

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 398/GT/2020**

**Coram:**

**Shri I.S. Jha, Member  
Shri Arun Goyal, Member  
Shri Pravas Kumar Singh, Member**

**Date of Order: 31<sup>st</sup> March, 2023**

**IN THE MATTER OF**

Petition for approval of tariff of Kopili Hydroelectric Project (200 MW) for the period 2019-24.

**AND**

**IN THE MATTER OF**

North Eastern Electric Power Corporation Limited  
Corporate Office, Brookland Compound  
Lower New Colony,  
Shillong-793003

**.... Petitioner**

Vs

1. Assam Power Distribution Company Limited,  
"Bijulee Bhawan" Paltanbazar  
Guwahati-781 001, Assam
  2. Meghalaya Power Distribution Corporation Limited,  
Lumjinshai, Short Round Road  
Shillong-799 001, Meghalaya
  3. Tripura State Electricity Corporation Limited,  
Bidyut Bhavan, North Banamalipur  
Agartala-799 001, Tripura
  4. Power & Electricity Department,  
Government of Mizoram, New Secretariat Complex  
Kawlpeitha, Aizwal-796001
  5. Manipur State Power Distribution Company Limited  
3<sup>rd</sup> Floor, New Directorate Building, Near 2<sup>nd</sup> M.R. Gate  
Imphal-Dimapur Road, Imphal-795 001, Manipur
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6. Department of Power,  
Government of Arunachal Pradesh,  
Vidyut Bhawan, Itanagar-791 111
7. Department of Power,  
Government of Nagaland,  
Electricity House, AG Colony  
Kohima-797 001
8. North Eastern Regional Power Committee,  
NERPC Complex, Dong Parmaw,  
Lapalang, Shillong-793 006
9. North Eastern Regional Load Despatch Centre,  
Dongtieh, Lower Nongrah  
Lapalang, Shillong-793 006

.... Respondents

**Parties Present:**

Shri Devapriya Choudhury, NEEPCO  
Shri Sushanta Deka, NEEPCO  
Shri Munin Choudhary, NEEPCO  
Shri Ripunjoy Bhuyan, NEEPCO  
Ms. Bornali Deori, NEEPCO  
Ms. Elizabeth Pyrbot, NEEPCO

**ORDER**

This petition has been filed by the Petitioner, North Eastern Electric Power Corporation Limited, for approval of tariff of Kopili Hydroelectric Project (4 x 50 MW) (in short 'the generating station') for the period 2019-24, in terms of the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2019 Tariff Regulations'). The generating station comprises of four units of 50 MW and the date of commercial operation (COD) of the units of the generating station are as under:

<b>Units</b>	<b>COD</b>
Unit-I	5.7.1988
Unit-II	22.6.1988
Unit-III	1.5.1997
Unit-IV /Generating station	12.7.1997



2. Petition No. 46/GT/2015 was filed by the Petitioner for approval of tariff of the generating station for the period 2014-19 and the Commission vide its order dated 13.1.2016 approved the capital cost and the annual fixed charges. Subsequently, the Petitioner filed Petition No. 370/GT/2019, for truing up of tariff for the period 2014-19, and the Commission vide its order dated 31.3.2023 in Petition No. 370/GT/2019, had approved the capital cost and the annual fixed charges of the generating station as under:

**Capital Cost allowed**

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	27835.74	30375.90	31128.91	31974.81	32020.63
Net additional capital expenditure allowed	2540.16	753.01	845.90	45.82	3079.67
<b>Closing Capital Cost</b>	<b>30375.90</b>	<b>31128.91</b>	<b>31974.81</b>	<b>32020.63</b>	<b>35100.29</b>
Average Capital Cost	29105.82	30752.41	31551.86	31997.72	33560.46

**Annual Fixed Charges allowed**

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	565.42	702.87	752.36	787.41	886.86
Interest on Loan	97.82	193.42	192.26	164.11	192.15
Return on Equity	2832.80	3115.53	3579.55	3246.96	3099.56
Interest on Working Capital	419.26	453.64	489.44	507.54	534.39
O&M Expenses	6132.72	6540.18	6974.71	7438.11	7932.30
<b>Total</b>	<b>10048.03</b>	<b>11005.64</b>	<b>11988.32</b>	<b>12144.13</b>	<b>12645.25</b>

**Present Petition**

3. The Petitioner has filed the present petition for approval of tariff of the generating station for the period 2019-24, in terms of the provisions of the 2019 Tariff Regulations. Accordingly, the capital cost and annual fixed cost claimed by the Petitioner are as under:

**Capital Cost claimed**

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01
Add: Addition during the year/period	0.00	0.00	0.00	0.00	0.00
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00

during the year/ period					
Less: Reversal during the year/ period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/ period	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01
Average Capital Cost	39618.01	39618.01	39618.01	39618.01	39618.01

### **Annual Fixed Charges claimed**

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	920.76	920.76	920.76	920.76	920.76
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	3403.69	3403.69	3403.69	3403.69	3403.69
Interest on Working Capital	462.64	459.24	478.12	497.91	518.63
O&M Expenses	9044.47	9475.58	9927.24	10400.43	10896.17
<b>Total</b>	<b>13831.56</b>	<b>14259.27</b>	<b>14729.81</b>	<b>15222.79</b>	<b>15739.25</b>

4. The Commission vide Record of the Proceedings (ROP) of the hearing dated 25.1.2022, directed the Petitioner to submit certain additional information and reserved order in the petition. In response, the Petitioner on 28.2.2022 has filed the additional information after serving copies to the Respondents. None of the Respondents have filed replies in the matter. Taking into consideration the submissions of the parties and the documents available on record, we proceed for determining the tariff of the generating station for the period 2019-24, after prudence check, as stated in the subsequent paragraphs.

### **Capital Cost**

5. Regulation 19(3) of the 2019 Tariff Regulations provides as under:

*“(3) The Capital cost of an existing project shall include the following:*

- (a) Capital cost admitted by the Commission prior to 1.4.2019 duly tried up by excluding liability, if any, as on 1.4.2019;*
- (b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*
- (c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;*
- (d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
- (e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not*

*include the transportation cost and any other appurtenant cost paid to the railway; and*

- (f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.”*

6. The Petitioner has claimed the annual fixed charges, based on the opening capital cost of Rs. 39618.01 lakh as on 1.4.2019. However, the Commission vide its order dated 31.3.2023 in Petition No. 370/GT/2019, had approved the closing capital cost of Rs. 35100.29 lakh, as on 31.3.2019. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the closing capital cost of Rs.35100.29 lakh, has been considered as the opening capital cost, as on 1.4.2019.

#### **Additional Capital Expenditure**

7. During the hearing of this petition on 25.1.2022, the representative of the Petitioner, clarified that no additional capital expenditure has been claimed during the period 2019-24, as the Petitioner is to undertake Renovation and Modernization (R&M), as the entire plant had submerged. It was also submitted that the Petitioner will file a fresh petition for approval of R&M as and when the final approval of CEA on the DPR is received. It is noticed that the Petitioner has filed Petition No. 189/MP/2022, before this Commission, on 24.6.2022, seeking approval of R&M, for life extension beyond the normal useful life of the generating station. The said petition was heard on 22.2.2023 and is pending consideration of the Commission. Since the Petitioner has not claimed any additional capital expenditure, including de-capitalization for the period 2019-24, in this petition, no additional capital expenditure has been considered.

#### **Capital Cost**

8. Accordingly, the capital cost allowed for the purpose of tariff for the period 2019-24 is as under:

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	(Rs.in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	35100.29	35100.29	35100.29	35100.29	35100.29
Add: Projected additional capital expenditure allowed	0.00	0.00	0.00	0.00	0.00
<b>Closing Capital Cost</b>	<b>35100.29</b>	<b>35100.29</b>	<b>35100.29</b>	<b>35100.29</b>	<b>35100.29</b>
Average Capital Cost	35100.29	35100.29	35100.29	35100.29	35100.29

## **Debt Equity Ratio**

9. Regulation 18 of the 2019 Tariff Regulations provides as under:

*“(1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:*

*Provided that:*

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.*

*Explanation- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

*(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*

*(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:*

*Provided that in case of a generating station or a transmission system including communication, system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;*

*Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations;*

*(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.*

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.”

10. The closing debt-equity ratio of 56.75:43.25, as on 31.3.2019, has been considered as the opening debt-equity ratio as on 1.4.2019. No additional capital expenditure and de-capitalization has been claimed by the Petitioner. Accordingly, the details of debt-equity ratio in respect of generating station, as on 1.4.2019, and 31.3.2024 are as under:

*(Rs. in lakh)*

Asset	As on 1.4.2019		Additional Capital Expenditure during 2019-24		As on 31.3.2024	
	Amount	%	Amount	%	Amount	%
Debt	19,920.91	56.75	0.00	70.00	19,920.91	56.75
Equity	15,179.38	43.25	0.00	30.00	15,179.38	43.25
<b>Total</b>	<b>35,100.29</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>35,100.29</b>	<b>100.00</b>

### **Return on Equity**

11. Regulation 30 of the 2019 Tariff Regulations provides as under:

“(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

- i. In case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;
- ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

iii. in case of a thermal generating station, with effect from 1.4.2020:

- a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;
- b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:  
Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019”

12. Regulation 31 of the 2019 Tariff Regulations provides as under:

“31. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded for the calculation of effective tax rate.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

Illustration-

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

Rate of return on equity =  $15.50 / (1 - 0.2155) = 19.758\%$

(ii) In case of a generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore / Rs 1000 Crore = 24%;

(d) Rate of return on equity =  $15.50 / (1 - 0.24) = 20.395\%$ .

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of



*grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long-term transmission customers, as the case may be, on year to year basis.”*

13. For grossing up of Return on Equity (ROE) for the period 2019-24, the Petitioner has applied the MAT rate of 17.472% and the same is allowed. This is, however, subject to revision, if any, at the time of truing up of tariff. Accordingly, ROE has been worked out and allowed as under:

	<i>(Rs.in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Normative Equity- Opening (a)	15179.38	15179.38	15179.38	15179.38	15179.38
Addition of Equity due to additional capital expenditure (b)	0.00	0.00	0.00	0.00	0.00
Normative Equity- Closing (c)=(a)+(b)	15179.38	15179.38	15179.38	15179.38	15179.38
Average Normative Equity (d)=(a+c)/2	15179.38	15179.38	15179.38	15179.38	15179.38
Return on Equity (Base Rate) (e)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate (f)	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-tax) (g)	19.993%	19.993%	19.993%	19.993%	19.993%
<b>Return on Equity (Pre-tax) – (annualized) (h)=(d)*(g)</b>	<b>3034.81</b>	<b>3034.81</b>	<b>3034.81</b>	<b>3034.81</b>	<b>3034.81</b>

### **Interest on loan**

14. Regulation 32 of the 2019 Tariff Regulations provides as under:

*“32. Interest on loan capital:*

*(1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

*(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*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 station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

*(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.”*

15. Accordingly, the repayment for the period 2019-24, has been considered equal to the depreciation allowed for the respective years, and Interest on loan has been calculated on the normative average loan of the year, by applying the last available weighted average rate of interest, as the actual loans have already been repaid.

Accordingly, Interest on loan is worked out as under:

	<i>(Rs.in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan (A)	19,920.91	19,920.91	19,920.91	19,920.91	19,920.91
Cumulative repayment of loan up to previous year (B)	16,779.77	17,507.18	18,234.60	18,962.01	19,689.42
Net Loan Opening (C)=(A)-(B)	3,141.15	2,413.73	1,686.32	958.90	231.49
Net Addition due to additional capital expenditure (D)	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the period (E)	727.41	727.41	727.41	727.41	231.49
Cumulative repayment adjustment on a/c of de-capitalization (F)	0.00	0.00	0.00	0.00	0.00
Net Repayment of loan during the period(G) = (E)-(F)	727.41	727.41	727.41	727.41	231.49
Net Loan Closing (H)=(C+D-G)	2,413.73	1,686.32	958.90	231.49	-
Average Loan(I)=(C+H)/2	2,777.44	2,050.02	1,322.61	595.20	115.74
Weighted Average Rate of Interest of loan (J)	7.94%	7.94%	7.94%	7.94%	7.94%
<b>Interest on Loan (K=I*J)</b>	<b>220.53</b>	<b>162.77</b>	<b>105.02</b>	<b>47.26</b>	<b>9.19</b>

### **Depreciation**

16. Regulation 33 of the 2019 Tariff Regulations provides as under:

“33. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset: Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-I** to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.

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17. The COD of the generating station is 12.7.1997. Since the project has completed 12 years of commercial operation as on 13.7.2009, the remaining depreciable value has been spread over the balance useful life of the project during the period 2019-24. Accordingly, depreciation has been worked out as under:

	<i>(Rs.in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Capital Cost (a)	35100.29	35100.29	35100.29	35100.29	35100.29
Closing Capital Cost (b)	35100.29	35100.29	35100.29	35100.29	35100.29
Average Capital Cost (c)=(a)+(b)/2	35100.29	35100.29	35100.29	35100.29	35100.29
Freehold land value (d)	1440.07	1440.07	1440.07	1440.07	1440.07
Depreciable Value (e)=90%*(c-d)	30294.20	30294.20	30294.20	30294.20	30294.20
Balance life (f)	18.28	17.28	16.28	15.28	14.28
Remaining Depreciable Value (g)	13297.54	12570.12	11842.71	11115.30	10387.88
<b>Depreciation during the period (h)=(g)/(f)</b>	<b>727.41</b>	<b>727.41</b>	<b>727.41</b>	<b>727.41</b>	<b>727.41</b>
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (I) = (H) + (Cumulative Depreciation (shown at K), at the end of the previous year) *	17724.07	18451.49	19178.90	19906.32	20633.73
Less: Adjustment on account of de-capitalisation (j)	0.00	0.00	0.00	0.00	0.00
<b>Net Cumulative Depreciation (k)</b>	<b>17724.07</b>	<b>18451.49</b>	<b>19178.90</b>	<b>19906.32</b>	<b>20633.73</b>

\*Cumulative Depreciation as on 31.3.2019 is Rs. 16996.66 lakh

### **Operation & Maintenance Expenses**

18. Regulation 35(2)(a) of the 2019 Tariff Regulations provides the O&M expense norms for hydro generating stations, which have been operational for three or more years as on 1.4.2019, as under:

<i>(Rs.in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
9044.47	9475.58	9927.24	10400.43	10896.17

19. As the Petitioner has claimed normative O&M expenses in terms of the said regulations, the same is allowed.

### **Security Expenses and Capital Spares**

20. As regards Security expenses and capital spares, the Petitioner has submitted that the same will be claimed at the time of truing up of tariff. Accordingly, the security

expenses and capital spares, shall be considered, based on the actual expenses incurred, at the time of truing-up of tariff of the generating station.

### **Interest on Working Capital**

21. Regulation 34(1)(c) of the 2019 Tariff Regulation provides as under:

*“34. Interest on Working Capital:*

*(1) The working capital shall cover:*

*(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:*

*(i) Receivables equivalent to 45 days of annual fixed cost;*

*(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*

*(iii) Operation and maintenance expenses, including security expenses for one month.*

22. Regulation 34(3) and 34(4) of the 2019 Tariff Regulation provide as under:

*(3) Rate of interest on working capital shall be on normative basis and shall be considered as bank rate as on 1.4.2019 or as on 1<sup>st</sup> April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later:*

*Provided that in case of truing-up, the rate of interest on working capital shall be considered as bank rate as on 1<sup>st</sup> April of each of the financial year during the tariff period 2019-24.*

*(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.”*

### **Receivables**

23. Receivables equivalent to 45 days of annual fixed cost are worked out and allowed as under:

<i>(Rs.in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
1657.53	1706.46	1753.37	1806.71	1860.23

### **Maintenance Spares**

24. Maintenance spares @ 15% of O&M expenses is worked out and allowed as under:

<i>(Rs.in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
1356.67	1421.34	1489.09	1560.06	1634.43

### **O&M expenses**

25. O&M expenses for one month are allowed as under:

<i>(Rs.in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
753.71	789.63	827.27	866.70	908.01

### **Rate of Interest on working capital**

26. In terms of Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital shall be considered as 12.05% (i.e. one-year SBI MCLR of 8.55% as on 1.4.2019 plus 350 bps) for the period 2019-24. Further, the aforesaid rate of interest is subject to truing-up, based on one-year SBI MCLR as on 1st April of the respective years of the period 2019-24. The tariff of the generating station is being determined in the year 2022-23 and one-year SBI MCLR as on 1.4.2020 (i.e. 7.75%), 1.4.2021 (i.e. 7%) and 1.4.2022 (i.e. 7%) is available. Hence, in order to safeguard against additional interest burden due to excess/ under recovery of tariff, we deem it prudent to consider the rate of interest on working capital for the year 2019-20 as 12.05%, for 2020-21 as 11.25% (i.e. one year SBI MCLR of 7.75% as on 1.4.2020 plus 350 bps) for 2021-22 as 10.50% (i.e. one year SBI MCLR of 7.00% as on 1.4.2021 plus 350 bps) and for the period 2022-24 as 10.50% (i.e. one year SBI MCLR of 7% as on 1.4.2022 plus 350 bps). Accordingly, interest on working capital is computed as under:

<i>(Rs.in lakh)</i>					
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Working Capital for Receivables (45 days)	1657.53	1706.46	1753.37	1806.71	1860.23
Working Capital for Maintenance spares (15% of O&M Expenses)	1356.67	1421.34	1489.09	1560.06	1634.43
Working Capital for O&M expenses	753.71	789.63	827.27	866.70	908.01
<b>Total Working Capital</b>	<b>3767.91</b>	<b>3917.43</b>	<b>4069.73</b>	<b>4233.48</b>	<b>4402.67</b>
Rate of interest on working capital (%)	12.050%	11.250%	10.500%	10.500%	10.500%
<b>Interest on Working Capital</b>	<b>454.03</b>	<b>440.71</b>	<b>427.32</b>	<b>444.52</b>	<b>462.28</b>

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### **Annual Fixed Charges for the period 2019-24**

27. Accordingly, the annual fixed charges approved for the generating station for the period 2019-24 is summarized below:

	<i>(Rs.in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	727.41	727.41	727.41	727.41	727.41
Interest on Loan	220.53	162.77	105.02	47.26	9.19
Return on Equity	3034.81	3034.81	3034.81	3034.81	3034.81
Interest on Working Capital	454.03	440.71	427.32	444.52	462.28
O&M Expenses	9044.47	9475.58	9927.24	10400.43	10896.17
<b>Total</b>	<b>13481.26</b>	<b>13841.29</b>	<b>14221.80</b>	<b>14654.43</b>	<b>15129.87</b>

*basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column, in the order.*

28. The annual fixed charges approved as above are subject to truing up, in terms of Regulation 13 of the 2019 Tariff Regulations.

### **Normative Annual Plant Availability Factor (NAPAF)**

29. Regulation 50(A)(4) of the 2019 Tariff Regulations provides for the Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations already in operation. Accordingly, in terms of the said regulation, NAPAF of 69% has been considered for this generating station.

### **Design Energy**

30. The Commission in its order dated 31.3.2023 in Petition No. 370/GT/2019, had considered the annual Design Energy (DE) of 1186.14 million units for this generating station. This DE has been considered for this generating station for the period 2019-24 as per month-wise details as under:

<b>Months</b>	<b>Design Energy (MU)</b>
April	58.03
May	148.80
June	144.00
July	148.80
August	148.80

<b>Months</b>	<b>Design Energy (MU)</b>
September	144.00
October	118.30
November	54.72
December	56.54
January	56.54
February	51.07
March	56.54
<b>Total</b>	<b>1186.14</b>

### **Application filing fee and publication expenses**

31. The Petitioner has sought the reimbursement of fees paid by it for filing the petition and for publication expenses and has submitted that the reimbursement of the same are in accordance in terms of the Regulation 70(1) of the 2019 Tariff Regulations. In view of the above, the Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the filing of this petition, directly from the beneficiaries, on pro-rata basis, in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

32. Similarly, RLDC Fees & charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2015, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

### **Summary**

33. The annual fixed charges claimed and allowed for the period 2019-24 is summarized below:

<i>(Rs.in lakh)</i>					
<b>Annual Fixed Charges</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Claimed	13831.56	14259.27	14729.81	15222.79	15739.25
<b>Allowed</b>	<b>13481.26</b>	<b>13841.29</b>	<b>14221.80</b>	<b>14654.43</b>	<b>15129.87</b>

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34. Petition No. 398/GT/2020 is disposed in terms of the above.

**Sd/-**  
**(Pravas Kumar Singh)**  
**Member**

**Sd/-**  
**(Arun Goyal)**  
**Member**

**Sd/-**  
**(I.S. Jha)**  
**Member**

