¹³⁴ R-21.

¹³⁵ C-174.

*Engineer, the Engineer should not change its staff working on this Project without the prior written consent of the Company/CPPA or NTDC".*¹³⁶

113. National took issue with the fact that Multiconsult had used what it termed a 'sub-consultant' to witness various tests during the project. Mr Thick, who was primarily involved in the project on behalf of Multiconsult, stated in his first witness statement that Multiconsult "*engaged a local engineer in Pakistan, Mr Mohammed Yasin Bhatti, as a sub-contractor*".¹³⁷ Mr Thick explained the process adopted by Multiconsult as follows. "*In December 2016, SHPL carried out 8 of the 10 pre-synchronisation tests set out in Section 8.2 of the PPA. I received a copy of the schedule for these tests on 20 December 2016 from Mr Junaid Khan at SHPL. I was not in Pakistan at the time, but we arranged for Mr Bhatti to witness these tests on behalf of MC. Mr Bhatti provided me with updates during the tests and I prepared a form of certificate for Mr Bhatti to sign when the tests were complete*".¹³⁸

114. National relies on Section 8.2 of the PPA which states (in relevant part): "*Prior to synchronization of the Complex with the Grid System, the Engineer shall deliver to the Company and the Power Purchaser the Certificate of Readiness for Synchronization. Prior to the delivery of the Certificate of Readiness for Synchronization and the first synchronization of the Complex, the Company shall carry out, or shall cause the Contractors to carry out, in the presence of the Engineer, the following tests...*".¹³⁹ National asserts that "*Due to the Engineer's absence, the pre-synchronization tests concluding on 26 December 2016 were not conducted in accordance with Section 8.2. These tests were neither witnessed by and nor conducted in the presence of the Engineer. Due to this failure, the Certificate of Readiness for Synchronization issued on 9 February 2017 and the Certificate of Readiness for Synchronization issued on 11 June 2017 were both issued in breach of Section 8.2 and, as a result, were a nullity for the purposes of the PPA*".¹⁴⁰ Essentially, National asks the Sole Arbitrator to find that Multiconsult improperly delegated its obligation to attend the tests to Mr Bhatti, who was, in National's words, a "*complete alien under the PPA*"¹⁴¹ and to find the Certificate of Readiness for Synchronization invalid as a result. National then

¹³⁶ C-174.

¹³⁷ Thick Statement 1, paragraph 13.

¹³⁸ Thick Statement 1, paragraphs 20-21.

¹³⁹ Emphasis added.

¹⁴⁰ National's Post Hearing Brief, paragraph 37.

¹⁴¹ National's Post Hearing Brief, paragraph 25.

argues that a finding that the Certificate of Readiness for Synchronization is invalid means that "*the Respondent is not entitled to any relief whatsoever under Section 6.5(b)*".¹⁴²

115. The Sole Arbitrator addresses the issue of Mr Bhatti witnessing the tests here and addresses the general validity of the relevant certificates below.

116. National's argument that Mr Bhatti's involvement vitiated the tests and rendered the relevant certificates invalid fails. First, Mr Bhatti's involvement was clear from the face of the documents provided to National in February 2017,¹⁴³ yet this issue was only belatedly raised during the course of this arbitration. Second, the Sole Arbitrator is satisfied on the evidence before her and the application of the relevant legal principles that the involvement of Mr Bhatti was not improper.

117. The Sole Arbitrator was not persuaded that the core function of the Engineer was only to be present and witness the tests, nor does the evidence support a conclusion that Multiconsult abdicated its function to Mr Bhatti. The evidence shows that (i) Mr Bhatti was "*working under*" Multiconsult's "*direction and management*",¹⁴⁴ (ii) although Mr Bhatti witnessed the tests, Mr Thick and Mr Burlow spent a significant amount of time satisfying themselves "*that the test results were acceptable and the tests had been completed successfully*",¹⁴⁵ and (iii) Mr Bhatti was not involved in the issuance of the relevant certificates.¹⁴⁶ The Engineer's role was defined in the PPA as to observe "*the construction of the Complex and the Commissioning Tests and [certify] to the Power Purchaser and the Company the results of the Commissioning Tests*".¹⁴⁷ In the Sole Arbitrator's view, Multiconsult did not abdicate its responsibilities under the PPA to Mr Bhatti.¹⁴⁸ Although National sought to distinguish the various authorities relied on by the parties in their arguments on their facts, referring, in particular, to *Clemence v Clarke*¹⁴⁹ and *Anglian Water Authority v RDL Contracting Ltd*,¹⁵⁰ the Sole Arbitrator found them instructive. *Clemence v Clarke* supported the argument that the whole function must be wrongfully abdicated to another person (and not just parts of a

¹⁴² National's Post Hearing Brief, paragraph 34.

¹⁴³ C-119.

¹⁴⁴ Tr 3/57:4-5.

¹⁴⁵ Tr 3/57:23-25.

¹⁴⁶ C-119.

¹⁴⁷ C-1, PPA, Definitions.

¹⁴⁸ See also RA-10, Keating on Construction Contracts, which refers to architects but is analogous to the present case: "*In giving a certificate, the architect is entitled to make use of the assistance of others, such as, for example, a quantity surveyor, for detailed matters of measurement and valuation, but the certificate must be the architect's*".

¹⁴⁹ H/27/381.

¹⁵⁰ H/30/407.

role). For the reasons set out above, the Sole Arbitrator found that was not the case: Multiconsult had not delegated its whole role to Mr Bhatti.¹⁵¹ *Anglian Water Authority v RDL Contracting Ltd* supports an argument that “*compelling evidence*”¹⁵² is required to establish that the relevant certificates were not Multiconsult’s opinion (and that that opinion had been improperly delegated to Mr Bhatti). Given Mr Bhatti’s involvement was limited to witnessing the tests and that he was not involved in issuing the relevant certificates,¹⁵³ the Sole Arbitrator finds that National has not met its burden to provide compelling evidence that the certificates did not reflect Multiconsult’s opinion.

118. National also argued that the certificates issued by the Engineer were invalid because they had been backdated and re-issued unlawfully and the Sole Arbitrator addresses this argument next.

(2) Are the certificates valid?

119. The facts underpinning the issue of the relevant certificates are relatively undisputed. On 25 December 2016 Mr Thick wrote to Mr Bhatti “*regarding certification of the pre-synchronisation testing you are currently witnessing*” and suggesting “*since we are potentially utilising two engineers to witness testing...we believe it would be prudent to introduce an “Interim Certificate” which will confirm tests witnessed now by yourself*”.¹⁵⁴ Three draft “*Interim Certificates*” were attached to the email, one for each of the three units. The draft Interim Certificates listed the Section 8.2 (a)–(f) tests. Mr Bhatti’s name appeared under the sign off “*For Multiconsult UK Limited*”. These draft Interim Certificates were finalized, the completion of the Section 8.2 (a)–(e) tests (the Section 8.2(f) test was removed) was shown, and Mr Bhatti signed the Interim Certificates on 27 December 2016.¹⁵⁵

120. On 2 January 2017 Star Hydro notified National “*the construction of the Project is complete and we have successfully done the pre-commissioning tests in the presence of the independent engineer*”. Star Hydro warned National that “*construction activity by the NTDC Contractor is extremely slow...With such slow rate of work, the NTDC contractor*

¹⁵¹ Referring, in particular, to Mr Thick’s evidence as to the care he and Mr Burlow took prior to issuing the relevant certificates. Tr 3/57.

¹⁵² H/30/416.

¹⁵³ He did sign the “*Interim Certificates*” on behalf of Multiconsult, but, as noted, the other certificates were signed by Mr Thick on behalf of Multiconsult.

¹⁵⁴ R-102.

¹⁵⁵ R-14.

*might take another one to two months to complete the transmission line and works at the Muzaffarabad-II Grid Station. This means that synchronization and commissioning tests will not start before March 2017. And that would lead to delay in the commissioning of the Project and the start of the commercial operations".*¹⁵⁶

121. On 25 January 2017 Mr Thick provided Star Hydro representatives with a "*Certificate of Readiness for Synchronization*" which essentially compiled the three Interim Certificates into one document, showing that Mr Bhatti had witnessed the Section 8.2 (a)-(e) tests for each unit and noting that the Section 8.2(f) and (g) tests would be conducted "*once the transmission line and connection to the Grid is available*". The certificate was signed by Mr Thick "*For Multiconsult UK Limited*".¹⁵⁷

122. On 27 January 2017 Mr Thick wrote to Mr Iqbal at National regarding the commissioning schedule required "*to assure the scheme is commissioned in accordance with Prudent Utility Practice*" and seeking a discussion with National to try to defer or modify certain tests in order to reduce the time required for commissioning.¹⁵⁸ On 30 January 2017 Star Hydro provided National with "*copies of test results carried out in accordance with Section 8.2...of the PPA for your information*" and confirmed "*these tests were done in the presence of the Engineer (Multiconsult) and the Engineer has verified the results*".¹⁵⁹

123. Mr Thick identified a lack of clarity in the PPA regarding the need for the delay to be certified. In his email to Star Hydro representatives on 2 February 2017 he stated: "*we have reviewed the Power Purchase Agreement with respect to delay in commissioning tests as referenced in Section 8.1 (b). We have struggled to understand why the clause requires the issue of a "Certificate of Readiness" along with a certificate confirm [sic] the delay in commission tests and would have thought this should be the "Certificate of Readiness for Synchronisation" as the Readiness [sic] to be issued as required by Section 8.1 (b) of the PPA*".¹⁶⁰ Mr Thick attached a "*Certificate of Delay in Commissioning Tests of the Complex*" (dated 2 February 2017), certifying that "*[t]he Complex has attained "Readiness for Synchronization as attested in certificate no. 16PA02/100/04 dated 25 January 2017"*" and confirming that the Commissioning Tests were delayed "*due to the non-completion of*

¹⁵⁶ R-124.

¹⁵⁷ C-32, C-109.

¹⁵⁸ C-120.

¹⁵⁹ R-45.

¹⁶⁰ C-113.

the Power Purchaser's Interconnection Works".¹⁶¹ He also attached a "Certificate of Readiness of the Complex" in which he noted that "'Readiness' in accordance with Section 8.1(b) of the PPA is granted in lieu of 'Readiness' as defined by Section 8.3(a) of the PPA" (reflecting the confusion he had identified in his email and, presumably, seeking to clarify the position).

124. On 2 February 2017 Star Hydro wrote to National enclosing "testing and commissioning schedules" together with, amongst others, the Certificate of Readiness for Synchronization dated 25 January 2017.¹⁶² On 6 February 2017 Star Hydro wrote to Mr Thick noting that the Complex was ready for synchronization on 26 December 2016 (and relying on the interim Certificates of Readiness for Synchronization in this regard) and asked Mr Thick to "issue an amendment/clarification that the date of the issuance of the Certificate of Readiness for Synchronization for the Project should be read as 27 December 2016".¹⁶³ Mr Thick then issued a revised version of the certificate dated 25 January 2017 with a date of 27 December 2016, and adding the words "ready for synchronisation from 27th December 2017".¹⁶⁴ In his cover letter enclosing the revised certificate Mr Thick stated "[p]lease note that the date of issue of the certificate was not intended as the date the Patrind Complex was first ready for synchronization, however, we acknowledge the certificate issued could be more clearly stated".¹⁶⁵ Mr Thick made a further effort to clarify the position under the PPA in his email to Star Hydro on 7 February 2017, stating "The PPA has confused the Certificate of Readiness and Certificate of Readiness for Synchronisation between clauses 6.5(b) and 8.1(b). The two clauses should refer to Certificate of Readiness for Synchronisation as Certificate of Readiness cannot be given before synchronisation has been achieved".¹⁶⁶ Mr Thick enclosed a 'Certificate of Delay In Commissioning Tests of the Complex' dated 27 December 2016.¹⁶⁷ Star Hydro responded that there was a "dilemma" under the PPA (as noted, the PPA is not clear in this regard), and they requested that Mr Thick issue a Certificate of Readiness as well (as he had proposed in his email of 2 February 2017).¹⁶⁸ Mr Thick sent the draft Certificate of Readiness to Star Hydro on 7 February 2017 and, once he

¹⁶¹ C-111.

¹⁶² C-169.

¹⁶³ C-114. The Sole Arbitrator notes that this letter was copied to CPPA-G (the Sole Arbitrator does distinguish between CPPA-G and National at this juncture and notes that Mr Hussain's evidence was that National had not received a copy of this or other correspondence addressed to CPPA-G).

¹⁶⁴ C-31, compare with C-32.

¹⁶⁵ C-115.

¹⁶⁶ C-116.

¹⁶⁷ C-116.

¹⁶⁸ C-117.

received Star Hydro's confirmation that he should proceed, he sent the certificates with a cover letter to National on 9 February 2017.¹⁶⁹

125. In light of the position taken by National in this arbitration, it is worth reviewing the cover letter sent by Mr Thick to National. Mr Thick took pains to explain the relevant provisions of the PPA, set out the confusion that arose as a result of the reference to "*Certificate of Readiness*" (rather than "*Certificate of Readiness for Synchronization*") in Section 8.1(b) and enclosed the three certificates (of delay, of readiness for synchronization and of readiness), all dated 27 December 2016. For completeness, the Sole Arbitrator notes that a further "*Certificate of Readiness for Synchronization*" was issued on 11 June 2017 which showed the completion of the Section 8.2 (f) and (g) tests.¹⁷⁰

126. National asserts that it had no knowledge of the facts surrounding the backdating of the certificates until June 2021.¹⁷¹ At the evidentiary hearing, Mr Hussain, Chief Engineer for National, denied that National knew about the 6 February 2017 correspondence from Star Hydro to Mr Thick asking him to amend the dates of the certificates (which was copied to CPPA-G).¹⁷² National argues that Star Hydro "*deliberately misled*" it into "*believing that the Certificate of Readiness for Synchronization and the Certificate of Delay were issued on 27 December 2016 rather than 9 February 2017*".¹⁷³

127. The Sole Arbitrator finds no evidence of an attempt by Star Hydro to deliberately mislead National, particularly in light of the fact that the 6 February 2017 correspondence, which was copied to CPPA-G, requested the Engineer to "*issue an amendment/clarification*" to the date of the certificate.¹⁷⁴ Additionally, following the commencement of commercial operations Multiconsult prepared a "*draft PPA commissioning report*" which was sent to CPPA-G. It clearly articulated Multiconsult's view of the delays to the project and expressly referenced the backdating of the certificates:

"In January 2017 it became clear that completion of the interconnection facilities was some way off and under the terms of the PPA it was necessary for the Engineer to issue a certificate to this effect to enable the Company to claim compensation for the delay.

¹⁶⁹ C-118, C-119.

¹⁷⁰ C-33.

¹⁷¹ National's Pre-Hearing Brief, paragraph 77.

¹⁷² Tr 1/181-183.

¹⁷³ National's Pre-Hearing Brief, paragraph 79.

¹⁷⁴ C-114.

Certification of delay is covered in two clauses, 6.5(b) [Completion of the Interconnection Facilities] and 8.1(b) [Delay to Commissioning Tests]. While 8.1(b) covers Commissioning Tests, which are tests after synchronisation, the clause also refers to failure to complete the Transmission Line, which impacts upon the two tests bulleted above. This caused some confusion since failure to complete the Interconnection Facilities should not be a cause of delay for the Commissioning Tests as the Interconnection Facilities should have already been completed to enable tests prior to synchronisation to be completed. For Patrind a certificate for readiness for synchronisation (No.4) was issued with tests 8.2 (f) & (g) excluded and subsequently, certificate of delay issued in January 2017, but backdated to 27th December 2016 to reflect when the clock for delay starts".¹⁷⁵

128. In consideration of the further argument asserted by National that, if there was not a deliberate attempt to mislead, the backdated certificates had the potential to mislead, it is useful to step back and look at the rationale for the certificates in the first place. The Certificate of Readiness for Synchronization captures and crystallizes the completion of specified tests at a particular time. The tests were completed on 26 December 2016 (for the Section 8.2 (a) – (e) tests) and 11 June 2017 (for the Section 8.2 (f) and (g) tests).¹⁷⁶ There is no suggestion the dates on which the tests were completed is in doubt. The certificates therefore simply crystallize the information obtained through the testing and confirm that, in the opinion of the Engineer, the Complex is ready for the next stage. In his evidence, Mr Junaid Khan, Senior Manager Mechanical at Star Hydro, accepted that he “urged the engineer to backdate the certificates” but said that he did so just “to issue on the same date on which the tests were conducted actually”.¹⁷⁷ He explained that Star Hydro wanted to “line up our records for the claim”.¹⁷⁸ In light of the confusion over the certificates required by the PPA identified by Mr Thick, the Sole Arbitrator is of the view that Star Hydro acted

¹⁷⁵ R-103, page 23.

¹⁷⁶ National did allege in correspondence dated 4 March 2022 that the Certificate of Readiness for Synchronization issued on 9 February 2017 was invalid because the Section 8.2 (f) and (g) tests were not completed, but this allegation was not pursued and is mentioned only for completeness. During oral closing submissions, National’s Counsel accepted that the Section 8.2 (f) and (g) tests could not be completed without a transmission line. Tr 5/24:6-8.

¹⁷⁷ Tr 3/30:5-7.

¹⁷⁸ Tr 3/30:17.

appropriately. In fact, nothing in this arbitration turns on the question of the date of the issue of the certificates¹⁷⁹ and the PPA does not require the certificates to be dated at all.

129. The certificates do, however, have to be issued simultaneously. Looking at the letter that was sent to CPPA-G on 9 February 2017 by Mr Thick the Sole Arbitrator finds that the letter is a genuine attempt to comply with the PPA. In the certificates enclosed with the letter Mr Thick confirmed that "*the scheduled Commissioning Tests will likely be delayed due to the non-completion of the Power Purchaser Interconnection Works*", that "[t]he Complex has attained *'Readiness for Synchronisation'* as attested in certificate no. 16PA02/100/04 dated 27th December 2016 issued by the Engineer" and that "*[t]he Power Purchaser's Interconnection Facilities are not complete as of the date of this certificate*".¹⁸⁰ The Sole Arbitrator finds that the requirement to issue the certificates simultaneously is satisfied.

130. During the evidentiary hearing, National argued that it was an "*absurdity*" that Mr Thick certified that the commissioning tests would be delayed because prior to 2 February 2017 the tests were not scheduled. The Sole Arbitrator was not persuaded by this argument. Although the PPA does refer to the requirement that the "*then scheduled*" commissioning tests be delayed, the Sole Arbitrator was not persuaded that if the tests were not formally scheduled, the Engineer could not validly certify there would be a knock-on delay to commissioning (which is what the Sole Arbitrator considered the parties intended in the PPA). In any event, the Sole Arbitrator did not need to reach this issue as she found the evidence supported a conclusion that the commissioning schedule was certainly "*under discussion*"¹⁸¹ from December 2016 and Star Hydro had submitted a commissioning schedule to National during the relevant period.¹⁸² In light of this, the Sole Arbitrator determined that the commissioning tests had been scheduled and the Engineer had validly certified that they would be delayed as a result of the delay to the completion of the PPIW.

131. As the Sole Arbitrator determined that the certificates complied with the PPA, National's argument that in the absence of a valid set of certificates the RCOD cannot be extended fails.

¹⁷⁹ For completeness, the Sole Arbitrator observes that the claim to the Principal Debt Invoice does tie a period of time to the date of issuance of the certificate of delay, see Section 6.5(b) of the PPA, however this period is triggered regardless of whether the date of 27 December 2016 or 9 February 2017 is used, see Section IVC(2) of this Final Award.

¹⁸⁰ C-119.

¹⁸¹ According to Mr Thick's evidence at the evidentiary hearing, Tr 3/75:23-24.

¹⁸² C-169, letter from Star Hydro to National and CPPA-G, enclosing a testing and commissioning schedule and referring to having submitted the schedules with earlier letters dated 7 June 2016, 22 July 2016 and 20 December 2016.

(c) The period of time by which the RCOD should be extended

132. If the four limbs of the first sentence of Section 6.5(b) are satisfied, then the RCOD must be extended. The Sole Arbitrator now turns to the issue as to when the period of time for the extension of the RCOD should be calculated from.
133. Star Hydro argues that the RCOD should be extended for 224 days, namely to 30 October 2017. This is on the basis that the parties agree that the date required by the PPA for the PPIW to be completed is 29 October 2016 and the Sole Arbitrator has determined that the PPIW were not completed until 10 June 2017. The 224 day period is then added to 20 March 2017 to establish a new, extended RCOD of 30 October 2017.
134. National asserts an *"alternative position"* that *"the RCOD could only be extended for the period from 9 February 2017 to the date of the completion of the PPIW"*,¹⁸³ which would mean that the RCOD was extended for 121 days from 9 February 2017 to 19 July 2017. National argues that *"Both extension of time and the Claimant's liability to make any payment is subject to (i.e., conditional on) simultaneous issuance of the (valid) Certificate of Readiness for Synchronization and the (valid) Certificate of Delay"*.¹⁸⁴ National submits that the start date for calculation of the period is the date on which all pre-conditions set out in Section 6.5(b) were satisfied and it argues that these pre-conditions were that: (i) the PPIW had not been completed by the date required in Section 6.5, (ii) the delay in completion of the PPIW caused a delay in the Commissioning of the Complex, and (iii) the Engineer has simultaneously issued the Certificate of Readiness for Synchronization and the Certificate of Delay.¹⁸⁵ It therefore argues that the period begins on 9 February 2017 and asserts that this date has *"great consequence"*.¹⁸⁶ It also argues that the reference to *"subject to"* in Section 6.5(b) is a condition precedent to any obligation to make payment to Star Hydro under this clause and therefore, the obligation to make payment cannot arise before the relevant certificates were issued.
135. The parties appeared to agree that Section 6.5(b) contained a condition precedent, and the Sole Arbitrator is also of this view. If the certificates were not validly issued, then the RCOD would not be extended and the obligation on National to make the delay payments

¹⁸³ National's Pre-Hearing Brief, paragraph 14.

¹⁸⁴ National's Pre-Hearing Brief, paragraph 27.

¹⁸⁵ National's Pre-Hearing Brief, paragraph 29 *et seq.*

¹⁸⁶ Tr 5/27:25.

would not arise. Here the Sole Arbitrator is not determining the obligation to make payments (this is addressed in Section IV(C) below), the Sole Arbitrator is seeking to calculate the period of time by which the RCOD is to be extended.

136. The Sole Arbitrator has found that the certificates were validly issued, therefore the RCOD should be extended. In terms of the period of time in question, the Sole Arbitrator finds that Section 6.5(b) is clear on this point: the RCOD is to be extended day-for-day for the period from when the PPIW should have been completed (29 October 2016) to when the PPIW were completed (10 June 2017). This means that the new, extended RCOD date is deemed to be 30 October 2017.¹⁸⁷

137. That is the end of the enquiry as far as National's claim to liquidated damages goes, but it is not the end of the enquiry as far as the arbitration goes. The Sole Arbitrator now addresses Star Hydro's claims for delay payments under Section 6.5(b) of the PPA and its claim for payment of the Principal Debt Invoice.

C. Star Hydro's claim to the Delay Payments and Principal Debt Invoice

138. The parties' claims overlapped significantly. The detailed analysis set out above applies equally (where relevant) to Star Hydro's claim to the Delay Payments and the Principal Debt Invoice.

1. The right to payments for delay under Section 6.5(b)

139. As an adjunct to the four limbs of the first sentence of Section 6.5(b), the parties agreed that:

"In addition, if the Power Purchaser has not completed the Power Purchaser Interconnection Works by the date which is fifteen (15) Days following such date, and such delay causes a delay in Commissioning of the Complex, as certified by the Engineer under Section 8.3, then the Power Purchaser shall pay to the Company Monthly, in arrears, (and prorated for any portion of a Month) an amount equal to (i) the Carrying Costs plus, fifty percent (50%) of the "Insurance Component", and fifty percent (50%) of the "Fixed O&M Component" of the Capacity Price computed on the basis of the Contract Capacity." (For ease of reference these payments are referred to as the "Delay Payments" or "Delay Invoices" in this Final Award).

¹⁸⁷ The period between 30 October 2017 and the date on which COD was actually achieved (8 November 2017) is addressed in Section IV(D) of this Final Award.

140. To show its entitlement to payments under this provision, first, Star Hydro must show that the PPIW were not completed by 15 days after 29 October 2016. This is common ground between the parties. Second, Star Hydro must show that the delay *"causes a delay in Commissioning of the Complex as certified by the Engineer under Section 8.3"*. Payments under this provision were also subject to the issuance of the certificates discussed in Section IV(B) of this Final Award: *"... the payment of such amounts by the Power Purchaser and the extension of the Required Commercial Operations Date shall be subject to issuance by the Engineer of the Certificate of Readiness for Synchronization and a simultaneous certification by the Engineer that the delay caused by the Power Purchaser would likely cause the then scheduled Commissioning Tests to be delayed"*. As set out in Section IV(B) above this condition precedent was satisfied.

141. The Delay Payments were agreed to *"commence on the Scheduled Commercial Operations Date prevailing immediately prior to such delay and shall continue until the earlier of (i) the end of a period equal to the period of delay in completing the Power Purchaser Interconnection Works and (ii) the completion of the first attempted Commissioning Tests (whether successfully completed or not)"*.

142. The Sole Arbitrator addressed National's argument in relation to the period of time by which the RCOD was extended in Section IV(B) above. For completeness, the Sole Arbitrator notes that National makes the same argument in relation to when the liability for making payments begins. In this regard the latter part of Section 6.5(b) is also clear, payments commence on the SCOD, which was 26 February 2017 and continue until 8 October 2017 (being the date 224 days after the SCOD).

143. Subject to the restrictions on the obligation to make the Delay Payments discussed in Section IV(C)(3) below, the Sole Arbitrator finds that the condition precedent for the Delay Payments is satisfied, and the payments were to commence on 26 February 2017 and continue until 8 October 2017.

2. The right to payment of the Principal Debt Invoice under Section 6.5(b)

144. Star Hydro seeks payment of the Principal Debt Invoice from National under Section 6.5(b) of the PPA. This provides (in relevant part) that:

"In addition to the payment of the aforesaid amounts, if the delay by the Power Purchaser in completing the Power Purchaser Interconnection Facilities continues beyond the sixtieth (60th) Day following the date of the issuance by the Engineer of the Certificate of Readiness for Synchronization and a simultaneous certification by the Engineer that the delay caused by the Power Purchaser would likely cause the then scheduled Commissioning Tests to be delayed, the Power Purchaser shall also be required to pay the principal debt payments when due under the Financing Documents; provided that such principal debt paid by the Power Purchaser under this Section 6.5 shall be excluded in any determination or calculation of the Tariff at the Commercial Operation Date to be paid by the Power Purchaser hereunder. Such principal debt payment shall be due from the Power Purchaser within thirty (30) Days following receipt of an invoice therefor (but in no event earlier than the sixtieth (60th) day following the Scheduled Commercial Operations Date prevailing immediately prior to such delay), which invoice shall be signed by the Lenders or the Agent certifying the amount shown therein to be correct and stating the due date for such payment of principal debt under the Financing Documents. Such payments shall continue until the earlier of (i) the end of a period equal to the period of delay or deferral of any Commissioning Test or Commissioning Tests and (ii) the completion of the first attempted Commissioning Tests (whether successfully completed or not)..."

145. On 30 June 2017 Star Hydro issued an invoice for the principal debt amount it was required to pay to its lenders as its first instalment repaying a number of loans (identified as the "Principal Debt Invoice").¹⁸⁸ The Principal Debt Invoice amounted to USD 9,507,197.18 and was addressed to the Chief Executive Officer, CPPA-G. It contained three annexures. Annexure A calculated the total amount due, Annexure B was a letter from Habib Bank notifying Star Hydro of its obligation to make the first repayment which enclosed invoices received from the four lenders, Korea Eximbank (invoice dated 13 June 2017), Islamic Development Bank (invoice dated 11 June 2017), International Finance Corporation (invoice dated 1 May 2017) and Asian Development Bank (invoice dated 31 May 2017) seeking the so-called "First Repayment" of their loans and Annexure C contained the invoices from the four lenders. Habib Bank was the lender's agent (the "Agent").¹⁸⁹ National contested the

¹⁸⁸ C-77.

¹⁸⁹ Jawad Ahmad Statement, paragraph 15.

Principal Debt Invoice on 18 January 2018 in a letter entitled "*Invoice Dispute Notice*".¹⁹⁰ The Invoice Dispute Notice contested the Principal Debt Invoice (amongst others) on the grounds that National was not responsible for the delay in commissioning the Complex. National did not raise any concern at that time as to the formalities of the Principal Debt Invoice.

146. National asserts that Section 6.5(b) "*allows the Respondent to recover the amount of principal debt payment either from the Claimant (and seek exclusion of such amount from determination or calculation of the Tariff...) or, conversely, seek recovery of this amount as part of the determination or calculation of the Tariff (by not seeking exclusion of such amount from determination or calculation of the Tariff...*"¹⁹¹ National says Star Hydro has already recovered "*an amount in excess of the amount stated in the Principal Debt Invoice*"¹⁹² and relies on a bar on double recovery to shield it from any obligations in respect of the Principal Debt Invoice. National is also now asserting that the Principal Debt Invoice did not conform to the formalities set out in the PPA.

147. The starting point for an analysis of National's obligations in relation to the Principal Debt Invoice is, of course, the PPA. The Sole Arbitrator considers that the purpose behind the relevant part of Section 6.5(b) of the PPA is clear: the parties agreed that in the event that National was responsible for a period of delay, National should cover Star Hydro's obligation to its lenders. The parties did establish fairly strict parameters for this agreement, in particular the delay had to be reasonably lengthy (at least 60 days after the Engineer had certified that the Complex was ready for synchronization and had confirmed that the delay would impact commissioning), and the obligation to cover Star Hydro's payments to its lenders would not endure beyond an equivalent period for the delay that National was responsible for or the first occasion on which commissioning tests were completed, whichever came sooner. However, the obligation on National to cover the debt payments if it is responsible for the delay is undeniable "*the Power Purchaser shall also be required to pay the principal debt payments when due under the Financing Documents*".

148. The first repayment instalment of the principal debt was to be made in June 2017, which was after the parties intended that the Complex would be operational. Once the Complex was

¹⁹⁰ C-82.

¹⁹¹ National's Pre-Hearing Brief, paragraph 60. Emphasis in the original.

¹⁹² Statement of Claim, paragraph 117.

operational, Star Hydro would service its debt obligations through the tariff that is paid by National to Star Hydro in accordance with the PPA.¹⁹³ The complication here is that the first repayment in fact pre-dated the commissioning of the Complex. In his report, National's expert, Mr Muhammad Shabbir seemed to agree that *"ifliable"* National would *"through the payment under Section 6.5(b) for principal debt payment, put the Respondent in a position it would have been had the COD been achieved by the original RCOD of 20 March 2017..."*¹⁹⁴ Mr Shabbir did not, it appeared, therefore dispute that Star Hydro would be entitled to the Principal Debt Payment (on an assumption that National was responsible for the delay) but asserted that there were two ways in which Star Hydro could recover the payment, either *"upfront from the Claimant under Section 6.5(b), in case the Principal Debt Invoice was undisputed, or recover this as part of tariff payments"*.¹⁹⁵ His view was firmly that *"the Respondent cannot do both; that would be double recovery"* and the Sole Arbitrator concurs with this view. Yet, despite imposing relatively strict parameters in the PPA on National's obligation to cover the principal debt payments the parties did not limit the obligation to situations in which the Principal Debt Invoice was undisputed, the obligation, once triggered, was simply to *"pay the principal debt payments when due"*.

149. The Sole Arbitrator is aware of the complex regulatory framework within which the parties operate and appreciates her obligation to interpret the PPA in accordance with custom and practice in the power market in Pakistan. In this Final Award the Sole Arbitrator does not address NEPRA's¹⁹⁶ authority to determine and approve tariff in Pakistan, nor does she engage with any allegation asserted against Star Hydro relating to indexation and adjustments of tariff. That is a matter for NEPRA. However, the Sole Arbitrator is authorized by the parties to determine the dispute before her, namely to determine the situation in which National was required by the PPA to cover the Principal Debt Payment and whether it is in breach of the PPA by failing to make that payment to Star Hydro. Although there was a disagreement between Counsel as to whether the PPA should be treated as a statutory contract, there was not, as noted above, a divergence between Counsel's views as to whether the Sole Arbitrator should depart from general principles of contractual interpretation were she to conclude that the PPA should be treated as a statutory contract. During the evidentiary hearing Counsel for the Claimant accepted that Pakistan

¹⁹³ Shabbir Report I, page 9.

¹⁹⁴ Shabbir Report I, page 9.

¹⁹⁵ Shabbir Report I, page 10.

¹⁹⁶ The National Electric Power Regulatory Authority in Pakistan.

courts “have taken the position that there is really no real distinction between principles of interpretation that apply to statutes and that apply to contracts” and concluded that the principles “are, for the most part, identical”.¹⁹⁷ The Sole Arbitrator accordingly makes no finding as to whether the PPA is a statutory contract and confirms that she applied general principles of contractual interpretation to determine the issue of the Principal Debt Invoice in accordance with Counsel’s submissions.

150. National argues that “the Principal Debt Invoice did not conform with the provisions of Section 6.5(b) and was not, as required under Section 6.5(b), “signed by the Lenders or the Agent certifying the amount shown therein to be correct and stating the due date for such payment of principal debt under the Financing Documents”.”.¹⁹⁸ National relies on Dr Shabbir to make three arguments in this regard: “(a) The Principal Debt Invoice was not signed by the Lenders or the Agent certifying that the amount stated in the invoice is correct and stating the due date of the payment; (b) The Lender or the Agent did not certify the amount stated in the Principal Debt Invoice and other invoices issued by the Lenders to the Respondent are correct; and (c) The invoices issued by the Asian Development Bank and International Finance Corporation were not signed by the respective lenders. It appears that the Respondent attempted to recover this payment without the knowledge and information of its Lenders”.¹⁹⁹

151. Demonstrating again the care that the parties took over this provision, Section 6.5(b) does specify certain formalities for the notification to National relating to its obligation to cover the Principal Debt Invoice. The payment was to be due, following “invoice therefor” and that invoice was to be “signed by the Lenders or the Agent certifying the amount shown therein to be correct and stating the due date for such payment of principal debt under the Financing Documents”. The Sole Arbitrator was not persuaded by National’s argument that the Principal Debt Invoice did not comply with Section 6.5(b) such as to invalidate Star Hydro’s claim under that provision. The Principal Debt Invoice and its annexures together provide sufficient validation of the Principal Debt Payment, the Agent signed Annexure B and the due date for payment clearly appears on the face of each invoice (enclosed in Annexure C). The Sole Arbitrator also notes that National wrote to Star Hydro at some length in January 2018 disputing the Principal Debt Invoice (amongst other things) and did

¹⁹⁷ Tr 1/51:11-25.

¹⁹⁸ Statement of Claim, paragraph 120.

¹⁹⁹ Shabbir Report 1, page 10.

not question the formalities of the Principal Debt Invoice. The Sole Arbitrator finds that the Principal Debt Invoice complies with the formalities required by Section 6.5(b) of the PPA.

152. The Sole Arbitrator finds that National's obligation to cover the Principal Debt Payment was validly triggered in accordance with the PPA, that National was validly notified of the obligation to pay, and that National breached the PPA by failing to pay the Principal Debt Invoice. National's arguments relating to the quantum of the Principal Debt Invoice are addressed in Section IV(G) below.

3. Restrictions on the obligations to make payments under Section 6.5

153. That is not, however, the end of the story. Section 6.5(c) places two restrictions on National's obligations to make the payments described above (the Delay Payments and the Principal Debt Payment). These are (i) *"The Power Purchaser shall have no obligation to make the payments provided in this Section 6.5 if and to the extent that the delay in the Commissioning Tests would nevertheless have occurred regardless of the Power Purchaser's delay or deferral of such tests"*, and (ii) *"If payments by the Power Purchaser under this Section 6.5 shall have commenced or the obligation for such payments shall have accrued, the Complex shall be tested at the first available opportunity thereafter"*. The Sole Arbitrator observes that in agreeing these provisions the parties clearly intended to mitigate National's obligations to make payments under Section 6.5, particularly by reference to the obligation to test the Complex at the first available opportunity. The Sole Arbitrator finds that the restrictions apply to both the Delay Payments and the Principal Debt Payment.

(a) Would the delays to the Commissioning Tests nonetheless have occurred?

154. National advanced an argument that the delays to the Commissioning Tests would nonetheless have occurred, had the PPIW been completed on time. It pointed to issues which arose after the Complex had been synchronized with the grid and which delayed the successful completion of the Commissioning Tests until 8 November 2017, when the Complex finally began commercial operations. National bears the burden of showing to the satisfaction of the Sole Arbitrator that it was more likely than not that delays to the Commissioning Tests would nonetheless have occurred, had the PPIW been completed on time.

155. As a preliminary observation, the Sole Arbitrator notes that the PPA provided for an "industry standard"²⁰⁰ period of 120 days between the completion of the PPIW and the SCOD and the PPA envisaged 142 days between the planned completion of PPIW on 29 October 2016 and the original RCOD of 20 March 2017. In fact, it took 151 days from the date of completion of the PPIW (10 June 2017) to COD (8 November 2017).

156. According to Mr Mahmood the period between synchronization and commercial operations is required for "initial operations, which entail tuning of controllers at different loads, trial runs, trips and required settings" and "carrying out and completing the Commissioning Testing of the power plant".²⁰¹ The Certificate of Readiness for Synchronization was issued on 11 June 2017 and the Certificate of Readiness for Commissioning (as the Sole Arbitrator has termed it, see paragraph 109 above) was issued on 16 October 2017.²⁰² According to Mr Mahmood "[t]he Respondent, therefore, took 127 days to carry out pre-commissioning tests. This activity should not normally take more than [a] maximum of 6 weeks".²⁰³ Mr Martin asserted that he had seen "no evidence which suggests...that the commencement of commissioning would otherwise have been delayed, but for the delay to the PPIW".²⁰⁴

157. Although it is clear from the PPA that the parties envisaged a period of 142 days between completion of the PPIW and commercial operations of the Complex, it is equally clear that Star Hydro could not squander this time (particularly in light of the obligation to test the Complex at the earliest possible opportunity which is discussed further below).²⁰⁵ According to Mr Mahmood this time period is not "ordinarily intended to identify and rectify design deficiencies, construction and internal defects".²⁰⁶ Mr Mahmood considered that "[t]he proponent of the power plant may, at the very most, correct some minor operational issues, such as leakages, small cracks, spurious alarms, and instrument

²⁰⁰ Tr 5/114: 2-3 and Mahmood Report 1, paragraph 49.

²⁰¹ Mahmood Report 1, paragraph 49.

²⁰² C-60.

²⁰³ Mahmood Report 1, paragraph 60.

²⁰⁴ Martin Report 1, paragraph 4.1.26.

²⁰⁵ And this was accepted by Respondent's Counsel: "THE CHAIR: Mr McClure, let me stop you there. I understand the point you're making but would you accept that the restriction on the obligation to make payments under 6.5(b) essentially changes the schedule, in the sense that, as we know, the parties agreed quite a generous schedule, lots of witnesses confirmed that it was a relatively generous schedule to get to Commercial Operations Date, but once you have the obligation to make the delay payments, this provision to test at the first available opportunity, it is in effect -- it is effectively an attempt to mitigate that, those payments. Would you at least accept that?"

MR MCCLURE: Yes, we would, we would accept that if we were otherwise ready on day 50, for example, we couldn't have waited to day 100 to start the commissioning tests. We would accept that." Tr 5/111:25, Tr 5/112:1-15.

²⁰⁶ Mahmood Report 1, paragraph 50.

adjustments, etc. Major issues in the power plant are expected to be identified, addressed, and resolved at a much earlier stage during the design, construction, and pre-synchronization testing of the power plant."²⁰⁷ Mr Junaid Khan, who gave evidence on behalf of Star Hydro, framed the period differently, asserting that the *"142-day period of time was built into the schedule to allow us time to carry out load tests and complete other pre-commissioning work, which was part of the initial operational testing of the Complex. In particular, this allowed us to see how the equipment performed in practice, and to identify and resolve any issues experienced during the load tests, so that SHPL could be sure that the Complex was ready for Commissioning"*.²⁰⁸ That as may be, the parties did identify that there were reasonably significant issues with the Complex after 11 June 2017 and National relied on a number of these issues to support its argument that the delays to Commissioning would have occurred even if the PPIW had been completed on time.

158. The issues National relies on can be summarised as (i) outstanding civil works repairs, (ii) defective turbine design and draft tube instability, (iii) power swings and penstock trifurcation defects, and (iv) absence of protective equipment in the form of over/under frequency relays.²⁰⁹ National also makes a further allegation that Star Hydro was responsible for delay caused by the testing and installation of the metering system.²¹⁰ National asserts that all these issues meant that, if the PPIW had been completed on 29 October 2016 as scheduled, commercial operations would still have not begun within the 142 day period envisaged in the PPA. As noted, commercial operations began within 151 days of completion of the PPIW and, in fact, if the nine days (between 30 October 2017 and 8 November 2017) are excluded,²¹¹ Star Hydro met the parties' expectations regarding the 142 day period.

159. Mr Martin presented a detailed expert report on behalf of Star Hydro addressing, amongst other things, alleged delays to the commissioning of the Complex that occurred after 11 June 2017. He addressed the issues raised by National and set out above in pages 92-134 of his report.²¹² It was notable that National did not challenge the evidence of Mr Martin during the evidentiary hearing.

²⁰⁷ Mahmood Report 1, paragraph 50.

²⁰⁸ Junaid Khan Statement 1, paragraph 16.

²⁰⁹ National's Pre-Hearing Brief, paragraphs 128-144.

²¹⁰ National's Pre-Hearing Brief, paragraphs 165-166.

²¹¹ This nine day period is addressed in Section IV(D) of this Final Award.

²¹² Martin Report 1.

160. Mr Sadiq, Electrical Manager for Star Hydro, gave evidence that *"the civil repair works were completed by mid-July 2017 and did not affect the synchronisation process, the initial operational testing or the Commissioning Tests"*.²¹³ He asserted *"if the PPIW had been completed earlier, it would have been simple to carry out the civil repair works whenever necessary prior to COD"*.²¹⁴ Mr Sadiq's evidence was that the repairs were carried out in parallel to *"synchronisation and pre-commissioning activities"*.²¹⁵ Mr Martin concluded *"the civil works repairs were completed in mid-July 2017 and in my opinion it is unlikely that they cause any critical delay to the progress of the commissioning tests"*.²¹⁶ The Sole Arbitrator finds that the 142 period would have been adequate to absorb the necessary time to complete the civil repair works.

161. Reasonably significant issues were encountered at the Complex in relation to the design of the three turbines and instability with the draft tubes. Each of the three Francis turbines at the Complex included a draft tube which improve the efficiency of the turbine.²¹⁷ It was acknowledged by both parties that the three turbines experienced pulsations in the draft tubes and that remedial work was required to address the issue (by using a T-pipe to break up the draft tube vortex). Dr Morse, who gave expert evidence on behalf of Star Hydro, confirmed that the draft tube instability was *"difficult to diagnose in the moment"* and that the issues only arose (and could only arise) after the Complex was connected to the grid.²¹⁸ His opinion was that *"the draft tube pulsations that were discovered during precommissioning testing could not have been reliably discovered and characterized until the full-scale testing performed in the pre-commissioning phase. The EPC Contractor identified the problem and its solution in an efficient manner"*.²¹⁹ Mr Martin concluded *"the turbine issue was seemingly complete by late-July 2017 and is therefore unlikely to have had a direct impact on the issue of the Certificate of Readiness, on 16 October 2017"*.²²⁰

162. Further issues arose with instability of the penstock trifurcation and Dr Morse, who gave expert evidence on behalf of Star Hydro, opined that this instability *"could not have been discovered unless all three of the turbines at the Complex were operating simultaneously"*

²¹³ Sadiq Statement 1, paragraph 94.

²¹⁴ Sadiq Statement 1, paragraph 95.

²¹⁵ Sadiq Statement 1, paragraph 95.

²¹⁶ Martin Report 1, paragraph 3.6.12.

²¹⁷ Morse Report 1, paragraphs 109 *et seq.*

²¹⁸ Tr 4/133: 25. Tr 4/134:1. Tr 4/136:14.

²¹⁹ Morse Report 1, paragraph 120.

²²⁰ Martin Report 1, paragraph 3.7.26.

(i.e. during load tests after synchronization with the grid system)".²²¹ He concluded "[a]fter the issue was discovered, it was addressed in an effective and efficient manner".²²² Dr Morse's opinion was not challenged by National during the evidentiary hearing.

163. Mr Martin considered that the resolution of the power swings and the penstock trifurcation defences was the "*critical issue between 28 July 2017 and 12 October 2017*".²²³ Although Star Hydro accepted that had there not been issues with the power swings and instability in the penstock trifurcation Star Hydro could have moved to commission the Complex earlier than it did,²²⁴ the Sole Arbitrator does not find that the commissioning tests would have been delayed regardless of the delay in completing the PPIW. The Sole Arbitrator was satisfied on the evidence before her that none of these issues could have been identified until the turbines were running on full electrical load (to state the obvious, this has to be after the completion of the PPIW). Once again, the Sole Arbitrator considers that the period agreed by the parties provided ample time to resolve these issues once they were identified.

164. National also made allegations in relation to the over/under frequency relays which protected the generators at the complex. It relied on the fact that Star Hydro did not install or enable the over/under frequency relays until 10 August 2017 and argued that therefore there was additional delay to commissioning.²²⁵ Star Hydro argued "*this issue was identified on 19 July 2017 (approximately five weeks after synchronisation), and was resolved within a month by 10 August 2017. Thus, this alleged issue could not have caused a delay in the Commissioning Tests which only had to be completed two months later, by the extended RCOD of 30 October 2017*".²²⁶ Mr Martin was unable to say whether the late enabling of the relays impacted the Commissioning Tests or not,²²⁷ however, the Sole Arbitrator finds that the issue was resolved within the 142 day period envisaged by the parties.

165. In relation to the metering equipment, Section 7.1(b) of the PPA required National to procure the metering system for the Complex at its expense and provide it to Star Hydro "*not later than one hundred and eighty (180) Days prior to the then Scheduled Commercial Operations Date*". The metering system was delivered to Star Hydro on 16 February 2017,

²²¹ Morse Report I, paragraph 128.

²²² Morse Report I, paragraph 131.

²²³ Tr 4/150:24-25.

²²⁴ Tr 1/123:24-25, Tr 1/124:1.

²²⁵ Statement of Claim, paragraph 128.

²²⁶ Statement of Defence and Counterclaim, paragraph 113.

²²⁷ Martin Report I, paragraph 13.9.9.

ten days prior to SCOD.²²⁸ National made arguments as to why the metering system was late and blamed Star Hydro for various issues regarding wiring, testing and sealing of the system.²²⁹ Regardless of the reasons behind the delay to the metering system, the Sole Arbitrator was persuaded that the timing of the installation of the metering system did not cause any delay to the commissioning of the Complex. The metering system was installed on 5 May 2017²³⁰ and the PPIW were completed on 10 June 2017. The Sole Arbitrator therefore finds that there was no delay to the Commissioning of the Complex caused by any delay in installing the metering system.

166. In conclusion, the Sole Arbitrator found the witness evidence compelling that there had been significant challenges after the completion of the PPIW in getting the Complex to a position where it was ready for commissioning, but she was not persuaded by National that the delay to the Commissioning Tests would have occurred regardless of the delay to the PPIW. The delay in completing the PPIW had a knock-on effect on the progress of the project. The Sole Arbitrator determined, on the evidence before her, that Star Hydro complied with the expectations of the parties, which were that commercial operations would be achieved within a 142 day period after the Complex was synchronized to the grid.

(b) Was the Complex tested at the first available opportunity?

167. The second restriction on the obligation to make payments under Section 6.5(c) is that *"If payments by the Power Purchaser under this Section 6.5 shall have commenced or the obligation for such payments shall have accrued, the Complex shall be tested at the first available opportunity thereafter"*. A question arose as to whether the obligation to test at the first available opportunity referred to all tests or just the Commissioning Tests.²³¹ The Sole Arbitrator considers that the wording of Section 6.5 as a whole means that the better view is that the parties intended to refer to the Commissioning Tests, see, for example, the reference in Section 6.5(b) to the Delay Payments continuing until the earlier of *"(i) the end of a period equal to the period of delay in completing the [PPIW] and (ii) the completion of the first attempting Commissioning Tests (whether successfully completed or not)"*, the reference to the *"then scheduled Commissioning Tests"* and the limitation on National's

²²⁸ R-18.

²²⁹ Hussain Statement 1, paragraphs 19-21.

²³⁰ Hussain Statement 1, paragraph 21.

²³¹ Tr 5/84:20-25.

liability to make the payments *"to the extent the Commissioning Tests would nevertheless have occurred"* discussed in the preceding section.

168. Mr Mahmood considered that it took *"an inordinate amount of time for commissioning the Complex"*,²³² however his arguments were mainly to the effect that Star Hydro was inefficient and that had he been managing the project, he would have approached things differently.²³³ It appeared to the Sole Arbitrator that there was no suggestion that Star Hydro had reached a position where the Commissioning Tests could have begun but had, for whatever reason, decided not to proceed to conduct the tests. The evidence does not support this conclusion and, in fact, leads to a conclusion that all parties (including the Engineer) were mindful of the need to maintain progress on the project and achieve COD. By way of example, Mr Thick wrote to Star Hydro on 13 July 2017 to *"emphasise our concern regarding the programming of the commission going forward"* and noting *"there are many challenges ahead to attain COD"*.²³⁴ The contemporaneous correspondence during this period shows efforts to resolve the issues discussed in the preceding section of this Final Award.²³⁵ There is also evidence of Star Hydro's concern over the stability of the grid affecting the Commissioning Tests, shown in Star Hydro's letter to CPPA-G on 24 July 2017 which stated *"Given the location of the Project, the capacity of the transmission lines, inconsistent load, and the fragile nature of the grid stability in the area, it is not possible that a stable grid shall be available for the Project until the transmission line to, the Mansehra New Grid station is commissioned. Such situation leaves the Company and the Project in a highly vulnerable situation, totally out of the Company's control. With current interconnection scheme, it can be said with high degree of confidence that there will be interruptions in the PPA commissioning tests of the Complex due to grid conditions"*.²³⁶ CPPA-G acted promptly in relation to this issue, writing to the Pershawar Electric Supply Company (amongst others) to address the problem of grid instability and referencing that there were *"hurdles to the commissioning tests"* and that *"the power plant is facing the frequent tripping and does not guarantee smooth Commissioning of the Complex"*.²³⁷ Other correspondence supports a conclusion that the parties were working diligently towards the

²³² Tr 4/26:22-23.

²³³ Tr 4/31: 6-7 *"If I was the project manager, I would do a lot of jobs in parallel"*.

²³⁴ C-135.

²³⁵ See, for example, C-36, R-15, C-98.

²³⁶ R-94.

²³⁷ R-16.

Commissioning Tests.²³⁸ As noted, Mr Martin believed the resolution of the power swings and the penstock trifurcation was the *"critical issue between 28 July 2017 and 12 October 2017"*²³⁹ and the evidence supports the view that the parties were working diligently to resolve this issue and were not avoiding starting the Commissioning Tests. Indeed, Star Hydro requested the Certificate of Readiness for Commissioning from the Engineer on 9 August 2017,²⁴⁰ but then withdrew the request on 11 August 2017 due to the problems it was encountering.²⁴¹ Towards the end of August, National became increasingly concerned that the Commissioning Tests were not taking place,²⁴² but the correspondence shows that Star Hydro was addressing these concerns with Daewoo, the EPC Contractor.²⁴³ The main areas of concern during September were the instability of the grid and the issue of the power swings.²⁴⁴ On 16 October 2017 Star Hydro requested the Engineer to issue the Certificate of Readiness for Commissioning and the certificate was issued as of that date.²⁴⁵ The Sole Arbitrator concludes that the Complex was ready for the Commissioning Tests as of that date. She finds that there was no compelling evidence to support a conclusion that Star Hydro did not seek to conduct the Commissioning Tests at the earliest available opportunity.

169. There was, unfortunately, an issue with the Engineer's availability to witness the Commissioning Tests which meant that the Commissioning Tests were not completed by 30 October 2017, but were completed on 7 November 2017,²⁴⁶ with COD achieved the following day. The Sole Arbitrator determines that but for the Engineer's unavailability between 16 October 2017 and 24 October 2017, COD would have been achieved by 30 October 2017, i.e within the period of time between completion of the PPIW and RCOD originally envisaged by the parties in the PPA.

170. There was an additional question in relation to the requirement to test the Complex at the first available opportunity. *"Whether, under Section 6.5(b) and (c), SHPL would be entitled to claim any payments from NTDC if the Complex was not tested at the first available*

²³⁸ See, C-160, email from Star Hydro to the Engineer *"we want to go for PPA tests as soon as possible, CPPAG also wants the test to start at the earliest"*.

²³⁹ Tr 4/150:24-25.

²⁴⁰ C-78.

²⁴¹ See C-146 and C-147, letters from Star Hydro to Daewoo, the EPC Contractor.

²⁴² C-46, letter from CPPA-G to Star Hydro *"to concern of CPPA-G company has not started commissioning tests despite lapse of twenty days"*.

²⁴³ C-149.

²⁴⁴ C-54, referencing the grid conditions, C-163 identifying the trifurcation modifications as ongoing.

²⁴⁵ C-44, C-60.

²⁴⁶ C-7.

opportunity?".²⁴⁷ Star Hydro argued that "Section 6.5(c) does not say that SHPL will lose its entitlement to the Section 6.5(b) payments if it does not test at the first available opportunity. Rather, this is a standalone obligation, such that if SHPL is in breach, NTDC would not be excused its payment obligations. Instead, NTDC's remedy would lie in damages (which NTDC has not claimed)".²⁴⁸ The Sole Arbitrator does not consider this to be quite as clear cut as Star Hydro makes out, but views the obligation to test at the first available opportunity as a limitation on the ongoing duty to make the Delay Payments, i.e., the Delay Payments would cease if the Complex was ready to be tested but if Star Hydro did not promptly move to action the tests. In this situation, Star Hydro's entitlement to payments from National would cease, if National was able to demonstrate (i) the Complex was ready for testing and (ii) Star Hydro had not actioned the tests. The issue, is, of course, academic because the Sole Arbitrator has determined that Star Hydro (and, indeed National) worked diligently to ensure that the Complex was ready for testing and tested as soon as possible thereafter (subject to the Engineer's availability).

D. Responsibility for the period 30 October 2017 – 8 November 2017

171. National argues that "*in the absence of a case for the extension of the RCOD, the Respondent cannot absolve itself from any delay caused by the non-availability of the Engineer.*".²⁴⁹ The Sole Arbitrator has determined that Star Hydro has succeeded in showing it was entitled to an extension of the RCOD, therefore National's argument in this regard falls away. The Sole Arbitrator determines that neither party is responsible for the period 30 October 2017 – 8 November 2017, nor does anything turn on this, given the Sole Arbitrator's determination that the Complex was ready for the Commissioning Tests as at 16 October 2017 and COD would have been achieved by 30 October 2017 (the extended RCOD date) had the Engineer been available to witness the tests.

E. Is Star Hydro entitled to additional financial costs?

172. As set out in Section III(B) of this Final Award, Star Hydro made a number of requests for relief from the Sole Arbitrator. The Sole Arbitrator addresses the request for an order that National pay to Star Hydro "*the additional financing costs incurred by SHPL in raising the Principal Debt Payment prior to COD – to be quantified during the course of this*

²⁴⁷ List of Issues, Section IV(F).

²⁴⁸ Star Hydro's Post Hearing Brief, paragraph 57.

²⁴⁹ Statement of Reply, paragraph 144.

arbitration".²⁵⁰ Section 6.5(c) of the PPA states "Except as provided in this Section 6.5, Section 8.1 and Section 16.2, the Company shall be entitled to no other compensation or claim for damages under this Agreement as a result of delay in the completion of the Power Purchaser Interconnection Facilities or deferral of the Commissioning Tests by the Power Purchaser". Star Hydro's request for an order addressing the alleged additional financing costs is denied.

F. List of Issues

173. The parties agreed on a list of issues which was initially provided to the Sole Arbitrator on 27 January 2022 and an updated list was subsequently provided to her on 17 March 2022. For completeness, the Sole Arbitrator addresses the updated list of issues below. Where the complexity of an issue meant that a concise response is not possible, the Sole Arbitrator has cross-referenced to her analysis of the issue in this Final Award.

A. Completion of the PPIW

1. On what date was the PPIW actually completed?

10 June 2017.

B. Was NTDC entitled to an extension of time to complete the PPIW?

2. In relation to the disputed issues concerning the Terminal Tower:

- a. As a matter of fact, did SHPL withhold permission for NTDC to access the Site to construct the Terminal Tower from 1 March 2016 to 15 August 2016, or any period of time therein?

National has not proved to the satisfaction of the Sole Arbitrator that permission to access the Site to construct the Terminal Tower was withheld by Star Hydro.

- b. As a matter of fact, did SHPL (or Daewoo) propose or require the change from the First Location to the Second Location at or around a site meeting on 27 July 2016?

National has not proved to the satisfaction of the Sole Arbitrator that Star Hydro proposed or required the change from the First Location to the Second Location.

If the answer to (a) or (b) is yes, was this a breach of the PPA by SHPL?

²⁵⁰ This request did not appear to be pursued, see the relief set out in Star Hydro's Post-Hearing Brief, but is addressed here for completeness.

Not applicable.

- c. If the answer to (c) is yes, has NTDC established that: (i) this breach materially and adversely affected NTDC's ability to perform the PPIW; and (ii) it would not nevertheless have experienced the delay in completing the PPIW?

Not applicable.

3. In relation to the disputed issues concerning the fire-fighting equipment:

- a. As a matter of fact, did NTDC request removal of the fire-fighting equipment at a site visit on 15 December 2016?

National has not proved to the satisfaction of the Sole Arbitrator that it requested removal of the fire-fighting equipment on 15 December 2016.

- b. As a matter of fact, was the fire-fighting equipment removed on 5 January 2017 (as claimed by SHPL) or 6 January 2017 (as claimed by NTDC)?

5 January 2017, as per the unchallenged evidence of Mr Gilani.

- c. Did the time taken to remove the fire-fighting equipment constitute a breach of the PPA by SHPL?

No.

- d. If the answer to (c) is yes, has NTDC established that: (i) this breach materially and adversely affected NTDC's ability to perform the PPIW; and (ii) it would not nevertheless have experienced the delay in completing the PPIW?

Not applicable.

4. In relation to the disputed issues concerning the 11kV Feeder:

- a. As a matter of fact, did SHPL delay the lowering of the 11kV Feeder?

No.

- b. If the answer to (a) is yes, was this a breach of the PPA?

Not applicable.

- c. If the answer to (b) is yes, has NTDC established that: (i) this breach materially and adversely affected NTDC's ability to perform the PPIW; and (ii) it would not nevertheless have experienced the delay in completing the PPIW?

Not applicable.

5. In relation to the disputed issues concerning the change in location of the Switchyard:

- a. As a matter of fact, did SHPL change the location of the Switchyard without the approval of (i) NTDC, and/or (ii) the Azad Jammu & Kashmir Environmental Protection Agency?

No.

- b. If the answer to (a) is yes, was this a breach of the PPA?

Not applicable.

- c. If the answer to (b) is yes, has NTDC established that: (i) this breach materially and adversely affected NTDC's ability to perform the PPIW; and (ii) it would not nevertheless have experienced the delay in completing the PPIW?

Not applicable.

6. If the date for completion for the PPIW was extended, what was the extended date?

Not applicable.

C. SHPL's counterclaims for the Delay Invoices and Principal Debt Invoice

7. Whether, and under what conditions and for which period, NTDC would be liable to make payments to SHPL under Section 6.5(b)?

Addressed below.

8. In relation to SHPL's claim for the Delay Invoices:

- a. Is SHPL entitled pursuant to Section 6.5(b) of the PPA to claim delay payments?

In particular:

- i. Were the PPIW delayed by more than 15 days?

Yes.

- ii. Has such delay caused a delay in the Commissioning of the Complex?

Yes.

- iii. Has the Engineer issued a Certificate of Readiness for Synchronisation and simultaneously certified that the delay caused by NTDC would likely cause the then scheduled Commissioning Tests to be delayed?

Yes.

- b. Would SHPL only be entitled to claim for delay after the date of the Engineer's certification, i.e., for the period corresponding from 9 February 2017 to the date of completion of the PPIW?

No.

- c. Is the Engineer's certification invalid because:

- i. it was backdated;

No.

- ii. it failed to comply with the requirements of Section 8.2 by failing to carry out the tests set out in Section 8.2(f) and (g) or render an opinion in respect of these tests;

No.

- iii. the pre-synchronization tests were not witnessed by the Engineer appointed with the Claimant's approval under Section 2.6(a) as required under Section 8.2 of the PPA?

No.

- d. Was the Complex in fact not ready for Synchronisation on the date the certificates were issued because of the turbine design? If so, what is the consequence of this under the PPA?

No. Not applicable.

- e. Was SHPL entitled to index the amounts claimed in the Delay Invoices or otherwise calculate the amount of the Delay Invoices under the PPA?

See Section IV(G)1.

- f. Is NTDC excused liability pursuant to Section 6.5(c) of the PPA (see D below)? If so, for what period of time?

No.

- g. How much is SHPL entitled to in delay payments (if anything)?

See Section IV(G)1.

9. In relation to SHPL's claim for the Principal Debt Invoice:

- a. Has SHPL satisfied the requirements in Section 6.5(b) to issue the Principal Debt Invoice? In particular:

- i. Has the Engineer issued a Certificate of Readiness for Synchronisation and simultaneously certified that the delay caused by NTDC would likely cause the then scheduled Commissioning Tests to be delayed?

Yes.

- ii. Did the delay to completing the PPIW last more than 60 days after the date of issuance by the Engineer of the Certificate of Readiness for Synchronisation and simultaneous certification that the delay caused by NTDC would likely cause the then scheduled Commissioning Tests to be delayed?

Yes.

- iii. Does the Principal Debt Invoice comply with the formal requirements set out in Section 6.5(b)? If not, is SHPL estopped from relying on any such non-compliance? If not, what impact (if any) does this have on SHPL's entitlement to the sum claimed?

Yes. Not applicable. Not applicable.

b. Is the Engineer's certification invalid because:

i. it was backdated;

No.

ii. it failed to comply with the requirements of Section 8.2 by failing to carry out the tests set out in Section 8.2(f) and (g) or render an opinion in respect of these tests;

No.

iii. the pre-synchronization tests were not witnessed by the Engineer appointed with the Claimant's approval under Section 2.6(a) as required under Section 8.2 of the PPA?

No.

c. Was the Complex in fact not ready for Synchronisation on the date the certificates were issued because of the turbine design? If so, what is the consequence of this under the PPA?

No. Not applicable.

d. Is NTDC excused liability pursuant to Section 6.5(c) of the PPA (see D below)?

No.

e. How much is SHPL entitled to in respect of principal debt payments (if anything)?

See Section IV(G)2.

f. Whether SHPL can claim payment of Principal Debt Invoice, after the full extent of SHPL's claim for increased debt portion of the Project Cost (without exclusion of the Principal Debt Invoice amount) has been assessed by NEPRA?

See Section IV(G)2.

g. Does the fact that SHPL sought to recover an amount commensurate with the principal debt via the NEPRA tariff redetermination process impact SHPL's ability to claim the amount owed under the Principal Debt Invoice in this arbitration and, if so, how?

See Section IV(G)2.

10. Is SHPL entitled to interest on the amounts (if any) to which it is entitled in respect of delay payments or principal debt payments? If so, at what rate and from what date is SHPL entitled to claim interest?

See Section IV(G)3.

D. NTDC's arguments that under Section 6.5(c) it is not liable to make payments

11. Whether, under Section 6.5(b) and (c), SHPL would be entitled to claim any payments from NTDC if the delay in the Commissioning of the Complex would nevertheless have occurred regardless of NTDC's delay in the completion of the PPIW?

See Section IV(C)3(a).

12. Whether, and to what extent, the delay in the Commissioning of the Complex would have nevertheless occurred due to internal defects, design deficiencies, and construction flaws in the Complex?

See Section IV(C)3(a).

13. In relation to the disputed issues concerning the Metering System:

- a. As a matter of fact, did SHPL delay in installing the Metering System?

See paragraph 165.

- b. Should SHPL have purchased the Metering System itself and invoiced NTDC as a Pass-Through Item?

See paragraph 165, no determination necessary.

- c. If the answer to (a) or (b) is yes, has NTDC established that this means that some or all of the delay in the Commissioning Tests would have occurred regardless of NTDC's delay, for the purposes of Section 6.5(c)? If yes, how much of the delay would have occurred regardless?

No. Not applicable.

14. In relation to the outstanding civil repair works identified by the Engineer in May and June 2017 and completed by 14 July 2017, has NTDC established that this means that some or all of the delay in the Commissioning Tests would have occurred regardless of NTDC's delay, for the purposes of Section 6.5(c)? If yes, how much of the delay would have occurred regardless?

No. Not applicable.

15. In relation to the disputed issues with the turbine design:

- a. Could SHPL have identified and taken steps to resolve the issues with the turbine design before synchronisation? If so, should it have done so?

No. Not applicable.

- b. If the answer to (a) is yes, has NTDC established that this means that some or all of the delay in the Commissioning Tests would have occurred regardless of NTDC's delay, for the purposes of Section 6.5(c)? If yes, how much of the delay would have occurred regardless?

Not applicable.

16. In relation to the disputed issues with the penstock trifurcation:

- a. Could SHPL have identified and taken steps to resolve the issues with the penstock design before synchronisation? If so, should it have done so?

No. Not applicable.

- b. If the answer to (a) is yes, has NTDC established that this means that some or all of the delay in the Commissioning Tests would have occurred regardless of NTDC's delay, for the purposes of Section 6.5(c)? If yes, how much of the delay would have occurred regardless?

Not applicable.

17. In relation to the disputed issues with the over/under frequency relays:

- a. As a matter of fact, did SHPL fail to install or enable over/under frequency relays?

No.

- b. If the answer to (a) is yes, has NTDC established that this means that some or all of the delay in the Commissioning Tests would have occurred regardless of NTDC's delay, for the purposes of Section 6.5(c)? If yes, how much of the delay would have occurred regardless?

Not applicable.

18. Whether, under Section 6.5(b) and (c), SHPL would be entitled to claim any payments from NTDC if the Complex was not tested at the first available opportunity?

See Section IV(C)3(b).

19. Was the Complex tested at the first available opportunity? And, if not, what are the consequences (if any) of that under the PPA?

Yes. Not applicable.

E. NTDC's claim for liquidated damages

20. Whether SHPL would be liable for the failure to achieve the COD by the RCOD under Section 9.6(c)?

See Section IV(B).

21. Whether, and under what conditions and for which period, the RCOD could be extended under Section 6.5(b) and (c)?

See Section IV(B).

22. Was the RCOD extended by operation of Section 6.5(b)? In particular:

- a. Was NTDC delayed in completing the PPIW?

Yes.

b. Did such delay cause a delay in the Commissioning of the Complex?

Yes.

c. Has the Engineer issued a Certificate of Readiness for Synchronisation and simultaneously certified that the delay caused by NTDC would likely cause the then scheduled Commissioning Tests to be delayed?

Yes.

d. Is the Engineer's certification invalid because:

i. it was backdated;

No.

ii. it failed to comply with the requirements of Section 8.2 by failing to carry out the tests set out in Section 8.2(f) and (g) or render an opinion in respect of these tests;

No.

iii. the pre-synchronization tests were not witnessed by the Engineer appointed with the Claimant's approval under Section 2.6(a) as required under Section 8.2 of the PPA?

No.

e. Was the RCOD extended for the period corresponding from the date of issuance of the Engineer's certifications, i.e. 9 February 2017, until the date of completion of the PPIW?

See Section IV(B)4(c).

23. If the RCOD was extended, what was the date of the extended RCOD?

30 October 2017.

24. Is NTDC entitled to liquidated damages? And, if so, in what amount?

No. Not applicable.

G. Quantum

174. The Sole Arbitrator has determined that Star Hydro is entitled to the Delay Payments and the Principal Debt Payment and now addresses the quantum of those payments, together with interest, as applicable.

1. Delay Invoices

175. Star Hydro issued the following invoices for Carrying Costs, Insurance Component and Fixed O&M Component amounts payable under Section 6.5(b) of the PPA (the "Delay Invoices"):

- Invoice no. SHPL/COMP/02/01 dated 7 April 2017;
- Invoice no. SHPL/COMP/03/01 dated 7 April 2017;
- Invoice no. SHPL/COMP/04/01 dated 2 May 2017;
- Invoice no. SHPL/COMP/05/01 dated 1 June 2017;
- Invoice no. SHPL/COMP/06/01 dated 30 June 2017;
- Invoice no. SHPL/COMP/07/01 dated 1 August 2017;
- Invoice no. SHPL/COMP/08/01 dated 5 September 2017;
- Invoice no. SHPL/COMP/09/01 dated 2 October 2017; and
- Invoice no. SHPL/COMP/10/01 dated 2 November 2017.²⁵¹

In accordance with Section 6.5(b) of the PPA, the Delay Invoices were issued in respect of the period from 26 February 2017 (the SCOD) until 8 October 2017 (being the date 224 days after the SCOD). The Delay Invoices are for a total amount of PKR 1,491,805,897.

176. National asserted "*The Respondent has unilaterally and wrongfully indexed and adjusted the Carrying Cost, Fixed O&M and Insurance components in [Star Hydro's] Invoices. The Respondent's actions in unilateral indexation and adjustment of Tariff components are not permissible under the applicable contractual and regulatory framework*".²⁵² The Sole Arbitrator disagrees.

177. Mr Peter Bird provided an expert opinion on behalf of Star Hydro on the Delay Invoices (and the Principal Debt Payment). He opined "*the formulae used in the calculations of the*

²⁵¹ C-76.

²⁵² Statement of Claim, paragraph 121.

Delay Invoices are broadly in accordance with the PPA"²⁵³ but made some relatively minor adjustments and calculated a total of PKR 1,499,719,547 for the Delay Invoices. Mr Muhammad Shabbir, who provided an expert opinion on behalf of National, agreed with Mr Bird that the PPA provided specific formulae for the calculation of the Delay Invoices.

178. The Delay Invoices are made up of three components: Carrying Costs, O&M and Insurance. Carrying Costs make up the bulk (84.3%) of the Delay Invoices.²⁵⁴ Although National disputed Star Hydro's position that "*carrying costs are not part of the tariff*"²⁵⁵ the Sole Arbitrator found Dr Bird's opinion that Carrying Costs does not involve any indexation and adjustments to be persuasive.²⁵⁶ National's allegation that Star Hydro had "*unilaterally and wrongfully indexed and adjusted*" the Delay Invoices therefore only applies to the insurance and O&M components, which do require indexation and adjustment. Although much was made of the question of indexation and adjustment in the arbitration and whether the inclusion of the remaining two components in the Delay Invoices impinged upon NEPRA's exclusive authority to determine the tariff, the amounts affected by this issue were relatively small, amounting to around 15% of the Delay Invoices. The amount attributable to indexation was calculated to be around 3.7% of the total amount.²⁵⁷

179. The issue arose because the two remaining components (the O&M component and the insurance component) form part of the tariff calculation which, the parties agree (and the Sole Arbitrator concurs) is exclusively the preserve of NEPRA. National argued that "*The PPA simply does not allow the Respondent to unilaterally index and adjust tariff components, which form basis of the Capacity Price (components of which form the basis of payments to be made under Section 6.5(b)) prior to the COD*".²⁵⁸ Mr Shabbir echoed this view, asserting that Star Hydro was not entitled to apply the formula "*without securing revised indexed EPC stage Tariff from NEPRA prevailing at that time*" and that Star Hydro "*can not perform and apply indexation at its own*".²⁵⁹ National argued strongly that because indexation and adjustment had been "*unilaterally and wrongfully*"²⁶⁰ applied by Star Hydro

²⁵³ Bird Report 1, paragraph 2.2.5.

²⁵⁴ Joint Expert Report of Muhammad Shabbir and Peter Bird.

²⁵⁵ Tr 5/156:7-8.

²⁵⁶ Joint Expert Report of Muhammad Shabbir and Peter Bird.

²⁵⁷ Bird Report 2, Figure 7 and paragraphs 4.4.9-4.4.11.

²⁵⁸ National's Post-Hearing Brief, paragraph 81.

²⁵⁹ Joint Expert Report of Muhammad Shabbir and Peter Bird.

²⁶⁰ Statement of Claim, paragraph 121.

to these two components in calculating the Delay Payments, this meant Star Hydro was not entitled to the Delay Payments at all. The Sole Arbitrator disagrees.

180. The Sole Arbitrator does agree that Schedule I, Part V of the PPA states that “*indexations and adjustment factors shall be determined by NEPRA from time to time and notified in the official Gazette by GOP*”. The Sole Arbitrator notes that the parties set out a formula in the PPA for calculating the Delay Payments and these payments arose prior to the date on which the Complex began commercial operations. The Sole Arbitrator concluded that the fact that the O&M and insurance components form part of the calculation that NEPRA performs in determining or adjusting the tariff does not mean that they cannot be used by Star Hydro to calculate the Delay Payments in accordance with the parties’ agreement in the PPA. The Sole Arbitrator found it instructive that if Delay Payments were due, they were to commence on the SCOD and conclude after the period of the delay or once the Commissioning Tests began (whichever came sooner). This would mean that NEPRA could not be involved in the calculation at all, (because NEPRA’s involvement in setting and adjusting the tariff begins after commercial operations commence).²⁶¹ The Sole Arbitrator determined it was clear from the terms of the PPA that the parties agreed a formula for the calculation of the Delay Payments. She concluded that this did not impinge upon NEPRA’s jurisdiction in relation to the assessment of the tariff. Accordingly, Star Hydro’s claim in relation to the Delay Payments succeeds and the Sole Arbitrator awards PKR 1,499,719,547 to Star Hydro.

2. Principal Debt Invoice

181. The Sole Arbitrator wrestled with the question as to how Star Hydro should be compensated for National’s breach of the PPA in failing to settle the Principal Debt Invoice. It is not in dispute that Star Hydro included the Principal Debt Payment in its tariff application following the commencement of commercial operations and, therefore, at present, it will recover at least a portion of Principal Debt Payment in due course through the tariff. As noted, the Sole Arbitrator shared Mr Shabbir’s view that, had Star Hydro received the Principal Debt Payment upfront from National, it could not then recover that amount through the tariff as this would be double recovery (and indeed, Section 6.5(b) expressly provides that any such upfront payment should be excluded from the tariff application). That is not, however, what happened. National has not paid the Principal Debt Payment upfront in accordance with its agreement in Section 6.5(b). Star Hydro therefore included the payment

²⁶¹ C-1, PPA, Schedule I and references to tariff payments after commercial operations.

in its tariff application. Mr Shabbir asserts that National cannot make any payments to Star Hydro which are not approved "*under the COD Tariff Decision by NEPRA*" and that "*if the Claimant makes any payments to the Respondent the entire chain of payments would be disturbed*".²⁶² With respect to Mr Shabbir, the Sole Arbitrator's decision that National breached the PPA by failing to pay the Principal Debt Invoice is outside the scope of NEPRA's remit and the tariff payments.

182. National argued that Star Hydro can "*only claim debts that have been approved by NEPRA*"²⁶³ and that it should not be ordered to pay the Principal Debt Invoice on the basis that it was "*excessive and beyond the amount determined as payable by NEPRA*".²⁶⁴ National asserted that "*the Claimant's liability to principal debt is only to the extent of principal debt repayments allowed in the Tariff (and incorporated in Schedule I, Annex II). The Claimant is not liable to pay any amounts under the Financing Documents*"²⁶⁵ and was supported in this by Mr Shabbir who considered that, "*if the Claimant was liable*", Star Hydro would "*only have been entitled to receive an amount for principal debt payment based on 'Annex II-Debt Schedule' of Schedule I*".²⁶⁶ The Sole Arbitrator disagrees. The requirement in the PPA is that if the obligation to pay the Principal Debt Payment is triggered (and the Sole Arbitrator determined that it was properly triggered, see Section IV(C)2 above) then National was "*to pay the principal debt payments when due under the Financing Documents.*" If National was correct in that the payment had to be based on Schedule 1 of the PPA then there would be no need to include the reference to the Financing Documents in this provision.²⁶⁷

183. National relied on additional arguments regarding the contractual steps for disputing the Principal Debt Invoices to assert that its liability for the Principal Debt Payment never crystallized.²⁶⁸ In particular it claimed that there were 'four steps' for the parties to dispute the Principal Debt Payment, and that Star Hydro had inverted the third and fourth step. It outlined its view of the steps as follows:

²⁶² Shabbir Report 1, page 12.

²⁶³ Tr 1/40:2.

²⁶⁴ Tr 1/42: 16-17.

²⁶⁵ National's Pre-Hearing Brief, paragraph 183.

²⁶⁶ Shabbir Report 1, page 8.

²⁶⁷ Mr Bird agreed with this conclusion "*the reasonable interpretation of the language of Section 6.5 is that the Principal Debt Payment refers to the amount owing to lenders and not to the amount in annex 1 and annex 2 of schedule 1 of the PPA*", Tr 4/237:18-22.

²⁶⁸ Statement of Reply, paragraph 172.

"(a) First Step: If the Company was of the view that the Power Purchaser was liable under Section 6.5(b), the Company would issue the principal debt payment invoice.

(b) Second Step: If the Power Purchaser admitted the Company's invoice, the Power Purchaser would make the payment. If the Power Purchaser intended to dispute the invoice, the Power Purchaser may issue Invoice Dispute Notice under Section 9.9 and/or Article 18.

(c) Third Step: The Company may refer the dispute to determination of the Expert for ascertainment of liability regarding the disputed invoice. If the Expert so determines, the invoice would be paid by the Power Purchaser to the Company. Otherwise, the Power Purchaser had no liability under an invoice disputed and not determined to be payable by the Expert.

(d) Fourth Step: The Company would disclose the matter of payment/nonpayment of principal debt invoice (or any dispute in this regard) to NEPRA in the petition for determination of tariff at the COD and seek exclusion of the amount being paid from the tariff determination (as applicable)".²⁶⁹

184. The Sole Arbitrator was unpersuaded by National's arguments in this regard. She agrees with National that there is "*no doubt*"²⁷⁰ that the principal debt amount would ultimately be assessed by NEPRA in its determination of the tariff once commercial operations were achieved. However, had National complied with its obligations under Section 6.5(b) it would have paid the Principal Debt Invoice when due and Star Hydro would have excluded the payment from the tariff determination. National did not do so and Star Hydro included the Principal Debt Payment in its tariff application in August 2018.²⁷¹ The parties conducted the Expert Determination proceedings between December 2019 and September 2020. The Sole Arbitrator sees no relevance or particular significance in the timing of those events.

185. National argued that Star Hydro had, in effect, elected to recover the Principal Debt Invoice through the tariff and was therefore barred from recovering it in these proceedings. The Sole Arbitrator was not persuaded by this argument. The Sole Arbitrator has determined that liability to settle the Principal Debt Invoice arose in June 2017. National has not paid the

²⁶⁹ Statement of Reply, paragraph 172.

²⁷⁰ Statement of Claim, paragraph 183.

²⁷¹ C-79.

Principal Debt Invoice. The tariff determination, while it certainly complicates matters, does not operate to extinguish National's obligation to make the Principal Debt Payment when due under Section 6.5(b).

186. The Sole Arbitrator has found that National breached the PPA by failing to make the Principal Debt Payment. She quantifies the damages payable for National's breach as USD 9,507,197.18, the "Principal Debt Damages". Damages for breach of contract operate to put the wronged party in the position they would have been had the contract been properly complied with. The Sole Arbitrator awards Star Hydro the Principal Debt Damages to compensate it for National's breach of the PPA in failing to pay the Principal Debt Invoice.

187. In order to ensure that Star Hydro is not put in a better position than it would have been in had the contract been properly complied with, the award of the Principal Debt Damages is conditional upon Star Hydro making an application to NEPRA to revise the tariff to exclude the Principal Debt Damages. The award of the Principal Debt Damages will crystallize 30 days after Star Hydro makes the application to NEPRA. Payment of the Principal Debt Damages is not contingent upon or related to any subsequent decision of NEPRA relating to the tariff, the obligation to pay the Principal Debt Damages is triggered upon Star Hydro providing National with evidence of its application to NEPRA to revise the tariff to exclude the Principal Debt Damages.

3. Pre-award interest

188. Both parties sought interest on the sums they claimed from each other²⁷² at the Delayed Payment Rate²⁷³ set out in the PPA. Given that National claimed interest from Star Hydro on its liquidated damages claim and, further, that it did not engage substantively with Star Hydro's claim for interest, the Sole Arbitrator awards interest to Star Hydro on the Delay Invoices and the Principal Debt Invoice. Although Mr Shabbir alleged "*Mr Bird has acknowledged the deviation from the definition of Delayed Payment Rate as set out in PPA. Mr Bird has calculated the delayed payment interest on Principal Debt Invoice according to his own understanding without considering the terms and conditions of the PPA. This, in my view, is not permissible*"²⁷⁴ the Sole Arbitrator found no support for this allegation and,

²⁷² Statement of Claim, paragraph 125(e), Statement of Defense and Counterclaim, paragraph 202.

²⁷³ The Delayed Payment Rate was defined in the PPA as "*KIBOR plus four and a half percent (4.5%) per annum, compounded semi-annually, calculated for the actual number of Days which the relevant amount remains unpaid on the basis of a three hundred and sixty-five (365) Day year*".

²⁷⁴ Shabbir Report 2, paragraph 28.

indeed, the allegation was explored with Mr Shabbir during cross-examination, who accepted that Mr Bird had not deviated from the definition of the Delayed Payment Rate (in fact, it appeared that the confusion may have arisen due to a translation issue between derivation and deviation).²⁷⁵ Mr Bird set out in detail his approach to the calculation and application of the Delayed Payment Rate in Appendix D to his first expert report and the Sole Arbitrator accepts his opinion.

189. Dr Bird calculated interest at the Delayed Payment Rate on the Delay Invoices as PKR 1,031,980,436²⁷⁶ and the Sole Arbitrator accepts this figure. The Sole Arbitrator notes that Dr Bird offset the amount paid by National to Star Hydro following the Expert Determination from the total amount claimed in relation to the Delay Invoices and calculated that the amount due in relation to the Delay Invoices including interest was PKR 2,019,318,458²⁷⁷ and the Sole Arbitrator accepts this figure.

190. Dr Bird calculated interest at the Delayed Payment Rate on the Principal Debt Damages to be USD 6,945,610.107²⁷⁸ and the Sole Arbitrator accepts this figure. Dr Bird calculated that the amount due in relation to the Principal Debt Damages including interest was USD 16,452,807²⁷⁹ and the Sole Arbitrator accepts this figure. For the reasons given below, she does not award post-award interest on this figure. For the avoidance of doubt, she notes here that the amount due in relation to the Principal Debt Damages crystallizes at USD 16,452,807 as at the date of this Final Award and interest at the Delayed Payment Rate no longer accrues.

4. Post-award interest

191. Without giving particulars, Star Hydro sought interest on the sums it claimed in this arbitration.²⁸⁰ The Sole Arbitrator is authorized to award interest under Section 49 of the Arbitration Act 1996 and Article 26.4 of the LCIA Rules which states: *"Unless the parties have agreed otherwise, the Arbitral Tribunal may order that simple or compound interest shall be paid by any party on any sum awarded at such rates as the Arbitral Tribunal*

²⁷⁵ Tr 4/209-211.

²⁷⁶ Bird Report 1, paragraph 2.2.9.

²⁷⁷ Bird Report 1, paragraph 2.2.9. Dr Bird's report used an Assessment Date of 1 November 2021 which the Sole Arbitrator adopts.

²⁷⁸ Bird Report 1, paragraph 2.3.5.

²⁷⁹ Bird Report 1, paragraph 2.3.5. Dr Bird's report used an Assessment Date of 1 November 2021 which the Sole Arbitrator adopts.

²⁸⁰ Star Hydro's Post Hearing Brief, paragraph 102.

decides to be appropriate (without being bound by rates of interest practised by any state court or other legal authority) in respect of any period which the Arbitral Tribunal decides to be appropriate ending not later than the date upon which the award is complied with".

The Sole Arbitrator considers it is appropriate to award post-award interest on the Delay Invoices that she has determined are payable by National to Star Hydro, and does so, at the standard judgment rate applied in England and Wales, being the seat of the arbitration.

192. She does not award post-award interest on the Principal Debt Damages (nor, for the avoidance of doubt, does she impose it on the Principal Debt Damages Interest) due to the condition she has imposed which Star Hydro must fulfil before National's obligation to pay the Principal Debt Damages arises.

H. Costs of the arbitration

193. The costs of the arbitration are divided into costs relating to the parties' presentation of their cases ("Legal Costs") and costs relating to the fees of the arbitration institution and the Sole Arbitrator ("Arbitration Costs"). The Sole Arbitrator has carefully considered the parties' claims to an award of their costs incurred in relation to this arbitration. Under Article 28.3 of the LCIA Rules the Tribunal shall decide on the amount of Legal Costs "*on such reasonable basis as it thinks appropriate*". The Sole Arbitrator is afforded considerable discretion with regards to the level of costs she may award and, in doing so, should consider the particular circumstances of the arbitration.

194. As a preliminary comment, the Sole Arbitrator observes that the parties defended their respective positions tirelessly, as can be seen by their detailed and extensive submissions. The Sole Arbitrator was assisted by the legal submissions and the expert and factual evidence presented to her during this complex and highly technical arbitration.

1. Legal Costs

195. Article 28.4 of the LCIA Rules sets out the basis upon which an arbitral tribunal shall make its decisions on costs: "*The Arbitral Tribunal shall make its decisions on both Arbitration Costs and Legal Costs on the general principle that costs should reflect the parties' relative success and failure in the award or arbitration or under different issues, except where it appears to the Arbitral Tribunal that in the circumstances the application of such a general principle would be inappropriate under the Arbitration Agreement or otherwise. The*

Arbitral Tribunal may also take into account the conduct of the parties and that of their authorised representatives in the arbitration, including any cooperation in facilitating the proceedings as to time and cost and any non-cooperation resulting in undue delay and unnecessary expense." The PPA also provides that costs may be awarded against a party, stating (in relevant part) *"Except as awarded by the arbitrator and except as hereinafter provided, each Party shall be responsible for its own costs incurred by it in connection with an arbitration hereunder"*.

196. The Sole Arbitrator considered that there was no reason to depart from the principle set out in the LCIA Rules (and generally followed in international arbitration), that costs should follow the event, namely that a successful party is entitled to recover some or all of its costs incurred in relation to its claims. As Star Hydro has prevailed in all its claims in the arbitration, the Sole Arbitrator finds it is appropriate to award Star Hydro an amount in relation to the costs it has incurred.

197. There was a significant difference between the costs incurred by the parties in this arbitration. National sought costs of GBP 64,803 and PKR 13,475,866. Star Hydro sought costs of US\$2,334,784.70 and US\$32,350 for its two sets of counsel, together with US\$795,758.29 for costs relating to factual and expert witness costs, and a further US\$47,003.31, plus PKR 2,386,917 plus GBP 5,467.60 in miscellaneous expenses comprising various travel and accommodation costs, hearing venue costs, court reporter costs and document hosting and production. National asserted that Star Hydro's costs were *"unreasonable and disproportionate"*.²⁸¹ Star Hydro defended its costs and emphasized that National had, in its words, *"all but abandoned"*²⁸² its claim that Star Hydro had caused the delay to the PPIW but had refused to withdraw it. Star Hydro estimated that 30% of its legal fees related to this element of the arbitration.²⁸³ The Sole Arbitrator makes no comment on that estimation but does observe that the asserted claim regarding the cause of the delay to the PPIW was extremely factually complex and required evidence to be submitted from numerous witnesses who would not otherwise have been called upon in relation to the dispute.²⁸⁴

²⁸¹ National's Reply Costs Submission, paragraphs 8, 10.

²⁸² Star Hydro's Costs Submission, paragraph 15.

²⁸³ Star Hydro's Costs Submission, paragraph 17.

²⁸⁴ See the evidence of Mr Nizar, Mr Furqan Shabbir, Mr Gilani and Mr Ali Shah.

198. The Sole Arbitrator finds that the costs incurred by Star Hydro are significant but are not unreasonable or disproportionate. This was a highly complex arbitration which necessitated extensive expert and factual evidence and as noted, the Sole Arbitrator was assisted in her task by both parties and their detailed submissions. National pursued arguments (in addition to the extension of time for the PPIW claim mentioned above), such as, amongst others, the late claim that the Engineer had improperly delegated its function to Mr Bhatti that ultimately proved to be without merit, but which required Star Hydro to spend time and resources addressing. The Sole Arbitrator is mindful of the extreme discrepancy between the claimed costs and, in her discretion, determines that the amounts awarded to Star Hydro should be reduced to reflect this.

199. Star Hydro has claimed a total of US\$2,367,134.70 for its legal counsel, which the Sole Arbitrator reduces by 10% to US\$2,130,421.30. She reduces the amount claimed in relation to expert fees by 25% to US\$596,818.72 as quantum eventually proved to be reasonably straightforward. The Sole Arbitrator does not award the amounts claimed by Star Hydro in relation to miscellaneous expenses.

200. The total amount awarded to Star Hydro in relation to its Legal Costs is therefore US\$2,727,240.²⁸⁵

2. Arbitration Costs

201. The net costs of the arbitration (other than the legal or other costs incurred by the parties themselves) have been determined by the LCIA Court, pursuant to Article 28.1 of the LCIA Rules, to be as follows:

Registration fees:	£3,900.00
LCIA's administrative charges:	£18,188.48
Tribunal's fees and expense:	£80,271.56
Total Arbitration Costs:	£102,360.04

Towards these costs, the Claimant has paid £54,450.00, which includes a registration fee and deposits lodged, and the Respondent has paid £54,450.00, which includes a registration fee and deposits lodged. A total of £108,900.00 has been received from the Claimant and

²⁸⁵ Rounding down to nearest dollar.

Respondent with £102,360.04 put towards the Arbitration Costs. The balance of funds is to be returned to the Parties in accordance with Article 24.3 of the LCIA Rules.

3. Interest on Costs

202. Star Hydro also sought simple interest on its costs at a rate of 8% per annum. As noted above, the Sole Arbitrator is authorized to award interest under Section 49 of the Arbitration Act 1996 and Article 26.4 of the LCIA Rules. The Sole Arbitrator considers it is appropriate to award interest on the amount awarded in relation to Star Hydro's Legal Costs and Arbitration Costs and does so.

V. DISPOSITION

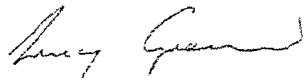
203. In this FINAL AWARD, the Sole Arbitrator finds, directs and awards, as follows:

- a) National's claim for payment of US\$2,800,508 under Section 9.6(c) of the PPA is denied.
- b) National's claim for repayment of PKR 512,401,525 is denied.
- c) National is in breach of Section 6.5(b) of the PPA and is directed to pay Star Hydro PKR 2,019,318,458, being the amount due under the Delay Invoices plus interest at the Delayed Payment Rate.
- d) National is in breach of Section 6.5(b) of the PPA and is directed to pay Star Hydro US\$16,452,807, being the Principal Debt Damages plus interest at the Delayed Payment Rate.
- e) National is ordered to pay Star Hydro US\$2,727,240, representing a portion of Star Hydro's claimed Legal Costs.
- f) National is ordered to pay Star Hydro £51,180.02, representing Star Hydro's share of the Arbitration Costs.
- g) If the sums set out in paragraph 203(c), (e) and (f) above are not paid to Star Hydro by 30 days after the date of this Final Award, simple interest will accrue at a rate of 8%.

h) This Final Award is in full settlement of all claims and counterclaims submitted in this arbitration. All other claims and counterclaims not specifically addressed herein are denied.

Made in London, the place of arbitration.

On 18 May 2022.

A handwritten signature in cursive script, appearing to read 'Lucy Greenwood', written above a horizontal line.

Lucy Greenwood, Sole Arbitrator

Annex 2

STAR HYDRO POWER LIMITED

147 MW PATRIND HYDRO POWER PROJECT

REVISED DEBT REPAYMENT SCHEDULE

DUE TO EXCLUSION OF 1ST PRINCIPAL DEBT AMOUNT IN ACCORDANCE WITH LCIA AWARD DATED MAY 18, 2022

Total Debt in USD	244,695,400
1st Principal Repayment	(9,507,197)
	235,188,203
FX as applicable on COD	100.91
Total Debt in PKR	23,732,052,339
Applicable LIBOR - Six months	1.447700%
Margin	4.75%
Total Interest Rate	6.197700%

Period	Opening Balance	Interest	% Repayment	Repayment	Debt Service	Closing Balance	Tariff Component	
							Principal	Interest
	PKR in "000"							Rs/KW/Month
1	23,732,052	735,421	3.0452%	722,692	1,458,113	23,009,360	832.0742	821.1147
2	23,009,360	713,026	3.1396%	745,087	1,458,113	22,264,273		
3	22,264,273	689,936	3.2369%	768,176	1,458,113	21,496,097		
4	21,496,097	666,132	3.3372%	791,981	1,458,113	20,704,117	884.44	768.75
5	20,704,117	641,590	3.4406%	816,523	1,458,113	19,887,593		
6	19,887,593	616,287	3.5472%	841,826	1,458,113	19,045,768		
7	19,045,768	590,200	3.6571%	867,913	1,458,113	18,177,855	999.27	653.91
8	18,177,855	563,304	3.7705%	894,808	1,458,113	17,283,047		
9	17,283,047	535,576	3.8873%	922,537	1,458,113	16,360,510		
10	16,360,510	506,988	4.0078%	951,125	1,458,113	15,409,385	1,062.17	591.02
11	15,409,385	477,514	4.1320%	980,599	1,458,113	14,428,786		
12	14,428,786	447,126	4.2600%	1,010,986	1,458,113	13,417,800		
13	13,417,800	415,798	4.3920%	1,042,315	1,458,113	12,375,485	1,200.07	453.12
14	12,375,485	383,498	4.5281%	1,074,615	1,458,113	11,300,870		
15	11,300,870	350,197	4.6684%	1,107,916	1,458,113	10,192,954		
16	10,192,954	315,864	4.8131%	1,142,248	1,458,113	9,050,706	1,275.60	377.59
17	9,050,706	280,468	4.9623%	1,177,645	1,458,113	7,873,061		
18	7,873,061	243,974	5.1160%	1,214,138	1,458,113	6,658,923		
19	6,658,923	206,350	5.2746%	1,251,763	1,458,113	5,407,161	1,441.22	211.97
20	5,407,161	167,560	5.4380%	1,290,553	1,458,113	4,116,608		
21	4,116,608	127,568	5.6065%	1,330,545	1,458,113	2,786,063		
22	2,786,063	86,336	5.7803%	1,371,777	1,458,113	1,414,286	1,531.93	121.26
23	1,414,286	43,827	5.9594%	1,414,286	1,458,113	-		

802.2217 392.6889

This debt schedule has been prepared using the adjusted debt schedule set out in NEPRA's determination no. NEPRA/RISA(Tariff)/TRF- 172/SHPL-20 11/19480-19482 dated 9 July 2020 (COD True-up). This debt schedule is without prejudice to the claim referred by SHPL to the LCIA against the reduction of USD 94 million (approx.) from SHPL's tariff.

$$245 = 7$$