

**BEFORE THE HARYANA ELECTRICITY  
REGULATORY COMMISSION  
PANCHKULA, HARYANA**

**FILING NO:**

**CASE NO.**

**(To be filled by the Office)**

**IN THE MATTER OF:**

Petition under PART VII Section 61, Section 62, Section 64 (5) and PART X Section 86 (1) (b) of the Electricity Act, 2003, read with the Haryana Electricity Regulatory Commission Regulations and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for the Determination of Tariff for Power supply from 36 MW (3 x 12 MW) Chanju-I Hydro Electric Project located on the Chanju Nallah in the Chamba district of Himachal Pradesh.

**AND**

**IN THE MATTER OF:**

**PETITIONER**

**M/s IA Hydro Energy Private Limited**

**Registered Office:** D-17, Sector-1, Lane-1, New Shimla,  
Himachal Pradesh -171009,

**Corporate Office:** Village: Borjhara, Urla-Guma Road, Raipur-  
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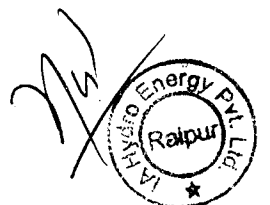
Phone No.: 0771 4288019/29/39, Mobile: +91 98264 22320.

**RESPONDENT**

Haryana Power Purchase Center, Sector -6, Panchkula (Haryana).

*Recd  
2  
13/2/19  
9/0*

**CEHPPC**

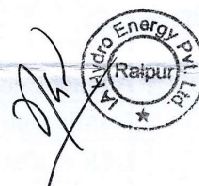


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| List of Abbreviations |   |
|-----------------------|---|
| Abbreviation          | Description   |
| AFC                   | Annual Fixed Cost                                     |
| APPC                  | Average Power Purchase Cost                           |
| APTEL                 | Appellate Tribunal for Electricity                    |
| ARR                   | Aggregate Revenue Requirement                         |
| CEA                   | Central Electricity Authority                         |
| CERC                  | Central Electricity Regulatory Commission             |
| COD                   | Date of Commercial Operation                          |
| CSPDCL                | Chhattisgarh State Power Distribution Company Limited |
| DOE                   | Directorate of Energy                                 |
| DPR                   | Detailed Project Report                               |
| FY                    | Financial year  |
| GoHP                  | Government of Himachal Pradesh                        |
| GoI                   | Government of India                                   |
| HEP                   | Hydro Electric Plant                                  |
| HERC                  | Haryana Electricity Regulatory Commission             |
| HPPC                  | Haryana Power Purchase Center                         |
| HPPTCL                | H.P. Power Transmission Corporation Limited           |
| HPSEB                 | Himachal Pradesh State Electricity Board              |
| IA                    | Implementation Agreement                              |
| IAHEPL                | IA Hydro Energy Private Limited                       |
| LADF                  | Local Area Development Fund                           |
| O&M                   | Operation and Maintenance                             |
| RoE                   | Return on Equity                                      |
| ROR                   | Run of River  |
| SBI                   | State Bank of India                                   |
| SCOD                  | Scheduled Commercial Operation Date                   |
| SIA                   | Supplementary Implementation Agreement                |
| SSIA                  | Second Supplementary Implementation Agreement         |



## CHAPTER 1 - INTRODUCTION

### Project Overview

- 1.1 IA Hydro Energy Private Limited (hereinafter referred to as “IAHEPL” or “Generator” or “Petitioner” or “Applicant”) is a Company incorporated under the Companies Act, 2013 (certificate of incorporation as Annexure 2).
- 1.2 IAHEPL is a “generating company” falling within the definition of PART I Section 2 (28) of the Electricity Act, 2003 (hereinafter referred to as the “Act”) and has developed, owns and operates 36 MW (3 x 12MW) Chanju-I Hydro Electric Project (HEP) located on the the Chanju Nallah in the Chamba district of Himachal Pradesh (hereinafter referred to as “Project”).
- 1.3 On 20.12.2007, an Memorandum of Understanding (MOU) was signed between M/s Indo Arya Central Transport Limited, having registered office Indo Arya House, 147, Transport Centre, Rohtak Road (Punjabi Bag Chowk), New Delhi 110035 and Government of Himachal Pradesh (GoHP) to carry out detailed investigations, techno-economic studies, submission of a Detailed Project Report (DPR) for the implementation of Chanju-I HEP for tentative capacity of 25 MW.
- 1.4 M/s Indo Arya Central Transport Limited upon carrying out investigation found that the capacity of the Project is more than what was tentatively estimated and submitted a DPR for a capacity of 36 MW on 04.07.2008. The copy of the DPR is attached as Annexure 11.
- 1.5 On 12.06.2009, an Implementation Agreement (IA) was executed between M/s Indo Arya Central Transport Limited and GoHP for the implementation of Chanju-I HEP with installed capacity of 36 MW. The IA is attached as Annexure 4.
- 1.6 The said IA shall remain in force for a period of 40 years from the date of Schedule Commercial Operation Date (COD) of the Chanju-I HEP after which the Project shall revert to GoHP free of cost.
- 1.7 The techno-economic clearance on the DPR was provided on 24.04.2010. Subsequently, environmental and forest clearance was received on April 2011 and June 2011, respectively.
- 1.8 Immediately after receiving all clearances, contract for the first civil work for the project was awarded on 23.07.2011 with Scheduled Commercial Operation Date (SCOD) on 22.01.2015, 42 months from the award of contract for first civil work. The plant achieved COD on 26.07.2017. The project commissioning was delayed due to various Force Majeure events beyond the control of the Petitioner such as geological surprise, adverse weather conditions and unavailability of transmission capacity in the network of State Transmission Utility to evacuate power. The detailed reasoning for the delays have been elaborated in Chapter 3 of this petition.
- 1.9 According to clause 5.30.4 of the IA, M/s Indo Arya Central Transport Limited is permitted to incorporate a Special Purpose Vehicle (SPV) for implementation of the Project with its Registered Office in Himachal Pradesh. It was agreed that all rights and obligations under the IA will be transferred to the SPV by entering into a Tripartite Agreement between the parent Company (M/s Indo Arya Central Transport Limited) and SPV and GoHP.
- 1.10 Accordingly, on 18.06.2010, a SPV, M/s I A Energy (hereinafter referred to as the “Partnership Firm”) with its office in D-17 Sector-1, Lane-1, New Shimla, Himachal Pradesh was registered under Partnership Act 1932. The partners included M/s Indo Arya Central Transport Limited held (51% share in profit & loss), Shri Bajrang Energy Private Limited (40% share) and Shri Bajrang Power & Ispat Limited (9% share). The Partnership Deed and the Supplementary Partnership Deed are attached as Annexure 5.



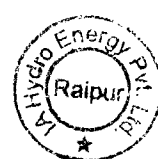
*[Handwritten Signature]*



- 1.11 On 12.08.2010, a Supplementary Implementation Agreement (SIA) was executed between M/s Indo Arya Central Transport Limited and GoHP, which amended relevant clauses of IA and allowed that the SPV can be a firm registered under the Partnership Act, 1932. The SIA is attached as Annexure 4.
- 1.12 Subsequently on 08.10.2010, a Tripartite Agreement was executed between M/s Indo Arya Central Transport Limited, M/s I A Energy and GoHP. In the Tripartite Agreement, it was agreed that M/s I A Energy will take over all the assets, responsibilities, obligations, rights, privileges, and benefits arising out of the Implementation Agreement dated 12.06.2009 and the Supplementary Implementation Agreement dated 12.08.2010. The Tripartite Agreement is attached as Annexure 6.
- 1.13 On 16.02.2017, the Reconstituted Partnership Deed was signed between parties wherein fixed capital of the partnership M/s I A Energy was increased to Rs 10 crore from Rs 10 lakh earlier, M/s Indo Arya Central Transport Limited retired from the partnership and new partners were introduced. Share of partners in profit & loss of M/s I A Energy is provided in the Reconstituted Partnership Deed, which is attached as Annexure 5.
- 1.14 Subsequently, partners of the M/s I A Energy had agreed and decided that all the members as defined by section 366 of Companies Act, 2013 should register a Company under Part I of the Companies Act, 2013 for carrying on and continuing the business of M/s I A Energy uninterrupted. It was further decided that all the assets of M/s I A Energy should vest in the Company from its incorporation, free from all claims by the partners of M/s I A Energy. Similarly, all liabilities, claims obligations and debts including taxes and other statutory liabilities of M/s I A Energy where determined or undetermined shall be assumed and borne by the Company.
- 1.15 In line with the above, IA Hydro Energy Private Limited was incorporated on 23.03.2017 under the Companies Act, 2013 with its registered office in D-17, Sector-1, Lane-1, New Shimla, Himachal Pradesh, India, 171009. The Certificate of Incorporation is attached as Annexure 2.
- 1.16 It is relevant to note that according to the letter no. HPDOE/CE (Energy)/Chanju-1 HEP/2017-2206-2213 dated 14.06.2017 of Directorate of Energy (DOE), GoHP, the Project is to provide 13.43% of the deliverable energy of the Project for the period starting from the date of synchronization of the first generating unit and extending up to 12 years from the date of Scheduled Commercial Operation Day (SCOD) of the Project. Thereafter, at 19.43% of Deliverable Energy of the Project for a period of next 18 years and at 31.43% of the Deliverable Energy for the balance agreement Period beyond 30 years. Refer to CHAPTER 2- INSTALLED CAPACITY AND SALEABLE DESIGN ENERGY for further details.

## Background

- 1.17 Upon commissioning the Project, on 29.06.2017 The Petitioner had signed a Power Purchase Agreement (PPA) with the Chhattisgarh State Power Distribution Company Limited (CSPDCL). The PPA was approved by the Hon'ble Chhattisgarh State Electricity Regulatory Commission (CSERC) by order dated 06.03.2018.
- 1.18 Aggrieved by the order of the Hon'ble CSERC dated 06.03.2018, the Petitioner submitted a review petition and prayed to allow cancellation of the PPA with CSPDCL dated 29.06.2017 and allow discontinuation of supply of power to CSPDCL with effect from 00.00 hrs of 01-06-2018.
- 1.19 Hon'ble CSERC in its order dated 18.05.2018 allowed the Petitioner to exist the PPA with CSPDCL dated 29.06.2017 without liability on either side and discontinuation of power supply by the Petitioner to CSPDCL with effect from 01.06.2018.



- 1.20 Earlier, on 08.04.2016, HPPC had applied to Hon'ble Haryana Electricity Regulatory Commission under Section 86(1)(b) of the Electricity Act, 2003 for the approval of the Hon'ble HERC for procuring power from the Project. Hon'ble HERC in its order dated 10.04.2018 (Case No. HERC/PRO-15 of 2016) approved HPPC to purchase power from the Project.
- 1.21 Upon receiving the order from Hon'ble CSERC dated 18.05.2018 for termination of PPA with CSPDCL, the Petitioner approached Haryana Power Purchase Centre (HPPC) for supply of power. HPPC and the Petitioner signed PPA dated 21.05.2018 and submitted to Hon'ble HERC for approval. HPPC issued Letter of Intent to the Petitioner on 23.05.2018 and directed to start scheduling power citing the Hon'ble HERC order dated 10.04.2018. The relevant excerpt from the order dated 10.04.2018 is as follows:
- “ ....  
As tariff determination is a long exercise including public proceedings and the fact that the project has already attained CoD the Commission, as an interim measure, approves that in case energy drawl is resorted to from this source prior to determination of final tariff by the Commission the same may be paid for the APPC subject to adjustments vis-à-vis the final tariff as the case may be.”
- 1.22 In view of the above, the Petitioner has started supplying power to HPPC starting 01.06.2018.
- 1.23 Pursuant to the enactment of the Electricity Act, 2003, a generating company intending to sell power to the Distribution Licensee is required to file an application for the determination of tariff to the appropriate Commission. As the Petitioner intends to sell power to the distribution utilities of Haryana and in accordance with Section 64(5) of the Act, the appropriate Commission in this case is the Hon'ble Haryana Electricity Regulatory Commission (“HERC” or “Commission”).
- 1.24 It is further submitted that the proposed power procurement from Hydro Electric Project is not covered under compulsory competitive bidding requirement as mandated by the Tariff Policy dated 28<sup>th</sup> January, 2016 notified by the Ministry of Power, Government of India, since the National Tariff Policy, 2016 exempts Hydro Power projects from competitive bidding and rather the same is covered under clause no. 5.6 of National Tariff Policy, 2016. Clause no. 5.6 of the policy bestows an option on the project developers to get the tariff determined by the Appropriate Commission for the power to be sold through long term PPA on the basis of cost plus under Section 62 of the Act.
- 1.25 Accordingly, Hon'ble HERC, vide its Order dated 10.04.2018 in Case No. HERC/ PRO-15 of 2016 approved the procurement of power from the Project by Haryana Power Purchase Center (HPPC) and directed the Petitioner to file a tariff petition for determination of generation tariff. Para 10(Page No. 43) of the Order is reproduced below:

“.....Taking all the above discussions into consideration, the Commission approve procurement of power from the Chanju Hydro Electric Project , throughout the year, at the tariff to be determined by the Commission on separate petition to be filed by the generator with Rs. 4.50/kwh being the ceiling tariff.”

- 1.26 In view of the above background, the Petitioner is filing the Petition for approval of the capital cost and determination of generation tariff of its 36 MW Chanju-I HEP before the Hon'ble Commission.

### Regulatory Provisions for Tariff Determination

- 1.27 The Hon'ble HERC had notified the HERC (Terms and Conditions for Determination of Tariff for Generation, Transmission, Wheeling and Distribution & Retail Supply under Multi Year Tariff Framework) Regulations, 2012 (or hereafter referred as “HERC Tariff Regulations 2012”) on 05.12.2012.



1.28 It is pertinent to note that the first Control period as per HERC Tariff Regulations 2012 was from FY 2014-15 to 2016-17. The Hon'ble Commission, vide its order dated 07.11.2016, had extended the Control period until FY 2017-18.

1.29 Further, the Hon'ble Commission, vide its order dated 31.10.2018 had extended the Control period until FY 2019-20. In view of the extension of the Control period, the instant Petition is being filed in accordance with HERC Tariff Regulations 2012.

1.30 As per Section 61 of the Electricity Act, 2003,

*"The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-*

*a) the principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;*

*..."*

*[Emphasis Added]*

1.31 The Petitioner would also like to bring to the notice of the Hon'ble Commission the following judgments passed by the Hon'ble APTEL:

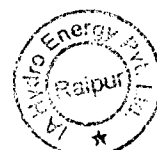
i. In the Lanco Amarkantak Power Limited vs Haryana Electricity Regulatory Commission, in Appeal No. 65 of 2013 dated 3rd Jan 2014, the Hon'ble APTEL ruled that

*"...where no specific operational or financial norms have been specified in the State Commission's Tariff Regulations, the provisions of Central Commission's Regulations of 2009 would be considered for such parameters".*

ii. In the Haryana Power Generation Corporation Ltd vs Haryana Electricity Regulatory Commission, in Appeal No. 131 of 2011 dated 1st March 2012, the judgement stated that

*"Section 61 of the Act mandates the State Commissions to frame Regulations fixing terms and conditions for determination of tariff and in doing so it is to be guided by the principles and methodology specified by the Central Commission, the National Electricity Policy and Tariff Policy etc. Once the State Commission has framed the Regulations, it shall determine tariff in accordance with its own Regulations".*

1.32 Hence, in view of the above, it is submitted that the instant Petition reference to the norms and provisions specified in the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 has also been appropriately referred wherever no specific operational or financial norms have been specified in the HERC Tariff Regulations 2012.



## CHAPTER 2- INSTALLED CAPACITY AND SALEABLE DESIGN ENERGY

### Installed Capacity

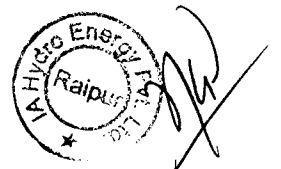
- 2.1 The Chanju-I HEP has three (3) units each of capacity 12 MW with a total installed capacity of 36 MW having provision of 117% continuous over rating as per design, however 110% continuous over rating consider while approval of TEC by GoHP.

### Design Energy

- 2.2 The approved Design Energy of Chanju-I HEP is 157.84 MU. It is pertinent to mention that the water availability is excellent, and the plant is capable of providing load factor of 50.05%.

Table 1: Month-wise design energy of Chanju-I HEP

| Month | 10 Daily |     | Design Energy (MUs) |
|-------|----------|-----|---------------------|
| Jun   | 10       | I   | 6.39                |
|       | 10       | II  | 7.62                |
|       | 10       | III | 8.10                |
| Jul   | 10       | I   | 8.21                |
|       | 10       | II  | 8.21                |
|       | 11       | III | 9.03                |
| Aug   | 10       | I   | 8.21                |
|       | 10       | II  | 8.21                |
|       | 11       | III | 8.66                |
| Sep   | 10       | I   | 7.54                |
|       | 10       | II  | 5.81                |
|       | 10       | III | 4.66                |
| Oct   | 10       | I   | 3.76                |
|       | 10       | II  | 3.25                |
|       | 11       | III | 3.08                |
| Nov   | 10       | I   | 2.35                |
|       | 10       | II  | 2.14                |
|       | 10       | III | 1.95                |
| Dec   | 10       | I   | 1.82                |
|       | 10       | II  | 1.73                |
|       | 11       | III | 1.84                |
| Jan   | 10       | I   | 1.67                |
|       | 10       | II  | 1.60                |
|       | 11       | III | 1.69                |
| Feb   | 10       | I   | 1.70                |
|       | 10       | II  | 1.86                |
|       | 8        | III | 2.22                |
| Mar   | 10       | I   | 2.94                |
|       | 10       | II  | 3.07                |
|       | 11       | III | 3.41                |
| Apr   | 10       | I   | 3.01                |
|       | 10       | II  | 3.28                |
|       | 10       | III | 4.17                |
| May   | 10       | I   | 4.89                |
|       | 10       | II  | 4.58                |





| Month      | 10 Daily | Design Energy (MUs) |
|------------|----------|---------------------|
|            | 11       | III                 |
|            |          | 5.18                |
| Total (MU) |          | 157.84              |

### Free Power to Government of Himachal Pradesh (GoHP)

- 2.3 As per clause 5.4.1 of the IA, the royalty in the shape of free power shall be levied at 15 % of the deliverable energy of the Project for the period starting from the date of synchronization of the first generating unit and extending up to 12 years from the date of Scheduled Commercial Operation Day (SCOD) of the Project. Thereafter, at 21% of Deliverable Energy of the Project for a period of next 18 years and at 33% of the Deliverable Energy for the balance agreement Period beyond 30 years.
- 2.4 Subsequent to this, according to Notification dated 07-07-2012 Policy of Government of Himachal Pradesh, in the Second Supplementary Implementation Agreement (SSIA), the free power to be provided to GoHP was updated. According to SSIA, 12 % of the deliverable energy of the Project for the period starting from the date of synchronization of the first generating unit and extending up to 12 years from the date of Scheduled Commercial Operation Day (SCOD) of the Project. Thereafter, at 18% of Deliverable Energy of the Project for a period of next 18 years and at 30% of the Deliverable Energy for the balance agreement Period beyond 30 years.
- 2.5 Further it was stipulated in the SSIA that additional free power at 3% of the deliverable energy corresponding to the increased capacity beyond the allotted capacity in lieu of enhancement of capacity from 25 MW to 36 MW. According to methodology depicted in the Notification No. MPP-F(10)-24/2011 dated 07.07.2012 of Department of MPP & Power of GoHP, additional free power on the total deliverable energy will be 0.43%.
- 2.6 Moreover, additional free power at 1% of the deliverable energy is to be provided towards Local Area Development Fund (LADF).
- 2.7 In line with above mentioned requirements, Directorate of Energy (DOE), GoHP on 14.06.2017 vide its letter no. HPDOE/CE (Energy)/Chanju-I HEP/2017-2206-2213 stipulated consolidated requirement of free power to be delivered by the Project. Following table summarises the requirement of free power requirement of the Project. The said letter is attached in Annexure 7.

Table 2: Percentage of deliverable energy to be provided to GoHP by the Project

| Time band      | Free Power to be provided as per Policy of GoHP | Free power to be provided for increase in capacity | Free power to be provided on account of LADF | Total free power to be provided |
|----------------|---|--|--|---------------------------------|
| First 12 years | 12%   | 0.43%  | 1%   | 13.43%                          |
| Next 18 years  | 18%   | 0.43%  | 1%   | 19.43%                          |
| Last 10 years  | 30%   | 0.43%  | 1%   | 31.43%                          |

### Saleable Design Energy

- 2.8 Although, the free power to be provided GoHP ranges from 13.43% to 31.43% over the life of the projects, it is submitted that in accordance to National Tariff Policy, 2016, Saleable Design Energy of the Chanju-I HEP, based on which the tariff shall be computed, is being arrived at after deducting the auxiliary consumption and 13% free power (12% on account of royalty and 1% on account of LADA) to GoHP.



2.9 In accordance with section 37 (6) (a) (ii), auxiliary consumption for Chanju-I HEP which is surface hydro generation station with static excitation system, is, 1%.

2.10 The computation of saleable design energy is provided in the table below:

Table 3: Saleable design energy (in MU) of Chanju-I HEP

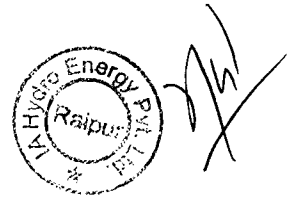
| Sl. No. | Particulars                       | 01.06.2018 to 31.03.2019 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | ... | 01.04.2053 to 31.05.2053 |
|---------|-----------------------------------|--------------------------|---------|---------|---------|---------|---------|-----|--------------------------|
| 1.      | Design Energy (MU)                | 132.73                   | 157.84  | 157.84  | 157.84  | 157.84  | 157.84  | ... | 25.11                    |
| 2.      | Less: Aux. Consumption (1%)       | 1.33                     | 1.58    | 1.58    | 1.58    | 1.58    | 1.58    | ... | 0.25                     |
| 3.      | Net Energy after Aux. consumption | 131.40                   | 156.26  | 156.26  | 156.26  | 156.26  | 156.26  | ... | 24.86                    |
| 4.      | Less: Free Power to GoHP (13%)    | 17.08                    | 20.31   | 20.31   | 20.31   | 20.31   | 20.31   | ... | 3.23                     |
| 5.      | Saleable Design Energy (MU)       | 114.32                   | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | ... | 21.63                    |

### Evacuation of power

2.11 In order to facilitate evacuation of power, the Petitioner has constructed about 6 km long 132 kV double circuit transmission line from the Chanju-I substation to the LILO point of 132 kV Kurthala Bathri double circuit transmission line of H.P. Power Transmission Corporation Limited at Nakrod.

2.12 Further, the 132 kV single circuit Bathri Jassure transmission line is linked to the 132/220 kV substation at Jassure of STU's.

2.13 The interconnection agreement between the H.P. Power Transmission Corporation Limited, IA Energy and the Himachal Pradesh State Electricity Board was signed on 08.10.2015 and the same is attached as Annexure 8.



## CHAPTER 3 – CAPITAL COST OF THE PROJECT

- 3.1 The Unit-II of the Project achieved COD as on 18.02.2017 followed by Unit-I on 23.02.2017 and Unit-III on 26.07.2017. Letters from DOE, GoHP declaring CODs are attached as Annexure 9.
- 3.2 The final project cost upon completion (3<sup>rd</sup> COD on 26.07.2017) was Rs.630.64 Crore. The major heads of capital expenditure are enumerated below:

Table 4: Capital cost of the project as on respective CODs (in Rs. Crore)

| Sl. No. | Particulars   | As on 1st COD | As on 2nd COD | As on 3rd COD |
|---------|---|---------------|---------------|---------------|
| 1       | Land – Freehold   | 1.91          | 1.91          | 0.77          |
| 2       | Site development  | 0.00          | 0.00          | 1.15          |
| 3       | Land – Leasehold  | 10.38         | 10.38         | 10.38         |
| 4       | Roads And Bridges   | 12.57         | 12.57         | 12.57         |
| 5       | Buildings   | 3.10          | 3.10          | 3.10          |
| 6       | Hydraulic Works (Dams, Water Conductor system, Hydro mechanical gates, tunnels) | 319.98        | 319.98        | 327.59        |
| 7       | Hydro Mechanical Equipment  | 28.76         | 28.76         | 28.91         |
| 8       | Generating Plant And Machinery  | 38.77         | 56.80         | 74.48         |
| 9       | Civil Construction power house  | 135.17        | 135.17        | 135.47        |
| 10      | Plant & Machinery - Transmission Line   | 13.19         | 13.19         | 13.19         |
| 11      | Plant And Machinery - Others  | 18.38         | 18.38         | 17.48         |
| 12      | Water Supply System/Drainage And Sewerage                                       | 0.02          | 0.02          | 0.02          |
| 13      | Electrical Installations  | 3.76          | 3.76          | 3.71          |
| 14      | Vehicles - Four Vehicle   | 0.98          | 0.98          | 0.98          |
| 15      | Vehicles - Heavy Vehicle  | 0.59          | 0.59          | 0.29          |
| 16      | Furniture And Fixture   | 0.10          | 0.10          | 0.10          |
| 17      | Computers   | 0.19          | 0.19          | 0.19          |
| 18      | Office Equipment  | 0.24          | 0.24          | 0.25          |
| 19      | Total Capital Cost  | 588.11        | 606.14        | 630.64        |

- 3.3 The auditor certificate in support of the capital cost as on COD is attached as Annexure 10.
- 3.4 The Project was conceived with a SCOD on 22.01.2015, 42 months from the award of the first civil work on 23.07.2011. The plant achieved COD on 26.07.2017. The initial project cost was envisaged as Rs. 295.09 Crores at the time of award of contracts. The completion cost of the project at the time of COD was Rs. 630.64 Crores.
- 3.5 The Petitioner submits that the delay in project implementation and increase in project cost is due to various Force Majeure events beyond the control of the Petitioner, as described in the following paragraphs.
- 3.6 This Detailed Project Report for the Project was submitted to the GoHP in July 2008. As per the DPR, the construction of the infrastructure and on main project components was scheduled to start in May 2009 and October 2009 respectively and the project was planned to be commissioned in December 2012.
- 3.7 Although the DPR was submitted to the approving authority on 04.07.2008 but the approval was accorded only in April 2010. Further, the environmental clearance and forest land diversion were applied before the concerned authorities in February 2008 and



May 2009 respectively, but these clearances were accorded after 2-3 years in April 2011 and June 2011, respectively.

- 3.8 It is to be brought to kind notice of the Hon'ble Commission that while there was delay in obtaining requisite clearances and approval which was uncontrollable, once all the clearances was received by July, 2011, the civil contract was awarded in that month itself (on 23.07.2011). Therefore, Petitioner has acted promptly in order to contain any further delay in project implementation.
- 3.9 During the construction phase too, many uncontrollable geological and weather related factors caused further time overrun which is described here.
- 3.10 The excavation of Barrage complex and Intake was started during February 2012 and it continued in next working season. In the month of February, 2013 there was unprecedented heavy rains in the project area. During the first week of April 2013 when the excavation of barrage and intake area was nearing completion, a massive landslide was triggered on the right bank. Huge quantum of slide debris was accumulated on the barrage foundation area, which also buried the Intakes. To further progress on these structures it became necessary not only remove the slide debris but also re-designing of slope stability measures.
- 3.11 Since the landslide washed the excavated road near the Intake and Barrage axis area away, the road had to be made up by backfilling the concrete or concrete cladding.
- 3.12 As the excavation above the Power House area progressed, thickness of overburden was found to be much more than anticipated. In view of presence of bedrock at deeper depth, design changes were made to realign the Head Race Tunnel (HRT) and convert surface penstock into the underground vertical and horizontal pressure shaft.
- 3.13 The over breaks in the underground works were estimated to be 5% of the actual tunnel excavation quantity during DPR stage. However during actual tunnelling, huge over breaks were found because of varied geological condition. The following are the reasons attributable to the increase in percentage of over break: (a) Poor rock conditions in comparison to estimation during DPR were encountered; (b) un-favourable orientation of geological structure than as anticipated in the DPR; (c) many Shear seams were encountered during excavation which was not envisaged during the DPR; and (d) many wedge failure or rock failure were recorded resulting in more over break. Further, during the excavation of underground works it was felt that for convenience of construction, the size of the construction adits were required to be increased to facilitate faster construction. These factors not only resulted in additional quantity of underground excavation but also required higher rock supports than anticipated/designed. The over break voids were required to be back filled with concrete.
- 3.14 In month of March 2013, heavy rainfall in the project area caused failure of the excavated back slope of the surface Power House pit. Failure of the back slope caused the slope material and overburden material resting above it to slide into the Power House pit. Carrying out further excavation work in the pit was difficult without further treatment of the slope. Therefore, stability analysis has to be carried out to undertake the slope stabilization work in the powerhouse complex. This resulted into slight adjustment in the layout of Power House, switchyard and tailrace.
- 3.15 Due to the existence of firm rock at deeper depth than anticipated, comparatively heavier retaining structure in the switch yard portion were also required and accordingly had to be re-designed.
- 3.16 As per the DPR, the Head Race Tunnel was aligned flat and proposed to be opened after a length of approximately 1,216 meter after which the valve chamber was proposed. The tail end portion of the underground tunnel was proposed to be steel lined in a length of about 190 meter. An Open Penstock of 2.3m diameter for a length of 124 meter and 2-



meter diameter for a length of 21 meter along the hill was proposed after which it was proposed to trifurcate and reduce to 1.2 meter diameter in a length of about 78m. However, the Petitioner has changed to underground Penstock having diameter 2.3 M, length including Y piece junction 1 & 2 is 140.40 M, unit penstock diameter is remain same and length of penstock is 32.3 M, 28.5 M & 38.98 M.

- 3.17 However, when the construction of tunnel from the outlet portal area before proposed valve chamber was started, the rock could not be intercepted even going inside to the extent of 30-40 meter. Thus, as per the consultant's advice seismic refraction test was conducted to ascertain the depth of availability of rock. This test ruled out encountering of rock even up to a depth of about 150 meter. Technical consultant thus suggested realigning the tunnel at a much lower level by providing two shafts to locate them in rock with sufficient rock cover after studying the exposure of the rock in this area.
- 3.18 Due to increase of head at this realigned patch of Head Race Tunnel and relocating of valve chamber at more than double the distance envisaged earlier, the design considerations required more than 692 meter of tunnel up to the location of the valve chamber to be steel lined. This proposal required extra 498.24 MT of steel.
- 3.19 Further, after commissioning of the two units on 18.02.2017 and 23.02.2017 respectively, the Petitioner was fully prepared for the commissioning of the third unit, but the same could not be achieved, as there was no capacity of the transmission system to evacuate incremental power from the third unit. Officials of Himachal Pradesh State Electricity Board (HPSEB) and H.P. Power Transmission Corporation Limited (HPPTCL) were fully aware of the situation and it was only on 18.07.2017 that HPPTCL allowed testing of the third unit when other two units were shut down. Without any delay on part of the Petitioner, testing was carried out and third unit as well as the Project was commissioned on 25.07.2017, within eight days of obtaining clearance from HPPTCL. The Petitioner would like to highlight that this delay was not on account for the Petitioner and had there been adequate capacity in the transmission system of HPPTCL, the Project could have been commissioned by end of February 2017.
- 3.20 It is to be noted here that the initial delays in getting various clearance and subsequent delay in project construction, because of uncontrollable and force majeure reasons like geological surprises, landslides, change in Tunnelling Methodology, jet grouting, additional work in power house and Barrage area, additional slope stabilization in surge shaft area, change in alignment of pressure shaft, extremely poor geology encountered in the Head race Tunnel etc, not only resulted in time overrun but cost overrun as well, because of following reasons:
- a) Increase in cost of civil works due to geological surprises during excavation above Power House, re-designing of Penstock, realignment of Head Race Tunnel (HRT), slope stabilization works, and removal of debris because of landslide.
  - b) Increase in the material cost due to increase in cement and steel quantities owing to accommodates changed due to unexpected geology, change in design, re-construction of road and other components which got washed away in heavy rain.
  - c) Increase in cost of Electro-Mechanical and Hydro-Mechanical works due to contract escalation owing to increase in completion period of the project.
  - d) Increase in labour charges owing to increase in completion period of the project.
  - e) Increase in Interest during construction (IDC), Incidental Expenditure during Construction (IEDC) owing to increase in completion period of the project.
- 3.21 It is submitted to the Hon'ble Commission that the reasons for delay in project implementation were due to uncontrollable parameters over which the Petitioner had no control. In fact more or less all hydropower projects faces similar challenges and



therefore, cost and time overrun owing to geological surprises and adverse weather conditions are not unprecedented in the country.

- 3.22 Realizing that the delay in the project commissioning is due to uncontrollable factor, DoE, GoHP vide its letter No. HPDOE/CE (Energy)/Chanju-I/2018-6004-95 (attached in Annexure 3) has condoned the delay of 25 months and 29 days against actual delay of 31 months and 14 days. Accordingly, the revised Scheduled Commercial Operation Date (SCOD) is set on 10.02.2017. This revised SCOD is very close to the actual COD of the second unit achieved on 18.02.2017. The Petitioner has further represented to the DOE, GoHP that the delay between COD of second unit on 18.02.2017 to the plant COD of 26.07.2017 is entirely because of lack of evacuation capacity on part of HPPTCL. The Petitioner, therefore, expects that the remaining period of delay will also be condoned by DOE, GoHP in view of the delay being on account of uncontrollable factor.
- 3.23 Accordingly, the petitioner requests the Hon'ble Commission to approve the capital cost and the various components as detailed in this section.





## CHAPTER 4 - ANNUAL FIXED CHARGES FOR THE PPA TENURE

4.1 Regulation 15.3 of the HERC Tariff Regulations 2012 has prescribed that the annual fixed cost (AFC) of a hydro generation company consists of the following elements:

- (a) Return on Equity
- (b) Interest and financing charges on loan capital
- (c) Interest on working capital
- (d) Depreciation
- (e) Operations and Maintenance expenses
- (f) Foreign exchange rate variation, if any
- (g) All statutory levies and taxes, if any, excluding taxes on income

### Additional capitalization for the period FY 2018-19 and FY 2019-20

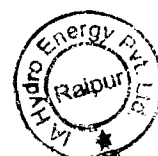
4.2 Regulation 18.5.1 of the HERC Tariff Regulations 2012 states that:

*“The Commission may consider allowing, subject to prudence check, any additional capital expenditure incurred or projected to be incurred, after the commercial operation date of a project and up to the cutoff date, on the following provided the same was part of the original scope of work of the project: capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

- (a) *Deferred liabilities without any carrying cost;*
- (b) *Works deferred for execution without any escalation;*
- (c) *Procurement of initial capital spares in the original scope of work without any escalation, subject to ceiling specified above;*
- (d) *Foreign exchange rate variation;*
- (e) *Liabilities to meet award of arbitration provided that it is not on account of any fault of the generation company or the licensee, as the case may be;*
- (f) *Liabilities on account of compliance of the order or decree of a court;*
- (g) *Liabilities on account of change in law;*

*Provided that details of the works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and works deferred for execution shall be submitted along with the application for determination of tariff after the date of commercial operation of the project;*

4.3 The Petitioner has planned additional capitalisation across freehold land, building, civil work, hydraulic works, plant & machinery, and office equipment. Details for the same are furnished below:



A handwritten signature in black ink, consisting of stylized initials and a long horizontal stroke.

Table 5 Additional Capitalization (in Rs Cr)

| Sl. No. | Particulars  | 2017-18<br>(post 3rd<br>COD) | 2018-19 | 2019-20 |
|---------|--|------------------------------|---------|---------|
| 1       | Land – Freehold  | 0.01                         |         |         |
| 2       | Land – Leasehold   |                              |         |         |
| 3       | Roads And Bridges  |                              | 1.00    | 1.00    |
| 4       | Buildings  |                              | 1.50    | 1.50    |
| 5       | Hydraulic Works (Dams, Water Conductor system,<br>Hydro mechanical gates, tunnels) | 1.52                         | 1.00    | 1.00    |
| 6       | Hydro Mechanical Equipment   |                              | 0.50    | 0.50    |
| 7       | Generating Plant And Machinery   |                              | 0.50    | 0.50    |
| 8       | Civil Construction power house   |                              |         |         |
| 9       | Plant & Machinery - Transmission Line  |                              |         |         |
| 10      | Plant And Machinery - Others   | 0.21                         | 0.50    | 0.50    |
| 11      | Water Supply System/Drainage And Sewerage  |                              |         |         |
| 12      | Electrical Installations   |                              |         |         |
| 13      | Vehicles - Four Vehicle  |                              |         |         |
| 14      | Vehicles - Heavy Vehicle   |                              |         |         |
| 15      | Furniture And Fixture  | 0.0021                       |         |         |
| 16      | Computers  |                              |         |         |
| 17      | Office Equipment   | 0.01                         |         |         |
| 18      | Total Additional Capitalization  | 1.76                         | 5.00    | 5.00    |

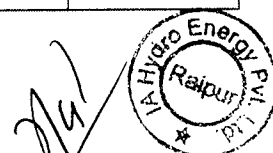
## Capitalization

4.4 Capital expenditure, undischarged liabilities and capitalization of capital expenditure is summarised in the following table.

Table 6 Capital expenditure, undischarged liabilities and capitalization (in Rs Cr)

| S. No. | Particulars                | 18-Feb-17<br>to<br>22-Feb-17 | 23-Feb-17<br>to<br>31-Mar-17 | 01-Apr-17<br>to<br>25-Jul-17 | 26-Jul-17<br>to<br>31-Mar-18 | 01-Apr-18<br>to<br>31-May-18 |
|--------|----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 1      | O/B of Capital Expenditure | 588.11                       | 606.14                       | 613.12                       | 630.64                       | 629.57                       |
| 2      | Addition                   | 18.02                        | 7.13                         | 19.79                        | 1.75                         | 0.001                        |
| 3      | Deletion                   | 0.00                         | -0.15                        | -2.27                        | -2.81                        | -0.39                        |
| 4      | C/B of Capital Expenditure | 606.14                       | 613.12                       | 630.64                       | 629.57                       | 629.18                       |
| 5      | Undischarged liability     | 27.67                        | 25.14                        | 15.62                        | 12.36                        | 11.34                        |
| 6      | Capitalized cost           | 578.47                       | 587.98                       | 615.02                       | 617.21                       | 617.84                       |

| S. No. | Particulars                | 01-Jun-18<br>to<br>31-Mar-19 | 2019-20 | 2020-21 | ... | 01-Apr-23<br>to<br>31-May-23 |
|--------|----------------------------|------------------------------|---------|---------|-----|------------------------------|
| 1      | O/B of Capital Expenditure | 629.18                       | 634.18  | 639.18  | ... | 639.18                       |
| 2      | Addition                   | 5.00                         | 5.00    | 0.00    | ... | 0.00                         |
| 3      | Deletion                   | 0.00                         | 0.00    | 0.00    | ... | 0.00                         |
| 4      | C/B of Capital Expenditure | 634.18                       | 639.18  | 639.18  | ... | 639.18                       |
| 5      | Undischarged liability     | 6.84                         | 0.00    | 0.00    | ... | 0.00                         |
| 6      | Capitalized cost           | 627.34                       | 639.18  | 639.18  | ... | 639.18                       |



## Debt and Equity funding of the Hydro Generation Project

4.5 Regulation 19.2 of the HERC Tariff Regulations 2012 states:

*“New projects - For new projects commissioned or whose capacity is expanded on or after 1st April 2012:*

- (a) *A Normative debt-equity ratio of 70:30 shall be considered for the purpose of determination of Tariff;*
- (b) *In case the actual equity employed is in excess of 30%, the amount of equity for the purpose of tariff determination shall be limited to 30%, and the balance amount shall be considered as normative loan;*
- (c) *In case the actual equity employed is less than 30%, then the actual debt-equity ratio, subject to lower limit as per company law, shall be considered;*
- (d) *The premium, if any, raised by the generating company or the licensee while issuing share capital and investment of internal accruals created out of free reserve, shall also be reckoned as paid up capital for the purpose of computing return on equity subject to the normative debt equity ratio of 70:30, provided such premium amount and internal accruals are actually utilized for meeting capital expenditure and form part of the approved financial package. For the purposes of computation of return, the portion of free reserves utilized for meeting the capital expenditure shall be considered from the date the asset created is productively deployed in the business.*

4.6 Debt equity position of the project as on respective CODs are provided in the following table.

Table 7: Actual debt and equity as on CODs

| S. No. | Particulars            | 1st COD           |       | 2nd COD           |       | 3rd COD           |       |
|--------|------------------------|-------------------|-------|-------------------|-------|-------------------|-------|
|        |                        | Amount (Rs crore) | Share | Amount (Rs crore) | Share | Amount (Rs crore) | Share |
| 1      | Capital cost           | 588.11            |       | 606.14            |       | 630.64            |       |
| 2      | Undischarged liability | 27.33             |       | 27.67             |       | 15.62             |       |
| 3      | Capitalized cost       | 560.78            |       | 578.47            |       | 615.02            |       |
| 4      | Debt                   | 551.49            | 98.3% | 569.18            | 98.4% | 576.46            | 93.7% |
| 5      | Equity                 | 9.29              | 1.7%  | 9.29              | 1.6%  | 38.56             | 6.3%  |
| 6      | Total                  | 560.78            | 100%  | 578.47            | 100%  | 615.02            | 100%  |

### Return on Equity

4.7 As per Regulation 20.1 of the HERC Tariff Regulations 2012, return on equity shall be computed on a pre-tax basis at the base rate of 14%. The pre-tax base rate is to be grossed up by the rate of tax applicable to the Petitioner.

4.8 Total MAT rate has been considered as 21.55% (18.5% MAT + 12% surcharge and 4% cess on that) and hence RoE has been grossed up by the MAT rate. Thus, the effective rate of RoE works out to 17.85% for first 10 years of operations. Beyond that, corporate tax rate of 29.12% (25% Corporate Tax + 12% surcharge and 4% cess on that) is considered, thus, the effective rate of RoE works out to 19.75%.

4.9 The calculation for Return on Equity based on the aforementioned principles is summarized in the table below.

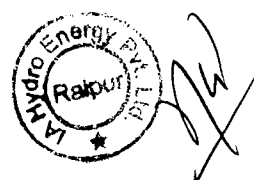


Table 8: Return on Equity (Rs Cr)

| S. No. | Particulars        | 18-Feb-17 to 22-Feb-17 | 23-Feb-17 to 31-Mar-17 | 01-Apr-17 to 25-Jul-17 | 26-Jul-17 to 31-Mar-18 | 01-Apr-18 to 31-May-18 | 01-Jun-18 to 31-Mar-19 |
|--------|--------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1      | Opening equity     | 9.29                   | 9.29                   | 9.29                   | 38.56                  | 38.38                  | 39.29                  |
| 2      | Addition           | -                      | -                      | 29.31                  | -                      | 0.93                   | 9.50                   |
| 3      | Deletion*          | -                      | (0.002)                | (0.04)                 | (0.18)                 | (0.02)                 | -                      |
| 4      | Closing equity     | 9.29                   | 9.29                   | 38.56                  | 38.38                  | 39.29                  | 48.79                  |
| 5      | Average equity     | 9.29                   | 9.29                   | 23.92                  | 38.47                  | 38.83                  | 44.04                  |
| 6      | Pretax rate of RoE | 17.85%                 | 17.85%                 | 17.85%                 | 17.85%                 | 17.85%                 | 17.85%                 |
| 7      | RoE                | 0.02                   | 0.17                   | 1.36                   | 4.68                   | 1.16                   | 6.55                   |

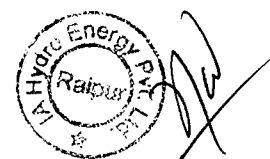
| S. No. | Particulars        | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
|--------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Opening equity     | 48.79   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 2      | Addition           | 11.84   | -       | -       | -       | -       | -       | -       | -       | -       |
| 3      | Deletion*          | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 4      | Closing equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 5      | Average equity     | 54.71   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 6      | Pretax rate of RoE | 17.85%  | 17.85%  | 17.85%  | 17.85%  | 17.85%  | 17.85%  | 17.85%  | 17.85%  | 19.75%  |
| 7      | RoE                | 9.76    | 10.82   | 10.82   | 10.82   | 10.82   | 10.82   | 10.82   | 10.82   | 11.97   |

| S. No. | Particulars        | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 | 2034-35 | 2035-36 | 2036-37 |
|--------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Opening equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 2      | Addition           | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 3      | Deletion*          | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 4      | Closing equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 5      | Average equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 6      | Pretax rate of RoE | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  |
| 7      | RoE                | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   |

| S. No. | Particulars        | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 | 2042-43 | 2043-44 | 2044-45 | 2045-46 |
|--------|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Opening equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 2      | Addition           | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 3      | Deletion*          | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 4      | Closing equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 5      | Average equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   |
| 6      | Pretax rate of RoE | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  |
| 7      | RoE                | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   |

| S. No. | Particulars        | 2046-47 | 2047-48 | 2048-49 | 2049-50 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|--------|--------------------|---------|---------|---------|---------|---------|---------|---------|--------------------------|
| 1      | Opening equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63                    |
| 2      | Addition           | -       | -       | -       | -       | -       | -       | -       | -                        |
| 3      | Deletion*          | -       | -       | -       | -       | -       | -       | -       | -                        |
| 4      | Closing equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63                    |
| 5      | Average equity     | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63   | 60.63                    |
| 6      | Pretax rate of RoE | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%  | 19.75%                   |
| 7      | RoE                | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 2.00                     |

\* On account of deletion of asset



## Interest on Loan

4.10 For computing the Annual Fixed Charges, the Petitioner has considered debt in accordance with Regulation 19.2 of the HERC Tariff Regulations 2012.

*“19.2 New projects - For new projects commissioned or whose capacity is expanded on or after 1st April 2012:*

*(a) A Normative debt-equity ratio of 70:30 shall be considered for the purpose of determination of Tariff;*

*(b) In case the actual equity employed is in excess of 30%, the amount of equity for the purpose of tariff determination shall be limited to 30%, and the balance amount shall be considered as normative loan;*

*(c) In case the actual equity employed is less than 30%, then the actual debt-equity ratio, subject to lower limit as per company law, shall be considered;*

*(d) The premium, if any, raised by the generating company or the licensee while issuing share capital and investment of internal accruals created out of free reserve, shall also be reckoned as paid up capital for the purpose of computing return on equity subject to the normative debt equity ratio of 70:30, provided such premium amount and internal accruals are actually utilized for meeting capital expenditure and form part of the approved financial package. For the purposes of computation of return, the portion of free reserves utilized for meeting the capital expenditure shall be considered from the date the asset created is productively deployed in the business.”*

4.11 Further, Regulation 21.1 of the HERC Tariff Regulations 2012 states the following:

*“Interest on loan capital shall be computed loan-wise for existing loans arrived in a manner specified in Regulation 19 and shall be as per the rates approved by the Commission.*

*(ii) The loan outstanding as on 1st April of each financial year shall be worked out as the gross loan in accordance with regulation 19 by deducting the cumulative repayment as admitted by the Commission up to 31st March of previous financial year from the gross normative loan;*

*(iii) The rate of interest shall be the weighted average rate of interest on institutional loans calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project. In case the weighted average rate is not available, the interest rate approved by the Commission in its earlier tariff order shall be allowed.*

***Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;***

***Provided further that if the generating plant/project does not have actual loan, then the weighted average rate of interest of the generating company/licensee as a whole shall be considered.***

4.12 The Petitioner has computed the weighted average rate of interest based on details of outstanding loans as summarised in the following table:



Table 9: Actual loan and effective interest rate

| S. No. | Particulars             | 01-Jun-18 to 31-Mar-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
|--------|-------------------------|------------------------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Net loan - Opening      | 438.84                 | 380.71  | 349.95  | 319.15  | 282.82  | 245.97  | 209.12  | 175.02  |
| 2      | Add: Drawl              | -                      | -       | -       | -       | -       | -       | -       | -       |
| 3      | Less: Repayment         | 58.12                  | 30.77   | 30.79   | 36.33   | 36.85   | 36.85   | 34.09   | 36.74   |
| 4      | Net loan - Closing      | 380.71                 | 349.95  | 319.15  | 282.82  | 245.97  | 209.12  | 175.02  | 138.28  |
| 5      | Average loan            | 409.78                 | 365.33  | 334.55  | 300.99  | 264.40  | 227.54  | 192.07  | 156.65  |
| 6      | Interest                | 41.42                  | 44.66   | 40.77   | 36.86   | 32.10   | 27.32   | 22.54   | 18.03   |
| 7      | Effective Interest Rate | 12.14%                 | 12.22%  | 12.19%  | 12.25%  | 12.14%  | 12.01%  | 11.74%  | 11.51%  |

| S. No. | Particulars             | 2026-27 | 2027-28 | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 | 2034-35 |
|--------|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Net loan - Opening      | 138.28  | 111.30  | 84.69   | 79.94   | 76.61   | 73.28   | 69.95   | 66.62   | 63.29   |
| 2      | Add: Drawl              | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 3      | Less: Repayment         | 26.98   | 26.61   | 4.74    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    |
| 4      | Net loan - Closing      | 111.30  | 84.69   | 79.94   | 76.61   | 73.28   | 69.95   | 66.62   | 63.29   | 59.96   |
| 5      | Average loan            | 124.79  | 97.99   | 82.31   | 78.28   | 74.95   | 71.61   | 68.28   | 64.95   | 61.62   |
| 6      | Interest                | 13.65   | 10.48   | 8.07    | 7.99    | 7.66    | 7.33    | 6.99    | 6.66    | 6.33    |
| 7      | Effective Interest Rate | 10.94%  | 10.69%  | 9.80%   | 10.21%  | 10.22%  | 10.23%  | 10.24%  | 10.26%  | 10.27%  |

| S. No. | Particulars             | 2035-36 | 2036-37 | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 | 2042-43 | 2043-44 |
|--------|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Net loan - Opening      | 59.96   | 56.63   | 53.29   | 49.96   | 46.63   | 43.30   | 39.97   | 36.64   | 33.31   |
| 2      | Add: Drawl              | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 3      | Less: Repayment         | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    |
| 4      | Net loan - Closing      | 56.63   | 53.29   | 49.96   | 46.63   | 43.30   | 39.97   | 36.64   | 33.31   | 29.98   |
| 5      | Average loan            | 58.29   | 54.96   | 51.63   | 48.30   | 44.97   | 41.64   | 38.31   | 34.97   | 31.64   |
| 6      | Interest                | 6.00    | 5.66    | 5.33    | 5.00    | 4.66    | 4.33    | 4.00    | 3.66    | 3.33    |
| 7      | Effective Interest Rate | 10.29%  | 10.30%  | 10.32%  | 10.34%  | 10.37%  | 10.40%  | 10.43%  | 10.48%  | 10.53%  |

| S. No. | Particulars             | 2044-45 | 2045-46 | 2046-47 | 2047-48 | 2048-49 | 2049-50 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|--------|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------------------------|
| 1      | Net loan - Opening      | 29.98   | 26.65   | 23.32   | 19.99   | 16.65   | 13.32   | 9.99    | 6.66    | 3.33    | -                        |
| 2      | Add: Drawl              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -                        |
| 3      | Less: Repayment         | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | 3.33    | -                        |
| 4      | Net loan - Closing      | 26.65   | 23.32   | 19.99   | 16.65   | 13.32   | 9.99    | 6.66    | 3.33    | (0.00)  | -                        |
| 5      | Average loan            | 28.31   | 24.98   | 21.65   | 18.32   | 14.99   | 11.66   | 8.33    | 5.00    | 1.67    | -                        |
| 6      | Interest                | 3.00    | 2.66    | 2.33    | 2.00    | 1.67    | 1.33    | 1.00    | 0.67    | 0.33    | -                        |
| 7      | Effective Interest Rate | 10.59%  | 10.67%  | 10.77%  | 10.91%  | 11.11%  | 11.43%  | 12.00%  | 13.33%  | 13.33%  | 13.33%                   |

4.13 Further, loan repayment for each fiscal year has been considered equivalent to the depreciation charged for the year.

4.14 Interest on debt for the period has been computed in accordance with the aforesaid Regulation 21.1 of the HERC Tariff Regulations 2012. The calculation has been summarized in the following table:





Table 10: Interest on Loan calculation (Rs Cr)

| S. No. | Particulars              | 18-Feb-17<br>to<br>22-Feb-17 | 23-Feb-17<br>to<br>31-Mar-17 | 01-Apr-17<br>to<br>25-Jul-17 | 26-Jul-17<br>to<br>31-Mar-18 | 01-Apr-18<br>to<br>31-May-18 | 01-Jun-18<br>to<br>31-Mar-19 |
|--------|--------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| 1      | Opening balance          | 551.49                       | 568.81                       | 575.51                       | 564.17                       | 546.45                       | 541.24                       |
| 2      | Addition                 | 17.68                        | 9.67                         | -                            | 5.00                         | 0.09                         | -                            |
| 3      | Deletion*                | -                            | (0.15)                       | (2.23)                       | (2.64)                       | (0.36)                       | -                            |
| 4      | Repayment                | 0.37                         | 2.81                         | 9.11                         | 20.08                        | 4.93                         | 24.77                        |
| 5      | Closing balance          | 568.81                       | 575.51                       | 564.17                       | 546.45                       | 541.24                       | 516.47                       |
| 6      | Rate of Interest         | N.A                          | N.A                          | N.A                          | N.A                          | N.A                          | 12.14%                       |
| 7      | Interest on Loan Capital | N.A                          | N.A                          | N.A                          | N.A                          | N.A                          | 53.45                        |

| S. No. | Particulars              | 2019-<br>20 | 2020-<br>21 | 2021-<br>22 | 2022-<br>23 | 2023-<br>24 | 2024-<br>25 | 2025-<br>26 | 2026-<br>27 | 2027-<br>28 |
|--------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1      | Opening balance          | 516.47      | 486.21      | 455.67      | 425.12      | 394.73      | 364.40      | 334.09      | 303.79      | 273.48      |
| 2      | Addition                 | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 3      | Deletion*                | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 4      | Repayment                | 30.26       | 30.55       | 30.55       | 30.40       | 30.32       | 30.31       | 30.31       | 30.31       | 30.31       |
| 5      | Closing balance          | 486.21      | 455.67      | 425.12      | 394.73      | 364.40      | 334.09      | 303.79      | 273.48      | 243.17      |
| 6      | Rate of Interest         | 12.22%      | 12.19%      | 12.25%      | 12.14%      | 12.01%      | 11.74%      | 11.51%      | 10.94%      | 10.69%      |
| 7      | Interest on Loan Capital | 61.29       | 57.39       | 53.93       | 49.77       | 45.57       | 40.99       | 36.71       | 31.57       | 27.62       |

| S. No. | Particulars              | 2028-<br>29 | 2029-<br>30 | 2030-<br>31 | 2031-<br>32 | 2032-<br>33 | 2033-<br>34 | 2034-<br>35 | 2035-<br>36 | 2036-<br>37 |
|--------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1      | Opening balance          | 243.17      | 212.86      | 203.21      | 193.56      | 183.88      | 174.23      | 164.58      | 154.92      | 145.25      |
| 2      | Addition                 | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 3      | Deletion*                | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 4      | Repayment                | 30.31       | 9.65        | 9.65        | 9.68        | 9.65        | 9.65        | 9.65        | 9.68        | 9.65        |
| 5      | Closing balance          | 212.86      | 203.21      | 193.56      | 183.88      | 174.23      | 164.58      | 154.92      | 145.25      | 135.60      |
| 6      | Rate of Interest         | 9.80%       | 10.21%      | 10.22%      | 10.23%      | 10.24%      | 10.26%      | 10.27%      | 10.29%      | 10.30%      |
| 7      | Interest on Loan Capital | 22.35       | 21.25       | 20.28       | 19.31       | 18.34       | 17.37       | 16.41       | 15.44       | 14.47       |

| S. No. | Particulars              | 2037-<br>38 | 2038-<br>39 | 2039-<br>40 | 2040-<br>41 | 2041-<br>42 | 2042-<br>43 | 2043-<br>44 | 2044-<br>45 | 2045-<br>46 |
|--------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1      | Opening balance          | 135.60      | 125.94      | 116.29      | 106.62      | 96.97       | 87.31       | 77.66       | 67.99       | 58.33       |
| 2      | Addition                 | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 3      | Deletion*                | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| 4      | Repayment                | 9.65        | 9.65        | 9.68        | 9.65        | 9.65        | 9.65        | 9.68        | 9.65        | 9.65        |
| 5      | Closing balance          | 125.94      | 116.29      | 106.62      | 96.97       | 87.31       | 77.66       | 67.99       | 58.33       | 48.68       |
| 6      | Rate of Interest         | 10.32%      | 10.34%      | 10.37%      | 10.40%      | 10.43%      | 10.48%      | 10.53%      | 10.59%      | 10.67%      |
| 7      | Interest on Loan Capital | 13.50       | 12.53       | 11.56       | 10.59       | 9.61        | 8.64        | 7.67        | 6.69        | 5.71        |



| S. No. | Particulars              | 2046-47 | 2047-48 | 2048-49 | 2049-50 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|--------|--------------------------|---------|---------|---------|---------|---------|---------|---------|--------------------------|
| 1      | Opening balance          | 48.68   | 39.03   | 29.35   | 19.70   | 10.05   | 0.40    | -       | -                        |
| 2      | Addition                 | -       | -       | -       | -       | -       | -       | -       | -                        |
| 3      | Deletion*                | -       | -       | -       | -       | -       | -       | -       | -                        |
| 4      | Repayment                | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    | 1.61                     |
| 5      | Closing balance          | 39.03   | 29.35   | 19.70   | 10.05   | 0.40    | -       | -       | -                        |
| 6      | Rate of Interest         | 10.77%  | 10.91%  | 11.11%  | 11.43%  | 12.00%  | 13.33%  | 13.33%  | 13.33%                   |
| 7      | Interest on Loan Capital | 4.72    | 3.73    | 2.73    | 1.70    | 0.63    | 0.03    | -       | -                        |

\* Deletion is because of asset deletion

## Depreciation

4.15 Regulation 23 of the HERC Tariff Regulations 2012 provides the following with regards to depreciation:

*“For the purpose of tariff determination, the depreciation shall be calculated in the following manner:-*

*(a) The value base of asset shall be the historical capital cost of the asset as admitted by the Commission. The historical capital cost shall include additional capitalization including foreign exchange rate variation, if any already allowed by the Commission up to 31st March of the relevant year.*

*(b) No salvage value shall be considered as the total asset of the project is handed over to the Government after 40 years. (c) Depreciation shall be calculated annually over the useful life of the asset at the rates specified in Appendix II up to 31<sup>st</sup> March of the 12th year from the date of commercial operation of the asset. From 1<sup>st</sup> April of 13th year from the commercial date of operation of the asset, the remaining depreciable value if any out of the 90% of the capital cost of the asset shall be equally spread over the balance useful life of the asset.*

*The depreciation rates given in Appendix-II will be applicable w.e.f. 1.04.2013 only. The depreciation, in case of existing assets, up to 31.03.2013 shall be considered as already allowed and shall not be re – visited. The depreciation rates as per Appendix-II for such assets shall be applicable w.e.f 1.04.2013 up to 12th year from the date of COD.*

*(d) Land shall not be considered as a depreciable asset and cost shall be excluded from the capital cost while computing depreciable value of asset.*

*(e) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the financial year, then the depreciation shall be charged on pro rata basis;*

*(f) Depreciation shall not be allowed on assets (or part of assets) funded by consumer contribution (i.e., any receipts from consumers that are not treated as revenue) and capital subsidies / grants. Provision for replacement of such assets shall be made in the capital investment plan.*

4.16 Depreciation for all asset categories have been calculated as per rates specified in the HERC Tariff Regulations 2012. Depreciation of the fixed assets comprising the Hydro Power Generation Projects for the tenure of the PPA is summarized in the table below:

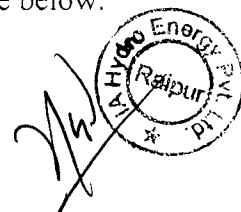


Table 11: Working of depreciation (Rs Cr)

| S. No. | Particulars  | 18-Feb-17 to 22-Feb-17 | 23-Feb-17 to 31-Mar-17 | 01-Apr-17 to 25-Jul-17 | 26-Jul-17 to 31-Mar-18 | 01-Apr-18 to 31-May-18 | 01-Jun-18 to 31-Mar-19 |
|--------|--------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1      | Depreciation | 0.37                   | 2.81                   | 9.11                   | 20.08                  | 4.93                   | 24.77                  |

| S. No. | Particulars  | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
|--------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Depreciation | 30.26   | 30.55   | 30.55   | 30.4    | 30.32   | 30.31   | 30.31   | 30.31   | 30.31   |

| S. No. | Particulars  | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 | 2034-35 | 2035-36 | 2036-37 |
|--------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Depreciation | 30.31   | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    |

| S. No. | Particulars  | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 | 2042-43 | 2043-44 | 2044-45 | 2045-46 |
|--------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Depreciation | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    |

| S. No. | Particulars  | 2046-47 | 2047-48 | 2048-49 | 2049-50 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|--------|--------------|---------|---------|---------|---------|---------|---------|---------|--------------------------|
| 1      | Depreciation | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    | 1.61                     |

## Operation & Maintenance Expenses

4.17 Operation and Maintenance (O&M) expenses have been computed on a normative basis in accordance with Regulation 29 (3) of the CERC Tariff Regulations 2014 as per which:

*“(d) In case of the hydro generating stations declared under commercial operation on or after 1.4.2014, operation and maintenance expenses shall be fixed at 4% and 2.50% of the original project cost (excluding cost of rehabilitation & resettlement works) for first year of commercial operation for stations less than 200 MW projects and for stations more than 200 MW respectively and shall be subject to annual escalation of 6.64% per annum for the subsequent years.”*

4.18 O&M expenses for first year of full operations, i.e. FY 2017-18 (base year) is calculated as 4% of the original project cost (Rs. 295.08 Crore) i.e. Rs. 11.80 Crore (for full year).

4.19 An escalation rate of 6.64% has been considered to project the O&M expenses for the entire PPA tenure in line with the provisions of CERC Regulations.

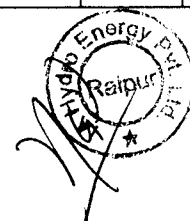
4.20 Accordingly, operation and maintenance expenses have been calculated as prescribed by the CERC Tariff Regulations 2014 and the same is summarized in the table below:

Table 12: O&amp;M expenses for the PPA tenure (Rs. Cr)

| S. No. | Particulars   | 18-Feb-17 to 22-Feb-17 | 23-Feb-17 to 31-Mar-17 | 01-Apr-17 to 25-Jul-17 | 26-Jul-17 to 31-Mar-18 | 01-Apr-18 to 31-May-18 | 01-Jun-18 to 31-Mar-19 |
|--------|---------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1      | Normative O&M | 0.16                   | 1.20                   | 3.75                   | 8.05                   | 2.10                   | 11.18                  |

| S. No. | Particulars   | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
|--------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Normative O&M | 13.42   | 14.31   | 15.26   | 16.28   | 17.36   | 18.51   | 19.74   | 21.05   | 22.45   |

| S. No. | Particulars   | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 | 2034-35 | 2035-36 | 2036-37 |
|--------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Normative O&M | 23.94   | 25.53   | 27.23   | 29.03   | 30.96   | 33.02   | 35.21   | 37.55   | 40.04   |



| S. No. | Particulars   | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 | 2042-43 | 2043-44 | 2044-45 | 2045-46 |
|--------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | Normative O&M | 42.70   | 45.53   | 48.56   | 51.78   | 55.22   | 58.89   | 62.80   | 66.97   | 71.41   |

| S. No. | Particulars   | 2046-47 | 2047-48 | 2048-49 | 2049-50 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|--------|---------------|---------|---------|---------|---------|---------|---------|---------|--------------------------|
| 1      | Normative O&M | 76.15   | 81.21   | 86.60   | 92.35   | 98.49   | 105.03  | 112.00  | 19.96                    |

### Interest on Working Capital

4.21 Interest on Working Capital has been calculated in accordance with Regulation 22 of the HERC Tariff Regulations, 2012.

4.22 Regulation 22.1 of the HERC Tariff Regulations, 2012 states that:

*"22.1 Components of working capital:*

*For the purpose of computing working capital the components mentioned in the table below shall be considered:*

...

*(iii) Hydro power plants:*

*a) Normative operation and maintenance expenses for 1 (one) month*

*b) Maintenance spares @ 7.5% of normative operation and maintenance expenses;*

*c) Receivables equivalent to fixed cost for 1 (one) month. ...*

4.23 Further, Regulation 22.2 of the HERC Tariff Regulations, 2012 states following on the interest rate on working capital:

*"Rate of interest on working capital shall be equal to the base rate of SBI as applicable on 1<sup>st</sup> April of the relevant financial year plus an appropriate margin that realistically reflects the rate at which the generating company/licensees can raise debt from the market."*

4.24 The interest rate for the purpose of determination of interest on working capital has been considered to be the SBI base rate as on April 1, 2018, i.e. 8.7% plus 310 basis points, the margin that has been charged on base rate for the most recent loan availed by the Petitioner. Therefore, the interest rate for the purpose of determination of interest on working capital works out to be 11.80%.

4.25 Accordingly, working capital and interest thereon, for the PPA tenure (starting from 01.06.2018 onwards), have been calculated as prescribed by the HERC Tariff Regulations 2012 and the same is summarized in the table below.



Table 13: Interest on working capital (Rs. Cr)

| S. No. | Particulars                             | 01-Jun-18<br>to<br>31-Mar-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
|--------|---|------------------------------|---------|---------|---------|---------|---------|---------|---------|
| 1      | O&M expense for One month               | 1.10                         | 1.10    | 1.18    | 1.25    | 1.34    | 1.42    | 1.52    | 1.62    |
| 2      | Maintenance Spares @ 7.5% O&M exp.      | 1.01                         | 1.01    | 1.07    | 1.14    | 1.22    | 1.30    | 1.39    | 1.48    |
| 3      | Receivables equivalent to 1 month's AFC | 9.58                         | 9.52    | 9.41    | 9.20    | 8.93    | 8.64    | 8.38    | 8.13    |
| 4      | Total Working Capital                   | 11.69                        | 11.62   | 11.66   | 11.60   | 11.49   | 11.37   | 11.29   | 11.23   |
| 5      | Rate of Interest on Working Capital     | 11.8%                        | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   |
| 6      | Interest on Working Capital             | 1.15                         | 1.37    | 1.38    | 1.37    | 1.36    | 1.34    | 1.33    | 1.33    |

| S. No. | Particulars                             | 2026-27 | 2027-28 | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 |
|--------|---|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | O&M expense for One month               | 1.73    | 1.84    | 1.97    | 2.10    | 2.24    | 2.38    | 2.54    | 2.71    |
| 2      | Maintenance Spares @ 7.5% O&M exp.      | 1.58    | 1.68    | 1.80    | 1.91    | 2.04    | 2.18    | 2.32    | 2.48    |
| 3      | Receivables equivalent to 1 month's AFC | 7.81    | 7.68    | 7.39    | 5.72    | 5.78    | 5.84    | 5.93    | 6.03    |
| 4      | Total Working Capital                   | 11.12   | 11.20   | 11.15   | 9.73    | 10.06   | 10.40   | 10.80   | 11.22   |
| 5      | Rate of Interest on Working Capital     | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   |
| 6      | Interest on Working Capital             | 1.31    | 1.32    | 1.32    | 1.15    | 1.19    | 1.23    | 1.27    | 1.32    |

| S. No. | Particulars                             | 2034-35 | 2035-36 | 2036-37 | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 |
|--------|---|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | O&M expense for One month               | 2.89    | 3.08    | 3.29    | 3.51    | 3.74    | 3.98    | 4.26    | 4.54    |
| 2      | Maintenance Spares @ 7.5% O&M exp.      | 2.64    | 2.82    | 3.00    | 3.20    | 3.42    | 3.64    | 3.88    | 4.14    |
| 3      | Receivables equivalent to 1 month's AFC | 6.13    | 6.24    | 6.38    | 6.52    | 6.68    | 6.84    | 7.05    | 7.26    |
| 4      | Total Working Capital                   | 11.67   | 12.13   | 12.67   | 13.24   | 13.84   | 14.46   | 15.19   | 15.94   |
| 5      | Rate of Interest on Working Capital     | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   |
| 6      | Interest on Working Capital             | 1.38    | 1.43    | 1.50    | 1.56    | 1.63    | 1.71    | 1.79    | 1.88    |

| S. No. | Particulars                             | 2042-43 | 2043-44 | 2044-45 | 2045-46 | 2046-47 | 2047-48 | 2048-49 | 2049-50 |
|--------|---|---------|---------|---------|---------|---------|---------|---------|---------|
| 1      | O&M expense for One month               | 4.84    | 5.15    | 5.50    | 5.87    | 6.26    | 6.66    | 7.12    | 7.59    |
| 2      | Maintenance Spares @ 7.5% O&M exp.      | 4.42    | 4.71    | 5.02    | 5.36    | 5.71    | 6.09    | 6.50    | 6.93    |
| 3      | Receivables equivalent to 1 month's AFC | 7.49    | 7.72    | 8.01    | 8.31    | 8.62    | 8.95    | 9.34    | 9.74    |
| 4      | Total Working Capital                   | 16.75   | 17.58   | 18.54   | 19.53   | 20.60   | 21.69   | 22.96   | 24.26   |
| 5      | Rate of Interest on Working Capital     | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   | 11.8%   |
| 6      | Interest on Working Capital             | 1.98    | 2.07    | 2.19    | 2.30    | 2.43    | 2.56    | 2.71    | 2.86    |

| S. No. | Particulars                             | 2050-51 | 2051-52 | 2052-53 | 01.04.2053<br>to 31.05.2053 |
|--------|---|---------|---------|---------|-----------------------------|
| 1      | O&M expense for One month               | 8.09    | 8.61    | 9.21    | 9.82                        |
| 2      | Maintenance Spares @ 7.5% O&M exp.      | 7.39    | 7.88    | 8.40    | 8.96                        |
| 3      | Receivables equivalent to 1 month's AFC | 10.17   | 10.65   | 11.26   | 11.89                       |
| 4      | Total Working Capital                   | 25.65   | 27.13   | 28.87   | 30.67                       |
| 5      | Rate of Interest on Working Capital     | 11.8%   | 11.8%   | 11.8%   | 11.8%                       |
| 6      | Interest on Working Capital             | 3.03    | 3.20    | 3.41    | 0.60                        |



## Annual Fixed Cost (AFC)

4.26 Regulation 34.5 of HERC Tariff Regulations, 2012 states the following about computation of tariff for hydropower plants:

“

### 34.5 Computation of tariff

(a) The tariff shall be single part comprising only of an energy rate in terms of Rs./kWh of energy generated on an annual basis. The annual expenses will consist of:

(i) Interest and financing charges on loan capital,

(ii) Depreciation

(iii) Return on equity,

(iv) Operation and maintenance expenses, and

(v) Interest on working capital.

(vi) Foreign exchange rate variation

(vii) All statutory levies and taxes, if any, excluding taxes on income

(c) The tariff shall be computed on the basis as laid down herewith.

(i) It shall comprise total annual expenses and allowed return on equity.

(ii) Less other income / income from non-core business.

4.27 Based on the detailed explanation of each component comprising the Annual Fixed Cost (AFC), the total annual fixed cost for the Chanju-I Hydro Power Generation Projects for the PPA tenure from 01.06.2018 to 31.05.2018 has been computed.

4.28 Petitioner humbly submits that no earning on account other income / income from non-core business is accepted.

4.29 A detailed table on AFC is presented in Form 1 of the tariff formats submitted along with this Petition as well as in the following table.

Table 14: AFC for Chanju-I Hydro Power Project (Rs Cr)

| Sl. No. | Particulars                 | 01-Jun-18<br>to<br>31-Mar-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
|---------|-----------------------------|------------------------------|---------|---------|---------|---------|---------|---------|---------|
| 1       | Deprecation                 | 24.77                        | 30.26   | 30.55   | 30.55   | 30.40   | 30.32   | 30.31   | 30.31   |
| 2       | Interest on Loan Capital    | 53.45                        | 61.29   | 57.39   | 53.93   | 49.77   | 45.57   | 40.99   | 36.71   |
| 3       | Return in equity            | 6.55                         | 9.76    | 10.82   | 10.82   | 10.82   | 10.82   | 10.82   | 10.82   |
| 4       | Interest on working capital | 1.15                         | 1.37    | 1.38    | 1.37    | 1.36    | 1.34    | 1.33    | 1.33    |
| 5       | O&M Expenses                | 11.18                        | 13.42   | 14.31   | 15.26   | 16.28   | 17.36   | 18.51   | 19.74   |
| 6       | Total AFC                   | 97.10                        | 116.10  | 114.44  | 111.93  | 108.62  | 105.42  | 101.96  | 98.91   |

| Sl. No. | Particulars                 | 2026-27 | 2027-28 | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 |
|---------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1       | Deprecation                 | 30.31   | 30.31   | 30.31   | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    |
| 2       | Interest on Loan Capital    | 31.57   | 27.62   | 22.35   | 21.25   | 20.28   | 19.31   | 18.34   | 17.37   |
| 3       | Return in equity            | 10.82   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   |
| 4       | Interest on working capital | 1.31    | 1.32    | 1.32    | 1.15    | 1.19    | 1.23    | 1.27    | 1.32    |
| 5       | O&M Expenses                | 21.05   | 22.45   | 23.94   | 25.53   | 27.23   | 29.03   | 30.96   | 33.02   |
| 6       | Total AFC                   | 95.07   | 93.68   | 89.89   | 69.55   | 70.32   | 71.22   | 72.20   | 73.34   |





| Sl. No. | Particulars                 | 2034-35 | 2035-36 | 2036-37 | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 |
|---------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1       | Deprecation                 | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    |
| 2       | Interest on Loan Capital    | 16.41   | 15.44   | 14.47   | 13.50   | 12.53   | 11.56   | 10.59   | 9.61    |
| 3       | Return in equity            | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   |
| 4       | Interest on working capital | 1.38    | 1.43    | 1.50    | 1.56    | 1.63    | 1.71    | 1.79    | 1.88    |
| 5       | O&M Expenses                | 35.21   | 37.55   | 40.04   | 42.70   | 45.53   | 48.56   | 51.78   | 55.22   |
| 6       | Total AFC                   | 74.62   | 76.07   | 77.63   | 79.39   | 81.32   | 83.47   | 85.79   | 88.34   |

| Sl. No. | Particulars                 | 2042-43 | 2043-44 | 2044-45 | 2045-46 | 2046-47 | 2047-48 | 2048-49 | 2049-50 |
|---------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1       | Deprecation                 | 9.65    | 9.68    | 9.65    | 9.65    | 9.65    | 9.68    | 9.65    | 9.65    |
| 2       | Interest on Loan Capital    | 8.64    | 7.67    | 6.69    | 5.71    | 4.72    | 3.73    | 2.73    | 1.70    |
| 3       | Return in equity            | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   | 11.97   |
| 4       | Interest on working capital | 1.98    | 2.07    | 2.19    | 2.30    | 2.43    | 2.56    | 2.71    | 2.86    |
| 5       | O&M Expenses                | 58.89   | 62.80   | 66.97   | 71.41   | 76.15   | 81.21   | 86.60   | 92.35   |
| 6       | Total AFC                   | 91.13   | 94.19   | 97.47   | 101.05  | 104.93  | 109.15  | 113.66  | 118.54  |

| Sl. No. | Particulars                 | 2050-51 | 2051-52 | 2052-53 | 01.04.2053 to 31.05.2053 |
|---------|-----------------------------|---------|---------|---------|--------------------------|
| 1       | Deprecation                 | 9.65    | 9.68    | 9.65    | 1.61                     |
| 2       | Interest on Loan Capital    | 0.63    | 0.03    | 0.00    | 0.00                     |
| 3       | Return in equity            | 11.97   | 11.97   | 11.97   | 2.00                     |
| 4       | Interest on working capital | 3.03    | 3.20    | 3.41    | 0.60                     |
| 5       | O&M Expenses                | 98.49   | 105.03  | 112.00  | 19.96                    |
| 6       | Total AFC                   | 123.77  | 129.91  | 137.03  | 24.18                    |

## Recovery of Annual Fixed Cost (AFC)

4.30 HERC Tariff Regulations, 2012 further specifies recovery of Annual Fixed Cost through single part tariff as follows:

*(d) The energy rate in terms of Rs/kWh will be determined by dividing the amount (in Rs) arrived at as above by energy sent out (in kWh) in the financial year, calculated based on normative PLF and auxiliary consumption approved by the Commission for the corresponding year.*

*(e) The payment of charges shall be on a monthly basis. The energy charges shall be payable by each beneficiary for the total energy supplied during the month on ex-power plant basis at the computed energy rate."*

4.31 The Petitioner humbly requests the Hon'ble Commission to approve the energy rate as summarised in the following table:

Table 15: Computation of Energy charges (Rs. Cr)

| Particulars                  | 01-Jun-18 to 31-Mar-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 |
|------------------------------|------------------------|---------|---------|---------|---------|---------|---------|---------|
| Annual Fixed Cost (Rs crore) | 97.10                  | 116.10  | 114.44  | 111.93  | 108.62  | 105.42  | 101.96  | 98.91   |
| Saleable Design Energy (MU)  | 114.32                 | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  |
| Energy Charge (Rs./kWh)      | 8.49                   | 8.54    | 8.42    | 8.23    | 7.99    | 7.75    | 7.50    | 7.28    |

| Particulars                  | 2026-27 | 2027-28 | 2028-29 | 2029-30 | 2030-31 | 2031-32 | 2032-33 | 2033-34 |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Annual Fixed Cost (Rs crore) | 95.07   | 93.68   | 89.89   | 69.55   | 70.32   | 71.22   | 72.20   | 73.34   |
| Saleable Design Energy (MU)  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  |
| Energy Charge (Rs./kWh)      | 6.99    | 6.89    | 6.61    | 5.12    | 5.17    | 5.24    | 5.31    | 5.39    |



| Particulars                  | 2034-35 | 2035-36 | 2036-37 | 2037-38 | 2038-39 | 2039-40 | 2040-41 | 2041-42 |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Annual Fixed Cost (Rs crore) | 74.62   | 76.07   | 77.63   | 79.39   | 81.32   | 83.47   | 85.79   | 88.34   |
| Saleable Design Energy (MU)  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  |
| Energy Charge (Rs./kWh)      | 5.49    | 5.60    | 5.71    | 5.84    | 5.98    | 6.14    | 6.31    | 6.50    |

| Particulars                  | 2042-43 | 2043-44 | 2044-45 | 2045-46 | 2046-47 | 2047-48 | 2048-49 | 2049-50 |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Annual Fixed Cost (Rs crore) | 91.13   | 94.19   | 97.47   | 101.05  | 104.93  | 109.15  | 113.66  | 118.54  |
| Saleable Design Energy (MU)  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  | 135.95  |
| Energy Charge (Rs./kWh)      | 6.70    | 6.93    | 7.17    | 7.43    | 7.72    | 8.03    | 8.36    | 8.72    |

| Particulars                  | 2050-51 | 2051-52 | 2052-53 | 01.04.2053<br>to 31.05.2053 |
|------------------------------|---------|---------|---------|-----------------------------|
| Annual Fixed Cost (Rs crore) | 123.77  | 129.91  | 137.03  | 24.18                       |
| Saleable Design Energy (MU)  | 135.95  | 135.95  | 135.95  | 21.63                       |
| Energy Charge (Rs./kWh)      | 9.10    | 9.56    | 10.08   | 11.18                       |

- 4.32 At the Project COD, share of debt is 93.7% and that of equity is 6.3% (refer Table 7). Return on Debt in the beginning of the PPA period is 12.14% (refer Table 9) while Return on Equity is 14.00%. Average tax rate during the PPA tenure is 26.53% (refer Paragraph no. 4.8). Based on this, Weighted Average Cost of Capital (WACC) of the project is computed based on following formula:

$$\text{WACC} = (\text{Share of debt} \times \text{Cost of debt} \times (1 - \text{Avg. Tax rate})) + (\text{Share of equity} \times \text{Cost of equity})$$

$$\text{WACC} = (93.7\% \times 12.14\% (1 - 26.53\%)) + (6.3\% \times 14.0\%) = 9.23\%$$

- 4.33 Based on the WACC and the estimated Energy charges, levelized tariff for the Chanju-I HEP during the PPA period of 01.06.2018 to 31.05.2053 is estimated at Rs 7.26/kWh.
- 4.34 The Petitioner would also like to submit that the Hon'ble Commission in its Order dated 10.04.2018 in Case No. HERC/ PRO-15 of 2016 (Page 43) had stated:

*"Taking all the above discussions into consideration, the Commission approve procurement of power from the Chanju Hydro Electric Project, throughout the year, at the tariff to be determined by the Commission on separate petition to be filed by the generator with Rs. 4.50/kwh being the ceiling tariff."* [Emphasis Added]

- 4.35 Further, the Hon'ble Commission in its Order dated 10.04.2018 in Case No. HERC/ PRO-15 of 2016 (Page 46) observed that the ceiling tariff offered by the Petitioner is the lowest of all the offers:

*"Moreover, the ceiling tariff offered in the present case i.e. Rs. 4.50 / kWh is the lowest of all the offers."*

- 4.36 The Electricity Act, 2003 as well as the National Tariff Policy, 2016, vest in the Hon'ble Commission, the responsibility to balance the interest of the consumers with the interest of the project developers while regulating the tariff of the generating companies. As per Section 61 of Electricity Act 2003,

*"The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-*

*(d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner"*

*MW*

- 4.37 Therefore, financial viability of the generating stations is an important consideration to enable them to continue to supply power to the consumers. Lack of cost reflective tariffs have far reaching consequences on the economy as a whole as it leads to higher defaults by the project developers on their debt obligations thereby increasing a system risk in the Banking sector consequently impacting the economic growth.
- 4.38 It is submitted that a project specific tariff determined under the provisions of Section 61 and 62 of the Act shall result in a levelized tariff spread over the term of the PPA. In a levelized tariff regime, the yearly tariff trajectory typically follows a 'S' curve, in which the tariff, in the initial years of plant operation is higher than the levelized tariff. Subsequently, as the debt gets repaid coupled with decrease in depreciation costs, the yearly tariff shows a decreasing trend and the annual tariffs are lower than the levelized tariff. However, after entire debt gets repaid (typically in 12-13 years), the tariff typically shows an increasing trend due to increase in O&M expenses. Owing to this 'S'-curve trajectory of the annual tariffs, the tariff for each financial year may go above, or go down, vis-à-vis the levelized tariff, but the financial impact upon the generator as well as the procurer remains the same as the levelized tariff over the life of the plant or the term of the PPA.
- 4.39 Hence, in order to allow full recovery of the costs of the Petitioner, the Hon'ble Commission is humbly requested to allow recovery of levelized tariff of Rs.7.26 per KWh.
- 4.40 This recovery mechanism is essential to ensure recovery of costs of the Petitioner in accordance with cost plus regime envisaged in Section 62 of the Act and to ensure long-term economic and financial viability of the plant and sector as a whole.

#### PRAYER

The petitioner respectfully prays that the Hon'ble Commission may:

- a. Examine the proposal submitted by the petitioner for Determination of Tariff for a favorable consideration as detailed in the enclosed petition;
- b. Pass suitable orders towards approving the proposed AFC and determine tariff for the Chanju-I Hydro Generation Project for the PPA tenure 01.06.2018 to 31.05.2053;
- c. Allow reimbursement of filing fees of this Petition, expenses incurred on publication of notices in the newspapers, charges of SLDC and legal fees on actual basis whenever incurred;
- d. Condone any inadvertent omissions/errors/shortcomings and permit the Petitioner to make further submissions as may be required at a future date to support this petition in terms of modification / clarification;
- e. Pass such further orders, as the Hon'ble Commission may deem fit and proper, keeping in view of the facts and circumstances of the case;

Filed by:

**IA Hydro Energy Private Limited**

  
Petitioner

Place:

Date:



BEFORE THE HARYANA ELECTRICITY REGULATORY COMMISSION,  
PANCHKULA, HARYANA

FILING NO.

CASE NO.

(To be filled by the Office)

IN THE MATTER OF :

Petition under PART VII Section 61, Section 62, Section 64 (5) and PART X Section 86 (1) (b) of the Electricity Act, 2003, read with the Haryana Electricity Regulatory Commission Regulations and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for determination of Tariff for supply of Power from 36 MW (3x12 MW) Chanju-I Hydro Electric Project located on the Chanju Nallah in the Chamba District of Himachal Pradesh.

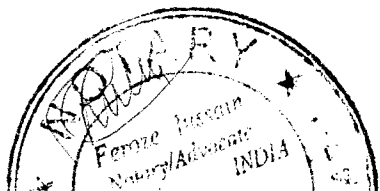
AND

IN THE MATTER OF :

PETITIONER

M/s IA Hydro Energy Private Limited

Registered Office: D-17, Sector-1, Lane-1, New Shimla,  
Himachal Pradesh -171009.



9 FEB 2019

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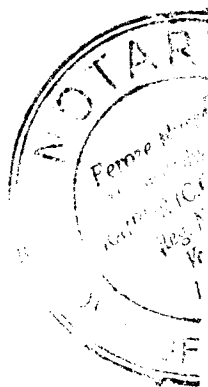
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श्रीमती प्रीति ठाकुर

स्टाम्प विक्रेता

मो: 9303646585/9301235760



**RESPONDENT**

Haryana Power Purchase Center, Shakti Bhawan, Sector - 6, Panchkula (Haryana).

**Affidavit verifying the Petition / reply / application**

I, **Shravan Kumar Goyal** S/o Shri B.P.Goyal aged 54 years residing at Flat No.4C, Block-C, Merlin Jayshree Vihar, Near Mandi Road, Pandri, Raipur (C.G.) 492004 do solemnly affirm and say as follows :

1. I am the petitioner/applicant/respondent etc. or I am Chief Executive Officer of IA Hydro Energy Private Ltd, the petitioner / ~~applicant~~ / ~~respondent~~ in the above matter and am duly authorised by the said petitioner/applicant/respondent to make this affidavit.
2. There is no case pending in any court of law with regard to the matter referred to the Commission.
3. That I have read and understood the contents of the accompanying Petition on behalf of the Petitioner for approval of Tariff of Petitioner's Chanju-I Hydro Electric Project and the same has been drafted under my instructions. I state that the same are true and correct to the best of my knowledge and belief and no part of it is false and nothing material has been concealed there from. That the Annexures, Forms and Documents annexed to the Petition are the true copy of their respective originals.

**VERIFICATION:**

I, the deponent above named do hereby verify that all the contents of the above affidavit are true and correct to be best of my knowledge and belief and nothing material has been concealed there from.

Verified on this 9<sup>th</sup> Day of February, 2019.

**Deponent**

Place : Raipur

Date : 09-02-2019

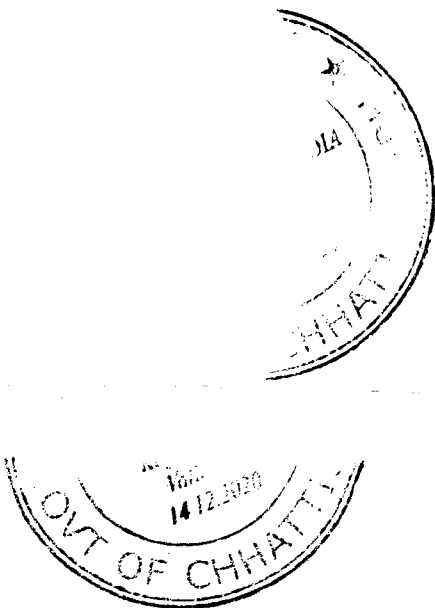
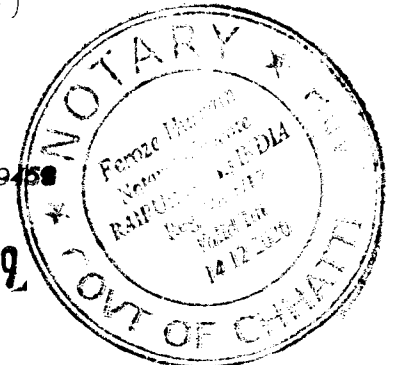
Identified before me by

**SOLEMNLY AFFIRMED  
BEFORE**

Forage  
Adv.  
Raipur

RAIPUR C.G. No. 9893159458

**9 FEB 2019**





# IA Hydro Energy Private Limited

CIN : U40300HP2017PTC006529

Regd. Office : D-17, Sector-1, Lane-1, New Shimla, Shimla 171 009 Ph. : 0177-2670022, 2670023  
Fax : 0177-2670022, E-mail : cs@goelgroup.co.in

Admin. Office : Vill. Borjhara, Urla-Guma Road, Urla Growth Center, Raipur 493 221 (C.G.) Ph. : (0771) 4288019 / 29 / 39  
Fax : (91-771) 4288123, E-mail : info.bjr@goelgroup.co.in, commercial.bjr@goelgroup.co.in

## RESOLUTION NO. 02

**CERTIFIED TRUE COPY OF RESOLUTION PASSED AT THE MEETING OF THE BOARD OF DIRECTORS OF IA HYDRO ENERGY PRIVATE LIMITED AT ITS MEETING HELD ON THURSDAY, THE 24<sup>th</sup> DAY OF JANUARY, 2019 AT THE ADMINISTRATIVE OFFICE OF THE COMPANY SITUATED AT VILLAGE- BORJHARA, URLA GUMA ROAD, URLA GROWTH CENTRE, RAIPUR-493221 (C.G.) FROM 04.30 P.M TO 05.30 P.M.**

The Chairman informed the Board that the company needs to authorize Shri Shravan Kumar Goyal S/o Bhagwati Prasad Goyal aged about 54 years and resident of Flat No. 4 C, Block C, Mallika Merlin, Jaishree Vihar, New Mandi Road, Raipur- 492001 (C.G.), on behalf of the Company regarding filing of Petition before Haryana Electricity Regulatory Commission in the matter of Determination of tariff for sale of power 36 MW from Chanju-I HEP for the period of 35 years to HPPC.

The Board discussed the matter and passed the following resolution(s) –

“RESOLVED THAT the consent of the Board be and is hereby accorded to authorize Shri Shravan Kumar Goyal S/o Bhagwati Prasad Goyal aged about 54 years and resident of Flat No. 4 C, Block C, Mallika Merlin, Jaishree Vihar, New Mandi Road, Raipur- 492001 (C.G.), on behalf of the Company regarding filing of Petition before Haryana Electricity Regulatory Commission in the matter of Determination of tariff for sale of power 36 MW from Chanju-I HEP for the period of 35 years to HPPC.”

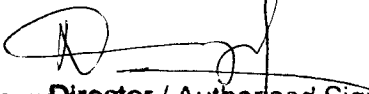
“RESOLVED FURTHER THAT Shri Shravan Kumar Goyal be and is hereby authorized to execute, sign and deliver in the name and on behalf of the Company all such agreements, deeds, forms, notices, communications or documents relating to, or ancillary to, all the transactions as may be necessary and desirable in this connection.”

“RESOLVED FURTHER THAT a copy of the resolution be furnished to the necessary authorities as and when required from time to time.”

CERTIFIED TRUE COPY

FOR IA HYDRO ENERGY PRIVATE LIMITED

**IA Hydro Energy Pvt. Ltd.**

  
NAREN SINGH  
Director / Authorised Signatory  
MANAGING DIRECTOR  
DIN: 00115883  
RAIPUR (C.G.)