

# CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

**Petition No. 177/TT/2023**

**Coram:**

**Shri Jishnu Barua, Chairperson  
Shri Arun Goyal, Member  
Shri P. K. Singh, Member**

**Date of Order: 26.03.2024**

**In the matter of:**

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for determination of transmission tariff from Actual/Anticipated COD to 31.3.2024 for Asset-1: 1 x 500 MVA, 400/220 kV Transformer along with associated bays at Hiriyr Sub-station and Asset-2: 1 x 500 MVA, 400/220 kV Transformer along with associated bays at Kochi Sub-station under "Augmentation of Transformation capacity at existing Hiriyr and Kochi Sub-stations" in the Southern Region.

**And in the matter of:**

Power Grid Corporation of India Limited,  
SAUDAMINI, Plot No-2,  
Sector-29, Gurgaon-122001 (Haryana).

**.....Petitioner**

**Versus**

1. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO),  
NPKRR Maaligai, 800,  
Anna Salai, Chennai-600002.
2. Kerala State Electricity Board (KSEB),  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram-695004.
3. Electricity Department, Government of Goa,  
Vidyuti Bhawan, Panaji-403001.
4. Electricity Department, Government of Pondicherry,  
Pondicherry-605001.



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5. Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL),  
P&T Colony, Seethmmadhara,  
Vishakhapatnam, Andhra Pradesh.
6. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL),  
Srinivasasa Kalyana Mandapam Backside, Tiruchanoor Road,  
Kesavayana Gunta, Tirupati-517501.
7. Southern Power Distribution Company of Telangana Limited (TSSPDCL),  
6-1-50, Corporate Office, Mint Compound,  
Hyderabad-500063, Telangana.
8. Northern Power Distribution Company of Telangana Limited (TSNPDCL),  
H. No 2-5-3 1/2, Vidyut Bhawan, Corporate Office, Nakkal Gutta,  
Hanamkonda, Warangal-506001.
9. Bangalore Electricity Supply Company Limited (BESCOM),  
Corporate Office, K.R.Circle,  
Bangalore-560001, Karnataka.
10. Gulbarga Electricity Supply Company Limited (GESCOM),  
Station Main Road, Gulbarga, Karnataka.
11. Hubli Electricity Supply Company Limited (HESCOM),  
Navanagar, PB Road,  
Hubli, Karnataka.
12. MESCOM Corporate Office,  
Paradigm Plaza, AB Shetty Circle,  
Mangalore, Karnataka-575001.
13. Chamundeswari Electricity Supply Corporation Limited (CESC),  
# 927, L J Avenue, Ground Floor,  
New Kantharaj Urs Road, Saraswatipuram,  
Mysore, Karnataka-570009.

...Respondent(s)

**For Petitioner:** Shri Zafrul Hasan, PGCIL  
Shri Mohd. Mohsin, PGCIL  
Shri A. Naresh Kumar, PGCIL

**For Respondent:** None



## ORDER

The instant petition has been filed by Power Grid Corporation of India Limited for the determination of transmission tariff under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for the period from COD to 31.3.2024 in respect of **Asset-1**: 1 x 500 MVA, 400/220 kV Transformer along with associated bays at Hiriyr Sub-station and **Asset-2**: 1 x 500 MVA, 400/220 kV Transformer along with associated bays at Kochi Sub-station (hereinafter referred to as the “transmission assets”) under “Augmentation of Transformation capacity at existing Hiriyr and Kochi Sub-stations” (hereinafter referred to as the “transmission project”) in the Southern Region:

2. The Petitioner has made the following prayers in the instant petition:

*“1) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred.*

*2) Approve the Transmission Tariff for the tariff block 2019-24 block for the asset covered under this petition, as per para –8.4 above.*

*3) Condone the time overrun in commissioning of Asset-2 covered under instant petition.*

*4) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2019 as per para 8 above for respective block.*

*5) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.*

*6) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.*

*7) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the beneficiaries.*

*8) Allow the Petitioner to claim the overall security expenses and consequential IOWC on that security expenses separately.*



9) Allow the petitioner to claim the capital spares at the end of tariff block as per actual.

10) Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.

11) Allow interim tariff in accordance with Regulation 10 (3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for purpose of inclusion in the PoC charges.

and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice.”

### **Background**

3. The brief facts of the case are as follows:

- a. The matter of non-compliance of N-1 criteria of 2x315 MVA, 400/220 kV ICTs at Hiriyr Sub-station was discussed in the 1<sup>st</sup> SRSCT meeting held on 7.9.2018, 2<sup>nd</sup> SRSCT meeting held on 10.6.2019 and 1<sup>st</sup> SRPC(TP) meeting held on 16.12.2019.
- b. In the 2<sup>nd</sup> SRPC (TP) meeting held on 1.10.2020, the issue of overloading of 2x315 MVA, 400/220 kV ICTs at the Hiriyr Sub-station was discussed. Accordingly, augmentation of transformation capacity at Hiriyr Sub-station by 1x500 MVA, 400/220 kV 3<sup>rd</sup> ICT was agreed upon for implementation as a Regional System Strengthening Scheme. It was also discussed in the same meeting that with the execution of the Tirunelveli-Kochi 400 kV (quad) D/C line, loadings on 2x315 MVA, 400/220 kV ICTs at Kochi Sub-station have significantly increased. Both ICTs are loaded to about 80-90% of their transformation capacity and are not complying with N-1 criteria. It was also discussed that the ICTs at Kochi are highly loaded, and the loadings are expected to further increase with the execution of 2000 MW,  $\pm$ 320 kV Pugalur-Trichur VSC-based HVDC system. The augmentation of 1x500 MVA, 400/220 kV 3<sup>rd</sup> ICT at Kochi Sub-station was agreed for implementation as a Regional System Strengthening Scheme.



- c. Further, the scheme was approved and recommended in the 4<sup>th</sup> meeting of the National Committee on Transmission (NCT) held on 20.1.2020 and 28.1.2020 for implementation through RTM. Subsequently, the Ministry of Power, Gol, vide Office Memorandum dated 16.7.2021, had awarded the transmission project to CTUIL for implementation under regulated tariff mechanism mode by the Petitioner.
- d. The Investment Approval (IA) for the transmission project was accorded by the Petitioner's Competent Authority on 26.10.2021 and communicated vide Memorandum Ref. C/CP/PA2122-07-0U-IA020 dated 27.10.2021, at an estimated cost of ₹9351 lakh, including IDC of ₹258 lakh based on June 2021 price level.
- e. The scope of work covered under the transmission project is as follows:
- (i) Augmentation of transformation capacity at 400/220 kV Hiriya Sub-station
- 400 kV**
- ICT bay : 1 Number
- 500 MVA, 400/220 kV ICT : 1 Number
- 220 kV**
- ICT bay : 1 Number
- (ii) Augmentation of transformation capacity at 400/220 kV Kochi Sub-station
- 400 kV**
- ICT bay : 1 Number
- 500 MVA, 400/220 kV ICT : 1 Number
- 220 kV**
- ICT bay : 1 Number
- f. As per the IA dated 26.10.2021, the transmission assets were scheduled to be put into commercial operation by October 2022.
- g. The scheduled commercial operation date (SCOD), date of commercial operation (COD)/ anticipated COD and time overrun in the case of the transmission assets are as follows:



<b>Assets</b>	<b>SCOD</b>	<b>COD</b>	<b>Time overrun</b>
Asset-1	31.10.2022	31.10.2022	No delay
Asset-2		31.3.2023 (Anticipated)	151 days

- h. The Petitioner, vide affidavit dated 20.9.2023, has submitted that Asset-2 was put into commercial operation on 15.7.2023 after a time overrun of 257 days, and the details are as follows:

<b>Assets</b>	<b>SCOD</b>	<b>COD</b>	<b>Time over-run</b>
Asset-2	31.10.2022	15.7.2023	257 days

4. The Respondents are distribution licensees, transmission licensees, and power departments which are procuring transmission service from the Petitioner, mainly beneficiaries of the Southern Region.

5. The Petitioner has served the petition on the Respondents and notice regarding the filing of this petition has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notice published in the newspapers by the Petitioner. None of the Respondents has filed a reply to the petition.

6. This order is issued considering the submissions made by the Petitioner in the petition dated 31.3.2023 and subsequent affidavit dated 20.9.2023.

7. The hearing in this matter was held on 27.9.2023, and the order was reserved.

8. Having heard the representatives of the Petitioner and perused the material on record, we proceed to dispose of the petition.



### Determination of Annual Fixed Charges for 2019-24 Tariff Period

9. The Petitioner has claimed the following transmission charges in respect of the transmission assets for the 2019-24 tariff period in the petition:

#### Asset-1

Particulars	(₹ in lakh)	
	2022-23 (Pro-rata 152 days)	2023-24
Depreciation	74.65	232.01
Interest on Loan	75.53	223.71
Return on Equity	79.66	247.60
Interest on Working Capital	7.12	19.37
O&M Expenses	108.11	268.25
<b>Total</b>	<b>345.07</b>	<b>990.94</b>

#### Asset-2

Particulars	(₹ in lakh)	
	2022-23 (Pro-rata 1 day)	2023-24
Depreciation	0.51	200.47
Interest on Loan	0.52	195.97
Return on Equity	0.54	211.61
Interest on Working Capital	0.05	18.12
O&M Expenses	0.72	268.25
<b>Total</b>	<b>2.34</b>	<b>894.42</b>

10. Further, the Petitioner vide affidavit dated 20.9.2023 has claimed the following transmission charges in respect of Asset-2 for the 2019-24 tariff period, as per the actual COD, i.e. 15.7.2023:

#### Asset-2

Particulars	(₹ in lakh)
	2023-24 (Pro-rata 261 days)
Depreciation	137.05
Interest on Loan	130.51
Return on Equity	144.13
Interest on Working Capital	14.47
O&M Expenses	191.30
<b>Total</b>	<b>617.46</b>



11. The details of the Interest on Working Capital (IWC) claimed by the Petitioner in respect of the transmission assets in the petition are as follows:

**Asset-1**

Particulars	(₹ in lakh)	
	2022-23 (Pro-rata 152 days)	2023-24
O&M Expenses	21.64	22.35
Maintenance Spares	38.94	40.24
Receivables	102.16	121.84
<b>Total Working Capital</b>	<b>162.74</b>	<b>184.43</b>
Rate of Interest (in %)	10.50	10.50
<b>Interest on Working Capital</b>	<b>7.12</b>	<b>19.37</b>

**Asset-2**

Particulars	(₹ in lakh)	
	2022-23 (Pro-rata 1 day)	2023-24
O&M Expenses	21.64	22.35
Maintenance Spares	38.94	40.24
Receivables	104.80	109.97
<b>Total Working Capital</b>	<b>165.38</b>	<b>172.56</b>
Rate of Interest (in %)	10.50	10.50
<b>Interest on Working Capital</b>	<b>0.05</b>	<b>18.12</b>

12. Later, the Petitioner vide affidavit dated 20.9.2023 has revised the claim of IWC in respect of Asset-2 for the 2019-24 tariff period, as per the actual COD, i.e. 15.7.2023, and it is as follows:

Particulars	(₹ in lakh)	
	2023-24 (Pro-rata 261 days)	
O&M Expenses	22.35	
Maintenance Spares	40.24	
Receivables	106.46	
<b>Total Working Capital</b>	<b>169.05</b>	
Rate of Interest (in %)	12.00	
<b>Interest on Working Capital</b>	<b>14.47</b>	





## **Date of Commercial Operation (“COD”)**

13. The Petitioner has claimed the actual COD of Asset-1 as 31.10.2022 and the anticipated COD for Asset-2 as 31.3.2023 in the petition. Later, the Petitioner vide affidavit dated 20.9.2023 claimed the actual COD for Asset-2 as 15.7.2023.

14. Regulation 5 of the 2019 Tariff Regulations provides as follows:

**“5. Date of Commercial Operation:** (1) *The date of commercial operation of a generating station or unit thereof or a transmission system or element thereof and associated communication system shall be determined in accordance with the provisions of the Grid Code.*

(2) *In case the transmission system or element thereof executed by a transmission licensee is ready for commercial operation but the interconnected generating station or the transmission system of other transmission licensee as per the agreed project implementation schedule is not ready for commercial operation, the transmission licensee may file petition before the Commission for approval of the date of commercial operation of such transmission system or element thereof:*

*Provided that the transmission licensee seeking the approval of the date of commercial operation under this clause shall give prior notice of at least one month, to the generating company or the other transmission licensee and the long-term customers of its transmission system, as the case may be, regarding the date of commercial operation:*

*Provided further that the transmission licensee seeking the approval of the date of commercial operation of the transmission system under this clause shall be required to submit the following documents along with the petition:*

- (a) Energisation certificate issued by the Regional Electrical Inspector under Central Electricity Authority;*
- (b) Trial operation certificate issued by the concerned RLDC for charging element with or without electrical load;*
- (c) Implementation Agreement, if any, executed by the parties;*
- (d) Minutes of the coordination meetings or related correspondences regarding the monitoring of the progress of the generating station and transmission systems;*
- (e) Notice issued by the transmission licensee as per the first proviso under this clause and the response;*
- (f) Certificate of the CEO or MD of the company regarding the completion of the transmission system including associated communication system in all respects.*

*(3) The date of commercial operation in case of integrated mine(s), shall mean the earliest of-*

- (a) the first date of the year succeeding the year in which 25% of the Peak Rated Capacity as per the Mining Plan is achieved; or*
- (b) the first date of the year succeeding the year in which the value of production estimated in accordance with Regulation 7A of these regulations, exceeds total expenditure in that year; or*
- (c) the date of two years from the date of commencement of production:*



*Provided that on earliest occurrence of any of the events under sub-clauses (a) to (c) of Clause (3) of this Regulation, the generating company shall declare the date of commercial operation of the integrated mine(s) under the relevant sub-clause with one week prior intimation to the beneficiaries of the end-use or associated generating station(s);*

*Provided further that in case the integrated mine(s) is ready for commercial operation but is prevented from declaration of the date of commercial operation for reasons not attributable to the generating company or its suppliers or contractors or the Mine Developer and Operator, the Commission, on an application made by the generating company, may approve such other date as the date of commercial operation as may be considered appropriate after considering the relevant reasons that prevented the declaration of the date of commercial operation under any of the sub-clauses of Clause (3) of this Regulation;*

*Provided also that the generating company seeking the approval of the date of commercial operation under the preceding proviso shall give prior notice of one month to the beneficiaries of the end-use or associated generating station(s) of the integrated mine(s) regarding the date of commercial operation.”*

15. In support of actual COD of Asset-1 and Asset-2, the Petitioner has submitted CEA Energisation Certificate dated 27.9.2022 for Asset-1 and CEA Energisation Certificate dated 22.6.2023 *vide* affidavit dated 20.9.2023 for Asset-2, under Regulation 43 of CEA (Measures relating to Safety and Electric Supply), Regulations 2010.

16. The Petitioner has submitted the SRLDC charging certificate dated 8.11.2022 for Asset-1 and the SRLDC charging certificate dated 26.7.2023 *vide* affidavit dated 20.9.2023 for Asset-2.

17. The Petitioner has also submitted the CMD certificate, as required under the Grid Code for Asset-1 dated 31.10.2022 *vide* instant petition dated 31.3.2023, and CMD certificate for Asset-2 dated 15.7.2023 *vide* affidavit dated 20.9.2023 respectively.

18. Taking into consideration the CEA energization certificate, SRLDC charging certificate and CMD certificate, the COD of Asset-1 and Asset-2 are approved as 31.10.2022 and 15.7.2023, respectively.



## **Capital Cost**

19. Regulation 19 of the 2019 Tariff Regulations provides as follows:

**“19. Capital Cost:** (1) *The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence check in accordance with these regulations shall form the basis for determination of tariff for existing and new projects.*

(2) *The Capital Cost of a new project shall include the following:*

- (a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*
- (d) *Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*
- (e) *Capitalised initial spares subject to the ceiling rates in accordance with these regulations;*
- (f) *Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*
- (g) *Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*
- (h) *Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;*
- (i) *Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
- (j) *Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;*
- (k) *Capital expenditure on account of biomass handling equipment and facilities, for co-firing;*
- (l) *Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;*
- (m) *Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;*
- (n) *Expenditure on account of change in law and force majeure events; and*
- (o) *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.*

(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.
- (4) The capital cost in case of existing or new hydro generating station shall also include:
- (a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and
  - (b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.
- (5) The following shall be excluded from the capital cost of the existing and new projects:
- (a) The assets forming part of the project, but not in use, as declared in the tariff petition;
  - (b) De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:
- Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;*
- Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.*
- (c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;
  - (d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and
  - (e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment."

20. The Petitioner has claimed capital cost incurred as on actual/anticipated COD and Additional Capital Expenditure (ACE) projected to be incurred in respect of the



transmission assets vide Auditor's Certificate dated 1.2.2023 for Asset-1 and dated 1.3.2023 for Asset-2 and the same are as follows:

(₹ in lakh)

Assets	FR apportioned approved cost	Expenditure up to actual/ anticipated COD	Projected ACE				Estimated completion cost
			2022-23	2023-24	2024-25	2025-26	
Asset-1	4895.94	2856.08	1090.10	896.04	50.00	0.00	4892.22
Asset-2	4455.06	3468.96	0.00	573.09	405.13	0.00	4447.18
<b>Total</b>	<b>9351.00</b>	<b>6325.04</b>	<b>1090.10</b>	<b>1469.13</b>	<b>455.13</b>	<b>0.00</b>	<b>9339.40</b>

21. Further, the Petitioner vide affidavit dated 20.9.2023 has submitted the modified Auditor's Certificate dated 19.9.2023 and has claimed the capital cost incurred as on actual COD of 15.7.2023 for Asset-2 and ACE projected to be incurred and the same are as follows:

(₹ in lakh)

Assets	FR apportioned approved cost	Expenditure up to actual COD	Projected ACE				Estimated completion cost
			2022-23	2023-24	2024-25	2025-26	
Asset-2	4455.06	3335.51	0.00	537.07	433.09	228.99	4534.66

### Cost Over-run

22. The details of the estimated completion cost vis-à-vis FR apportioned approved cost for the transmission assets are as follows:

(₹ in lakh)

Assets	Approved cost	Estimated completion Cost	Cost variation
Asset-1	4895.94	4892.22	(3.72)
Asset-2	4455.06	4447.18	(7.88)
<b>Total</b>	<b>9351.00</b>	<b>9339.40</b>	<b>(11.60)</b>

23. Further, the Petitioner vide affidavit dated 20.9.2023 has submitted the following modified details of estimated completion cost vis-à-vis FR apportioned approved cost of the Asset-2, as per the actual COD i.e. 15.7.2023:



(₹ in lakh)

Assets	Approved Cost	Estimated completion Cost	Cost Variation
Asset-1	4895.94	4892.22	(3.72)
Asset-2	4455.06	4534.66	79.60
Total	9351.00	9426.88	75.88

24. The estimated completion cost of Asset-2 is higher than the FR approved apportioned cost. There is a cost overrun of ₹75.88 lakh in the case of the transmission project.

25. During the hearing dated 27.9.2023, the Petitioner submitted that the Revised Cost Estimate (RCE) will be finalized and submitted after the 2019-24 control period in case there is any cost overrun considering the actual ACE incurred in the 2024-29 period.

26. The Petitioner has submitted the following reasons for cost variation in the petition in the case of Asset-1 and vide affidavit dated 20.9.2023 in the case of Asset-2:

### Asset-1

The cost variation vis-à-vis the FR apportioned cost is approximately ₹3.73 lakh.

(₹ in lakh)

Sl. No.	Description	Cost as per FR	Estimated capital cost	Cost variation
		A	B	C = A-B
	<b>Sub-stations</b>			
1	Miscellaneous Civil Works	51.57	50.00	(-1.57)
2	Switchgear	265.32	240.64	(-24.68)
3	Transformer	1994.91	1925.9	(-69.01)
4	Control & relay panel	233.00	163.15	(-69.85)
5	Sub-station Auxiliaries	614.05	886.82	272.77
6	Structure for switchyard	460.00	580.63	120.63
7	Spares	77.08	139.72	62.64
8	Taxes & Duties	611.01	560.16	(-50.85)
9	Over heads	450.00	326.04	(-123.96)
10	Interest During Construction (IDC)	139.00	19.15	(-119.85)
	<b>Grand Total</b>	<b>4895.94</b>	<b>4892.21</b>	<b>(3.73)</b>



## Asset-2

The cost overrun vis-à-vis the FR apportioned cost is approximately ₹79.60 lakh.

(₹ in lakh)				
Sl. No.	Description	Cost as per FR	Estimated capital cost	Cost variation
		A	b	C = A-B
	<b>Sub-stations</b>			
1	Miscellaneous Civil Works	405.68	397.02	(-8.66)
2	Switchgear	365.34	313.38	(-51.96)
3	Transformer	1751.53	1747.49	(-4.04)
4	Control & relay panel	131.26	117.81	(-13.45)
5	Sub-station Auxiliaries	289.90	340.83	50.93
6	Structure for switchyard	382.58	522.38	139.80
7	Spares	83.29	141.96	58.67
8	Taxes & Duties	517.48	446.90	(-70.58)
9	Communication System	0.00	16.54	16.54
10	Over heads	409.00	421.18	12.18
11	Interest During Construction (IDC)	119.00	69.17	(-49.83)
	<b>Grand Total</b>	<b>4455.06</b>	<b>4534.66</b>	<b>79.60</b>

27. We have considered the submissions made by the Petitioner. The estimated completion cost of Asset-1 is within FR cost, and the same has been allowed. The estimated completion cost of Asset-2 is more than the FR approved apportioned cost by ₹79.60 lakh. The capital cost of Asset-2 is restricted to the FR apportioned approved cost of ₹4455.06 lakh. The same will be reconsidered at the time of truing up, if RCE is submitted by the Petitioner.

## Time over-run

28. The details of SCOD, COD and time over-run in respect of the transmission assets are as follows:

Assets	SCOD	COD	Time over-run
Asset-1	31.10.2022	31.10.2022	No delay
Asset-2		15.7.2023	257 days



29. As per the IA dated 26.10.2021, the transmission assets were scheduled to be put into commercial operation by 31.10.2022, against which Asset-1 was put into commercial operation on 31.10.2022 and Asset-2 on 15.7.2023 after a time over-run of 257 days.

30. The Petitioner vide affidavit dated 20.9.2023 has submitted that the time over-run of 257 days in the case of Asset-2 was due to the additional time required for pile foundation works and associated tests at Kochi Sub-station, excess rainfall during 14.5.2022-18.5.2022 at Kochi Sub-station, banning of mineral-sand mining during 19.1.2023-10.2.2023 in Kerala, and shutdown delay approvals for ICT-3 and bay extension works.

31. The Petitioner has submitted the following chronology of events justifying the time over-run in the execution of Asset-2:

From	To	Period of Hindrance (days)	Overlapping period (days)	Net Hindrance (days)	Activity	Cause of Hindrance
		133	-	133	Erection	Pile Foundation Works, and Associated Tests at Kochi Sub-station
14.5.2022	18.5.2022	4	0	4	Erection (Pile Boring Work)	Excess Rainfall
19.1.2023	10.2.2023	22	0	22	Supply	Ban on mineral-sand mining
21.3.2023	2.4.2023	12	0	12	Erection	ICT-2 Shutdown delay
19.5.2023	21.6.2023	33	0	33	-	220 kV Bus-1 Shutdown delay
20.5.2023	25.5.2023	6	0	6	-	220 kV Bus-2 Shutdown delay
10.6.2023	20.6.2023	11	0	11	Erection	220 kV Bus-2 Shutdown delay
19.6.2023	25.6.2023	7	5	7	Erection	220 kV Bus-2 Shutdown delay





From	To	Period of Hindrance (days)	Overlapping period (days)	Net Hindrance (days)	Activity	Cause of Hindrance
12.4.2023	15.4.2023	4	4	0	-	Excess Rainfall
24.4.2023	3.5.2023	11	11	0	Erection	Excess Rainfall
31.5.2023	4.6.2023	6	2	4	Erection	Excess Rainfall
27.6.2023	28.6.2023	2	0	2	-	Excess Rainfall
2.7.2023	9.7.2023	9	0	9	-	Excess Rainfall
<b>Total</b>		<b>249(260)</b>	<b>21(22)</b>	<b>228 (243)</b>		

32. The detailed reasons submitted by the Petitioner for time overrun in the case of Asset-2 are as follows:

**1) Additional period necessitated due to pile foundation works, and associated tests at Kochi Sub-station**

After detailed engineering and soil investigation tests, the requirement of a pile foundation was envisaged for the gantry and beam structures, which was not considered in the time schedule allotted by SCM/RPC/MoP-OM. The time required for 304 numbers of pile foundations, pile integrity tests, vertical load tests, lateral load tests, and pile pull out tests were not considered in the original schedule. Further, the cutting of the existing main earth mat and relaying of the mat were required for making interconnected tie beams at pile cap level and matching the finish ground level (FGL) of existing bays with the FGL of new bays. The cutting and levelling work also took considerable time of approximately 30 days. The adoption of a pile foundation at a later stage has delayed the project by 133 days.

**2) Excess rainfall**

There was excess rainfall during 14.5.2022 to 18.5.2022, 12.4.2023 to 15.4.2023, 24.4.2023 to 3.5.2023, 31.5.2023 to 4.6.2023, 27.6.2023 to 28.6.2023, and 2.7.2023 to 9.7.2023 at the Kochi Sub-station.

Further, the pile boring work was slowed down due to unprecedented heavy rains before the monsoon from 14.5.2022 to 18.5.2022. Furthermore, the India Meteorological Department (IMD) had also forecast increased rainfall activity in Kerala and Lakshadweep during the above-mentioned periods.



### **3) Ban on Mineral-Sand mining during 19.1.2023-10.2.2023 in Kerala**

Due to agitation on the Alappuzha coast with respect to the mineral-sand mining in Kerala, the Government of Kerala banned the mineral-sand mining in the State. Further, the Small-Scale Quarry and Crusher Association (SSQA) of Kerala had called an indefinite strike against the ban from 19.1.2023. The strike ended on 10.2.2023. The strike and ban of mining activities had severely affected civil works for around 30 days.

### **4) Delay in delivery of the transformer by BHEL**

The Petitioner vide letter dated 31.1.2023 asked BHEL about the delay in delivery of 1 No. 500 MVA 400 kV Transformer, which was scheduled to be delivered by 30.1.2023 at the Kochi site. Further, the Petitioner vide letter dated 9.2.2023 informed BHEL authorities that the transformer still had not reached the Kochi site. The Petitioner vide e-mail dated 24.2.2023 informed BHEL that the 1 No. 500 MVA Transformer still had not reached the Kochi site, further emphasizing the fact that it has already been 3 months since the date of dispatch of the transformer. The details of the correspondence made by the Petitioner with BHEL in this regard are as follows:

<b>Sl. No.</b>	<b>From</b>	<b>To</b>	<b>Letter / e-mail date</b>	<b>Brief description of letter/ e-mail</b>
1	Petitioner	BHEL	31.1.2023	Requested BHEL authorities about the delay information for 1 No. 500 MVA 400 kV Transformer, which was scheduled to be delivered by 30.1.2023 at the Kochi site.
2			9.2.2023	Informed BHEL authorities that the transformer still has not reached the Kochi site
3			24.2.2023	Informed BHEL that the transformer still has not reached the Kochi site

### **5) Delay in getting approvals of shutdown for ICT-3 and bay extension work**

Since Kochi Sub-station is an existing sub-station, shutdown of ICT-2, the shutdown of 220 kV Bus-1 and Bus-2, etc., were required for the construction and commercial operation of Asset-2. The delay in approval of shutdowns due to system conditions is as follows:



ICT-2 Shutdown delay (21.3.2023 to 2.4.2023)

The 400/220 kV Kochi ICT-2 shutdown on 19.3.2023 was rejected because KSEBL did not concur with the Petitioner's proposal. Further, the ICT-2 shutdown was finally done on 2.4.2023 for the erection work of the ICT-3 220 kV side tower.

220 kV Bus-1 Shutdown delay (19.5.2023 to 21.6.2023)

The 220 kV Bus-1 shutdown on 20.5.2023 was rejected in view of the Palakkad ICT shutdown. The Petitioner vide letter dated 17.6.2023 informed SRLDC that the upcoming 220 kV Bus-1 shutdown was approved on 9.6.2023 in 202<sup>nd</sup> Mid OCC and could not be availed of by the Petitioner due to intermittent rains and bad weather conditions. Further, the Petitioner requested for the 220 kV Bus-1 shutdown to be scheduled on 21.6.2023. The 220 kV Bus-1 shutdown was finally approved for 21.6.2023, which was required for the extension of 220 kV Bus-1 to ICT-3 220 kV Bay and carrying bus bar-1 stability checks of ICT-3 under bay extension works at Kochi.

220 kV Bus-2 Shutdown delay: 20.5.2023 to 25.5.2023

The Petitioner has submitted that the 220 kV Bus-1 shutdown on 20.5.2023 was rejected in view of the Palakkad ICT shutdown. Later, the 220 kV Bus-2 shutdown was finally done on 25.5.2023, required for IPS tube and BPI erection.

220 kV Bus-2 Shutdown delay: 10.6.2023 to 20.6.2023

The Petitioner vide letter dated 17.6.2023 informed SRLDC that the upcoming 220 kV Bus-2 shutdown approved for 10.6.2023 in 202<sup>nd</sup> Mid OCC could not be availed of by the Petitioner due to intermittent rains and bad weather conditions. Further, the Petitioner requested that the 220 kV Bus-2 Shutdown be scheduled for 20.6.2023. Later, the 220 kV Bus-2 Shutdown was approved by SRLDC on 20.6.2023, which was required for the extension of 220 kV Bus-2 to ICT-3 220 kV Bay and carrying bus bar and line protection stability checks.

220 kV Bus-2 Shutdown delay: 19.6.2023 to 25.6.2023

The Petitioner vide letter dated 21.6.2023 informed SRLDC that the upcoming 220 kV Bus-2 shutdown approved for 20.6.2023 could not be availed of by the



Petitioner, as it was deferred by KSEB/ SRLDC. Further, the Petitioner requested for the 220 kV Bus-2 Shutdown be scheduled for 25.6.2023. The Petitioner submitted that the 220 kV Bus-2 shutdown was finally done on 25.6.2023, which was required for the extension of 400 kV Bus-1 to new ICT-3 400 kV Bay and carrying bus bar-2 stability checks under bay extension works at Kochi.

33. We have considered the submission made by the Petitioner and have gone through the documents in support of its contentions. As per I.A. dated 26.10.2021, the SCOD of the transmission assets was 31.10.2022. Asset-1 was put into commercial operation on 31.10.2022. Thus, there is no time over-run in the case of Asset-1, as stated above. Asset-2 was put into commercial operation on 15.7.2023 with a time over-run of 257 days. The Petitioner has attributed the time over-run in the case of Asset-2 to pile foundation works and associated tests at Kochi Sub-station, excess rainfall, a delay in the delivery of transformer, a ban on mineral sand mining, a delay in getting approvals for the shutdown of ICT-3 and bay extension works. The item-wise time over-run is analysed, and the same is as follows:

Delay due to pile foundation work

The Petitioner has submitted that it took 133 additional days because of the pile foundation works, which was not envisaged at the time of planning. However, the Petitioner has not submitted the details about when the pile foundation work started and when it was completed. In this regard, we would refer to Regulation 22(1) of the 2019 Tariff Regulations, which defines the “controllable factors” as follows:

**“22. Controllable and Uncontrollable factors:** *The following shall be considered as controllable and uncontrollable factors for deciding time over-run, cost escalation, IDC and IEDC of the new projects:*

*(1) The “controllable factors” shall include but shall not be limited to the following:*

*a. Efficiency in the implementation of the new projects not involving approved change in scope of such new projects, change in statutory levies or change in law or force majeure events; and*



*b. Delay in execution of the new projects on account of contractor or supplier or agency of the generating company or transmission licensee.”*

34. The Petitioner’s failure to envisage the pile foundation work in the existing sub-station, especially with its vast experience, is a lapse on the part of the Petitioner. We are of the view that it is a “controllable factor” which could have been avoided with proper planning. Therefore, we reject the Petitioner’s request for condonation of 133 days of time over-run due to the requirement of pile foundation works in Kochi Sub-station.

Delay due to excess rainfall

The Petitioner has submitted that excess rainfall from 14.5.2022 to 18.5.2022 at the Kochi Sub-station impacted the pile foundation work. The Petitioner has further submitted that heavy rains for 33 days, as per the following details, also led to time over-run in the case of Asset-2:

<b>Period</b>	<b>Period of Hindrance</b>
12.4.2023 to 15.4.2023	4 days
24.4.2023 to 3.5.2023	11 days
31.5.2023 to 4.6.2023	6 days
27.6.2023 to 28.6.2023	3 days
2.7.2023 to 28.6.2023	9 days

35. We have considered the Petitioner’s submissions. The Petitioner has submitted random paper clippings as documentary evidence to show that there was heavy rainfall, which led to the time over-run in the case of Asset-2. Regulation 3(25) of 2019 Tariff Regulations defines “*force majeure*” as follows:

*“(25) ‘Force Majeure’ for the purpose of these regulations means the events or circumstances or combination of events or circumstances including those stated below which partly or fully prevents the generating company or transmission licensee to complete the project within the time specified in the Investment Approval, and only if such events or circumstances are not within the control of the generating company or transmission licensee and could not have been avoided, had the generating company or transmission licensee taken reasonable care or complied with prudent utility practices:*

*(a) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or*



*exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or”*

36. As per the regulation mentioned above, the Petitioner has to submit data for the last hundred years to show that the rain during the above-mentioned period was abnormal. As the Petitioner has not submitted any such information to show that the rain during the said period was abnormal, we are not able to accept the Petitioner's claim that the rain during the said period was abnormal and it affected the execution of Asset-2. Hence, the delay of 33 days attributed to excess rainfall is not condoned.

Delay due to ban on mineral sand mining

The Petitioner has submitted that the time period from 19.1.2023 to 10.2.2023 was delayed on account of the ban on mineral-sand mining in Kerala. We have considered the submission of the Petitioner and gone through the documents submitted by the Petitioner. The Petitioner has submitted random paper clippings but the paper clippings are related to rain and not to the ban on sand mining. Due to non- submission of valid documents in support of its claim, we are unable to analyse the impact of the ban on sand mining. Therefore, we are not inclined to condone the delay of 22 days between 19.1.2023 and 10.2.2023 on account of the ban on mineral-sand mining.

Delay in getting shut down for ICT and bay extension works

The Petitioner has submitted that about 69 days were impacted on account of getting the approvals for the shutdown of ICT and bay extensions works. The Petitioner has submitted various OCC minutes wherein the status of shutdown details is mentioned. We have gone through the minutes of OCC pertaining to the approval of several shutdowns. We are of the view that the time period of 69 days on account of shutdown approval is beyond the control of the Petitioner. Accordingly, the same is condoned.

Delay in the delivery of the transformer by BHEL

The Petitioner has submitted that there was a delay in the delivery of the transformer at the site by BHEL. However, the Petitioner has not claimed any



specific time period for condonation of time due to this reason. In any case, the delay in the execution of the project on account of the contractor/supplier/agency of a transmission licensee is a “controllable factor” as per Regulation 22(1) of the 2019 Tariff Regulations. Therefore, any time over-run on account of delay in delivery of the transformer by BHEL to the Petitioner is not condonable.

37. In view of the above discussions, the time over-run of 69 days in the case of Asset-2 due to the delay in getting shut down for ICT and bay extension works is condoned, and the remaining time over-run of 188 days is not condoned. The summary of the time over-run condoned/ not condoned in respect of Asset-2 is as follows:

Assets	SCOD	Actual COD	Time over-run	Time over-run condoned	Time over-run not condoned
Asset-1	31.10.2022	31.10.2022	No delay	Nil	Nil
Asset-2		15.7.2023	257 days	69 days	188 days

**Interest During Construction (IDC)/ Incidental Expenditure During Construction (IEDC)**

38. The Petitioner has claimed IDC for Asset-1 as per the petition and for Asset-2 as per the affidavit dated 20.9.2023. Further, the Petitioner has submitted the statement showing the IDC claim and discharge of IDC liability as on COD and thereafter, and the same is as follows:

(₹ in lakh)				
Assets	IDC as per Auditor's Certificate	IDC discharged up to COD	IDC discharged during 2022-23	IDC discharged during 2023-24
Asset-1	19.15	6.58	12.57	0.00
Asset-2	69.17	35.06	0.00	34.12
<b>Total</b>	<b>88.32</b>	<b>41.64</b>	<b>12.57</b>	<b>34.12</b>

39. We have considered the submissions of the Petitioner. As discussed above, there is no time over-run in the case of Asset-1. However, the time over-run in the case of Asset-2 has been partially condoned. Accordingly, the IDC on a cash basis up to the



COD has been worked out based on the loan details given in the statement showing the discharge of IDC and Form-9C for the transmission assets. The IDC claimed and considered as on COD and summary of discharge of IDC liability up to COD and thereafter for the purpose of tariff determination subject to revision at the time of truing up is as follows:

(₹ in lakh)					
Assets	IDC as per Auditor's Certificate	IDC disallowed due to time over-run not condoned	IDC allowed	IDC discharged upto COD	IDC discharged during 2022-23
Asset-1	19.15	0.00	19.15	6.58	12.57
Asset-2	69.17	64.83	4.34	4.34	0.00

40. The Petitioner has claimed IEDC for the transmission assets as per the Auditor's Certificate dated 1.2.2023 for Asset-1 and as per the Modified Auditor's Certificate dated 19.9.2023 for Asset-2. As the time over-run for Asset-2 has been partially condoned, a certain amount of IEDC has been disallowed in the case of Asset-2. The details of IEDC claimed as per Auditor's Certificate, IEDC considered and discharged up to COD is as follows:

(₹ in lakh)			
Assets	IEDC claimed as per Auditor's Certificate	IEDC disallowed due to time over-run not condoned	IEDC Allowed
	(A)	(B)	(A-B)
Asset-1	326.04	0.00	326.04
Asset-2	421.18	126.29	294.89
<b>Total</b>	<b>747.22</b>	<b>126.29</b>	<b>620.93</b>

### **Initial Spares**

41. Regulation 23(d) of the 2019 Tariff Regulations provides that Initial Spares shall be capitalised as a percentage of plant and machinery cost up to the cut-off date, subject to the following ceiling norms:

**“23. Initial Spares:** Initial spares shall be capitalised as a percentage of the Plant and Machinery cost, subject to following ceiling norms:





....

(d) Transmission System

- i. Transmission line: 1.00%
- ii. Transmission sub-station
  - Green Field: 4.00%
  - Brown Field: 6.00%
- iii. Series Compensation devices and HVDC Station: 4.00%
- iv. Gas Insulated Sub-station (GIS)
  - Green Field: 5.00%
  - Brown Field: 7.00%
- v. Communication System: 3.50%
- vi. Static Synchronous Compensator: 6.00%

42. The Initial Spares, as claimed by the Petitioner for the transmission assets, are as follows:

(₹ in lakh)

Assets	Particulars	Plant and machinery cost	Initial Spares claimed		Ceiling limit as per Regulations (in %)	Initial Spares worked out
			Amount (₹)	Percentage (in %)		
		A	B		C	$D = [(A-B) * C / (100-C)]$
Asset-1	Sub-station (Brown Field)	4497.02	139.72	3.01	6.00	278.13
Asset-2	Sub-station (Brown Field)	3650.03	142.49	3.82	6.00	223.89

43. Further, the Petitioner, vide affidavit dated 20.9.2023, has submitted the following modified details of the Initial Spares for Asset-2 as per the actual COD of 15.7.2023:

(₹ in lakh)

Assets	Particulars	Plant and machinery cost	Initial spares claimed		Ceiling limit as per Regulations (in %)	Initial Spares worked out
			Amount (₹)	Percentage (in %)		
		A	B		C	$D = [(A-B) * C / (100-C)]$
Asset-2	Sub-station (Brown Field)	3619.70	141.96	3.84	6.00	221.98

44. We have considered the submissions of the Petitioner. The Initial Spares in respect of the transmission assets are allowed as per Regulation 23(d) of the 2019 Tariff



Regulations, i.e. the percentage of the plant and machinery cost as on the cut-off date on an individual basis. The Initial Spares allowed for the transmission assets are as follows:

(₹ in lakh)

Assets	Particulars	Plant and Machinery cost (excluding IDC/IEDC, land cost & cost of civil works) (₹ in lakh)	Initial Spares claimed (₹ in lakh)	Norms as per 2019 Tariff Regulations (in %)	Initial Spares allowable (₹ in lakh)	Initial Spares disallowed (₹ in lakh)	Initial Spares allowed (₹ in lakh)
		A	B	C	$D=(A-B)*C/(100-C)$	E=B-D	
Asset-1	Sub-station (Brownfield)	4357.31	139.72	6.00	269.21	0.00	139.72
Asset-2	Sub-station (Brownfield)	3477.74	141.96	6.00	212.92	0.00	141.96

45. The Initial Spares claimed for Asset-1 and Asset-2 are within the ceiling limit as per the Regulation 29(d) of the 2019 Tariff Regulations.

#### **Capital Cost allowed as on COD**

46. The capital cost allowed on the COD for the transmission assets is as follows:

(₹ in lakh)

Assets	Capital cost claimed as on COD	IDC disallowed	Undischarged IDC as on COD	IEDC disallowed	Capital cost considered as on COD
	(A)	(B)	(C)	(D)	(E=A-B-C-D)
Asset-1	2856.08	0.00	12.57	0.00	2843.51
Asset-2	3335.51	64.83	0.00	126.29	3144.39
<b>Total</b>	<b>6191.59</b>	<b>64.83</b>	<b>12.57</b>	<b>126.29</b>	<b>5987.90</b>

#### **Additional Capital Expenditure (“ACE”)**

47. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as under:

**“24. Additional Capitalisation within the original scope and upto the cut-off date**

(1) The additional capital expenditure in respect of a new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (a) Undischarged liabilities recognized to be payable at a future date;
- (b) Works deferred for execution;



- (c) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;
- (d) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law;
- (e) Change in law or compliance of any existing law; and
- (f) Force Majeure events:

*Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.*

*(2) The generating company or the transmission licensee, as the case may be shall submit the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution.”*

**25. Additional Capitalisation within the original scope and after the cut-off date**

*(1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:*

- (a) *Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
- (b) *Change in law or compliance of any existing law;*
- (c) *Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (d) *Liability for works executed prior to the cut-off date;*
- (e) *Force Majeure events;*
- (f) *Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;  
Raising of ash dyke as a part of ash disposal system.*

*(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:*

- (a) *The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;*
- (b) *The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;*
- (c) *The replacement of such asset or equipment is necessary on account of obsolescence of technology; and*
- (d) *The replacement of such asset or equipment has otherwise been allowed by the Commission.*

48. The Petitioner has claimed that the ACE incurred/projected to be incurred is mainly on account of balance/ retention payments and, hence, the same is claimed



under Regulation 24(1)(a) and Regulation 24(1)(b) of the 2019 Tariff Regulations. The Petitioner has claimed the following ACE, including the discharge of IDC:

Assets	FR approved cost	Projected ACE 2019-24				Total projected ACE
		2022-23	2023-24	2024-25	2025-26	
Asset-1	4895.94	1102.67	896.04	50.00		2048.71
Asset-2	4455.06		537.07	433.09	228.99	1199.15
<b>Total</b>	<b>9351.00</b>	<b>1102.67</b>	<b>1433.11</b>	<b>483.09</b>	<b>228.99</b>	<b>3247.86</b>

49. The details of ACE claimed by the Petitioner for the transmission assets are as follows:

#### Asset-1

Party	Particulars	Discharge		Additional liability recognized		Total 2022-23	Total 2023-24
		2022-23	2023-24	2022-23	2023-24		
Linxon India Private Limited	Sub-station	115.54	115.54	607.52	260.37	723.06	375.91
Toshiba T&D System	Sub-station	367.03	197.94	0.00	84.78	367.03	282.72
Miscellaneous Site Packages	Sub-station	0.00	0.00	0.00	237.42	0.00	237.42
Miscellaneous Site Packages (Comm. Hall)	Building	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total ACE</b>		<b>482.57</b>	<b>313.47</b>	<b>607.52</b>	<b>582.57</b>	<b>1090.09</b>	<b>896.04</b>

#### Asset-2

Party	Particulars	Discharge	Additional liability recognized	Total 2023-24
		2023-24	2023-24	
Linxon India Private Limited	Sub-station	127.29	115.83	243.12
Linxon India Private Limited	IT Equipment	0.00	0.68	0.68
Toshiba T&D System (Ind) Private	Sub-station	22.19	0.38	22.57
Bharat Heavy Electrical Limited	Sub-station	195.15	18.30	213.45



Party	Particulars	Discharge	Additional liability recognized	Total 2023-24
		2023-24	2023-24	
Miscellaneous Site Packages	Sub-station	0.00	17.55	17.55
Miscellaneous Site Packages	Building	0.00	39.70	39.70
<b>Total ACE</b>		<b>344.63</b>	<b>192.44</b>	<b>537.07</b>

50. We have considered the Petitioner's submissions. The COD of Asset-1 and Asset-2 are 31.10.2022 and 15.7.2023. Accordingly, the cut-off dates of Asset-1 and Asset-2 work out to be 31.10.2025 and 30.7.2026. The Petitioner has projected ACE for FY 2024-25 and FY 2025-26, and the same will be dealt with as per the applicable 2024 Tariff Regulations at the time of truing-up of tariff for the 2019-24 tariff period.

51. The un-discharged IDC, as on COD, has been allowed as ACE during the year of its discharge. ACE claimed by the Petitioner for Asset-1 and Asset-2 is allowed under Regulation 24(1)(a) and Regulation 24(1)(b) of the 2019 Tariff Regulations. The allowed ACE is as follows:

#### Asset-1

(₹ in lakh)			
Particulars	Regulations	ACE allowed	
		2022-23	2023-24
Balance and retention payments for liabilities other than IDC	24(1)(a) and 24(1)(b)	1090.10	896.04
IDC Discharged after COD		12.57	0.00
<b>Total ACE</b>		<b>1102.67</b>	<b>896.04</b>

#### Asset-2

(₹ in lakh)		
Particulars	Regulations	ACE allowed
		2023-24
Balance and retention payments for liabilities other than IDC	24(1)(a) and 24(1)(b)	537.07
IDC Discharged after COD		0.00
<b>Total ACE</b>		<b>537.07</b>



52. Accordingly, ACE allowed in respect of the transmission assets is subject to truing up, and the same is as follows:

Assets	Capital cost as on COD	ACE 2019-24		Capital cost as on 31.3.2024
		2022-23	2023-24	
Asset-1	2843.51	1102.67	896.04	4842.22
Asset-2	3144.39	0.00	537.07	3681.46
<b>Total</b>	<b>5987.90</b>	<b>1102.67</b>	<b>1433.11</b>	<b>8523.68</b>

(₹ in lakh)

### **Debt-Equity ratio**

53. Regulation 18 of the 2019 Tariff Regulations provides as follows:

**“18. Debt-Equity Ratio:** (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.”

(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation.”

54. Debt-equity ratio considered for the purpose of computation of tariff for the 2019-24 tariff period is as follows:

#### **Asset-1**

Particulars	Capital cost as on COD (₹ in lakh)	(in %)	ACE during 2019-24 (₹ in lakh)	(in %)	Capital cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	1990.46	70.00	1399.10	70.00	3389.55	70.00
Equity	853.05	30.00	599.61	30.00	1452.67	30.00
<b>Total</b>	<b>2843.51</b>	<b>100.00</b>	<b>1998.71</b>	<b>100.00</b>	<b>4842.22</b>	<b>100.00</b>

#### **Asset-2**

Particulars	Capital Cost as on COD (₹ in lakh)	(in %)	ACE during 2019-24 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	2201.07	70.00	375.95	70.00	2577.02	70.00
Equity	943.32	30.00	161.12	30.00	1104.44	30.00
<b>Total</b>	<b>3144.39</b>	<b>100.00</b>	<b>537.07</b>	<b>100.00</b>	<b>3681.46</b>	<b>100.00</b>

#### **Depreciation**

55. Regulation 33 of the 2019 Tariff Regulations provides as follows:

**“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 31<sup>st</sup> 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.*

*(9) Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (8) of this Regulation.*

*(10) Depreciation of the emission control system of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of-*

*a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or*

*b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or*

*c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.”*

56. The depreciation has been worked out considering the admitted capital cost as on COD, i.e. 31.10.2022 for Asset-1 and 15.7.2023 for Asset-2, respectively. The weighted average rate of depreciation (WAROD) has been worked as per the rates of depreciation prescribed in the 2019 Tariff Regulations, and the WAROD is placed in Annexure. The depreciation allowed for the transmission assets is as follows:



## Asset-1

		(₹ in lakh)	
	Particulars	2022-23 (Pro-rata 152 days)	2023-24
	<b>Depreciation</b>		
A	Opening Gross Block	2843.51	3946.18
B	ACE	1102.67	896.04
C	Closing Gross Block (A+B)	3946.18	4842.22
D	Average Gross Block (A+C)/2	3394.85	4394.20
E	Weighted average rate of Depreciation (WAROD) (in %)	5.28	5.28
F	Balance useful life of the asset (Year)	25	25
G	Aggregate Depreciable Value	3055.36	3954.78
<b>H</b>	<b>Combined Depreciation during the year</b>	<b>74.65</b>	<b>232.01</b>
I	Aggregate Cumulative Depreciation	74.65	306.66
J	Remaining Aggregate Depreciable Value (G-I)	2980.71	3648.12

## Asset-2

		(₹ in lakh)
	Particulars	2023-24 (Pro-rata 261 days)
	<b>Depreciation</b>	
A	Opening Gross Block	3144.39
B	ACE	537.07
C	Closing Gross Block (A+B)	3681.46
D	Average Gross Block (A+C)/2	3412.92
E	Weighted average rate of Depreciation (WAROD) (in %)	5.36
F	Balance useful life of the asset (Year)	25
G	Aggregate Depreciable Value	3074.73
<b>H</b>	<b>Combined Depreciation during the year</b>	<b>130.38</b>
I	Aggregate Cumulative Depreciation	130.38
J	Remaining Aggregate Depreciable Value (G-I)	2944.35

## Interest on Loan ("IoL")

57. Regulation 32 of the 2019 Tariff Regulations provides as follows:

**"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.

(5a) The rate of interest on loan for installation of emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company 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.”

58. The Petitioner has claimed the weighted average rate of IoL based on its actual loan portfolio and rate of interest. Accordingly, IoL has been calculated based on the actual interest rate for Asset-1 and for Asset-2 vide affidavit dated 20.9.2023, in accordance with Regulation 32 of the 2019 Tariff Regulations. The IoL allowed for the transmission assets is as follows:

### **Asset-1**

		(₹ in lakh)	
	Particulars	2022-23 (Pro-rata 152 days)	2023-24
A	Gross Normative Loan	1990.46	2762.33
B	Cumulative Repayments upto Previous Year	0.00	74.65
C	Net Loan-Opening (A-B)	1990.46	2687.68



	Particulars	2022-23 (Pro-rata 152 days)	2023-24
D	Additions	771.87	627.23
E	Repayment during the year	74.65	232.01
F	Net Loan-Closing (C+D-E)	2687.68	3082.89
G	Average Loan (C+F)/2	2339.07	2885.29
H	Weighted Average Rate of Interest on Loan (in %)	7.7533	7.7533
I	<b>Interest on Loan (G*H)</b>	<b>75.52</b>	<b>223.71</b>

## Asset-2

	Particulars	(₹ in lakh) 2023-24 (Pro-rata 261 days)
A	Gross Normative Loan	2201.07
B	Cumulative Repayments upto Previous Year	0.00
C	Net Loan-Opening (A-B)	2201.07
D	Additions	375.95
E	Repayment during the year	130.38
F	Net Loan-Closing (C+D-E)	2446.64
G	Average Loan (C+F)/2	2323.86
H	Weighted Average Rate of Interest on Loan (in %)	7.4934
I	<b>Interest on Loan (G*H)</b>	<b>124.18</b>

## Return on Equity (“RoE”)

59. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations provide as follows:

**“30. Return on Equity:** (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 station, 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 on 7 account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.*

*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.”*

*(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in which the date of operation (ODe) occurs plus 350 basis point, subject to ceiling of 14%;*

**“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:*

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

*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 a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

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

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

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

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

(c) Effective Tax Rate for the year 2019-20 = ₹ 240 Crore / ₹ 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 customers, as the case may be, on year to year basis.”

60. The Petitioner has submitted that the MAT rate is applicable to the Petitioner company. Accordingly, the MAT rate applicable in 2019-20 has been considered for the purpose of RoE, which shall be trued up with the actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE has been worked out and allowed for Asset-1 and for Asset-2 vide affidavit dated 20.9.2023 is as follows:

**Asset-1**

(₹ in lakh)			
	Particulars	2022-23 (Pro-rata 152 days)	2023-24
A	Opening Equity	853.05	1183.85
B	Additions	330.80	268.81
C	Closing Equity (A+B)	1183.85	1452.67
D	Average Equity (A+C)/2	1018.45	1318.26
E	Return on Equity (Base Rate) (in %)	15.500	15.500
F	MAT Rate for the respective year (in %)	17.472	17.472



	Particulars	2022-23 (Pro-rata 152 days)	2023-24
G	Rate of Return on Equity (in %)	18.782	18.782
H	<b>Return on Equity (D*G)</b>	<b>79.66</b>	<b>247.60</b>

### Asset-2

(₹ in lakh)

	Particulars	2023-24 (Pro-rata 261 days)
A	Opening Equity	943.32
B	Additions	161.12
C	Closing Equity (A+B)	1104.44
D	Average Equity (A+C)/2	1023.88
E	Return on Equity (Base Rate) (in %)	15.500
F	MAT Rate for respective year (in %)	17.472
G	Rate of Return on Equity (in %)	18.782
H	<b>Return on Equity (D*G)</b>	<b>137.14</b>

### Operation & Maintenance Expenses (“O&M Expenses”)

61. The O&M Expenses claimed by the Petitioner for Asset-1 and for Asset-2, vide affidavit dated 20.9.2023, for the 2019-24 tariff period are as follows:

#### **Asset-1**

(₹ in lakh)

Particulars	2022-23 (Pro-rata 152 days)	2023-24
<i>400 kV Sub-station</i>		
Number of Units	1	1
Norms (₹ lakh/bay)	35.66	36.91
O&M Expenses	14.85	36.91
<i>200 kV Sub-station</i>		
Number of Units	1	1
Norms (₹ lakh/bay)	24.96	25.84
O&M Expenses	10.39	25.84
<i>400 kV Sub-station ICT</i>		
Number of Units	1	1
Norms (₹ lakh/bay)	0.398	0.411
O&M Expenses	82.87	205.50
<b>Total O&amp;M Expenses</b>	<b>108.11</b>	<b>268.25</b>



## Asset-2

Particulars	(₹ in lakh)
	2023-24 (Pro-rata 261 days)
<b>400 kV Sub-station</b>	
Number of Units	1
Norms (₹ lakh/bay)	36.91
O&M Expenses	26.32
<b>200 kV Sub-station</b>	
Number of Units	1
Norms (₹ lakh/bay)	25.84
O&M Expenses	18.43
<b>400 kV Sub-station ICT</b>	
Number of Units	1
Norms (₹ lakh/bay)	0.411
O&M Expenses	146.55
<b>Total O&amp;M Expenses</b>	<b>191.30</b>

62. The norms specified under Regulation 35(3)(a) of the 2019 Tariff Regulations provide as follows:

### “35. Operation and Maintenance Expenses:

(3) **Transmission system:** (a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Norms for sub-station Bays (₹ Lakh per bay)</b>					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
<b>Norms for Transformers (₹ Lakh per MVA)</b>					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
<b>Norms for AC and HVDC lines (₹ Lakh per km)</b>					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867





<b>Particulars</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more sub-conductors)	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single Conductor)	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.319	2.401	2.485	2.572	2.662
Multi Circuit (Twin & Triple Conductor)	1.544	1.598	1.654	1.713	1.773
<b>Norms for HVDC stations</b>					
HVDC Back-to-Back stations (₹ Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1666	1725	1785	1848	1913
500 kV Rihand-Dadri HVDC bipole scheme (₹ Lakh) (1500 MW)	2252	2331	2413	2498	2586
±500 kV Talcher- Kolar HVDC bipole scheme (₹ Lakh) (2000 MW)	2468	2555	2645	2738	2834
±500 kV Bhiwadi-Balia HVDC bipole scheme (₹ Lakh) (2500 MW)	1696	1756	1817	1881	1947
±800 kV, Bishwanath-Agra HVDC bipole scheme (₹ Lakh)(3000 MW)	2563	2653	2746	2842	2942

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;

Provided further that:

- (i) the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;
- (ii) the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;
- (iii) the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2500 MW) shall be allowed as worked out by multiplying 0.80 of the



normative O&M expenses for  $\pm 500$  kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);

(iv) the O&M expenses of  $\pm 800$  kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for  $\pm 800$  kV, Bishwanath-Agra HVDC bi-pole scheme;

(v) the O&M expenses of  $\pm 800$  kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for  $\pm 800$  kV, Bishwanath-Agra HVDC bi-pole scheme; and

(vi) the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.

(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of sub-station bays, transformer capacity of the transformer (in MVA) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA and per km respectively.

(c) The Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check:

Provided that the transmission licensee shall submit the assessment of the security requirement and estimated security expenses, the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification.”

63. We have considered the submissions of the Petitioner. The O&M Expenses allowed for 2019-24 tariff period are as follows:

**Asset-1**

Particulars	₹ in lakh	
	2022-23 (Pro-rata 152 days)	2023-24
<b>400 kV Sub-station</b>		
Number of Units	1	1
Norms (₹ lakh/bay)	35.66	36.91
O&M Expenses	14.85	36.91
<b>200 kV Sub-station</b>		
Number of Units	1	1
Norms (₹ lakh/bay)	24.96	25.84
O&M Expenses	10.39	25.84
<b>400 kV Sub-station ICT</b>		
Number of Units	1	1
Norms (₹ lakh/bay)	0.398	0.411



Particulars	2022-23 (Pro-rata 152 days)	2023-24
O&M Expenses	82.87	205.50
<b>Total O&amp;M Expenses</b>	<b>108.12</b>	<b>268.25</b>

### Asset-2

Particulars	(₹ in lakh)
	2023-24 (Pro-rata 261 days)
<b>400 kV Sub-station</b>	
Number of Units	1
Norms (₹ lakh/bay)	36.91
O&M Expenses	26.32
<b>200 kV Sub-station</b>	
Number of Units	1
Norms (₹ lakh/bay)	25.84
O&M Expenses	18.43
<b>400kV Sub-station ICT</b>	
Number of Units	1
Norms (₹ lakh/bay)	0.411
O&M Expenses	146.55
<b>Total O&amp;M Expenses</b>	<b>191.29</b>

### Interest on Working Capital (“IWC”)

64. Regulation 34(1)(c), Regulation 34(3), Regulation 34(4) and Regulation 3(7) of the 2019 Tariff Regulations specify as follows:

**“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.*

(2) *The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:*

*Provided that in case of new generating station, the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account*



*normative transit and handling losses in terms of Regulation 39 of these regulations) and gross calorific value of the fuel as per actual weighted average for three months, as used for infirm power, preceding date of commercial operation for which tariff is to be determined.*

*(3) Rate of interest on working capital shall be on normative basis and shall be considered as the 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 at bank rate as on 1st 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.”*

**“3. Definitions.** - *In these regulations, unless the context otherwise requires:-*

*(7) ‘Bank Rate’ means the one year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;”*

65. The Petitioner has submitted that it has claimed IWC for the 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1<sup>st</sup> April of the year in which the transmission system is declared under commercial operation i.e. 1.4.2022 for Asset-1 and 1.4.2023 for Asset-2. Accordingly, the Petitioner has considered the rate of IWC as 10.50% for Asset-1 and 12.00% for Asset-2.

66. We have considered the submission of the Petitioner. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (RoI) considered is 10.50% (SBI 1-year MCLR applicable as on 1.4.2022 of 7.00% plus 350 basis points) for Asset-1 and 12.00% (SBI 1-year MCLR applicable as on 1.4.2023 of 8.50% plus 350 basis points) for Asset-2.

67. The following components of the working capital and interest thereon allowed for Asset-1 and for Asset-2 vide affidavit dated 20.9.2023 are as follows:



### Asset-1

(₹ in lakh)

	Particulars	2022-23 (Pro-rata 152 days)	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	21.64	22.35
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	38.94	40.24
C	Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	102.16	122.18
D	Total Working Capital (A+B+C)	<b>162.73</b>	<b>184.77</b>
E	Rate of Interest (in %)	10.50	12.00
F	<b>Interest on Working Capital (D*E)</b>	<b>7.12</b>	<b>22.17</b>

### Asset-2

(₹ in lakh)

	Particulars	2023-24 (Pro-rata 261 days)
A	Working Capital for O&M Expenses (O&M Expenses for one month)	22.35
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	40.24
C	Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	102.96
D	Total Working Capital (A+B+C)	<b>165.55</b>
E	Rate of Interest (in %)	12.00%
F	<b>Interest on Working Capital (D*E)</b>	<b>14.17</b>

### Annual Fixed Charges for the 2019-24 Tariff Period

68. The following transmission charges are allowed for the transmission assets for the 2019-24 tariff period :

### Asset-1

(₹ in lakh)

Particulars	2022-23 (Pro-rata 152 days)	2023-24
Depreciation	74.65	232.01
Interest on Loan	75.52	223.71
Return on Equity	79.66	247.60
O&M Expenses	108.12	268.25



Particulars	2022-23 (Pro-rata 152 days)	2023-24
Interest on Working Capital	7.12	22.17
<b>Total</b>	<b>345.07</b>	<b>993.74</b>

### **Asset-2**

Particulars	(₹ in lakh)
	2023-24 (Pro-rata 261 days)
Depreciation	130.38
Interest on Loan	124.18
Return on Equity	137.14
O&M Expenses	191.29
Interest on Working Capital	14.17
<b>Total</b>	<b>597.16</b>

### **Filing Fee and the Publication Expenses**

69. The Petitioner has sought reimbursement of the fee paid by it for filing the petition and publication expenses. The Petitioner shall be entitled to reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on a pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

### **Licence Fee & RLDC Fees and Charges**

70. The Petitioner shall be entitled to reimbursement of licence fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for 2019-24 tariff period. The Petitioner shall also be entitled to recovery of RLDC fees and charges in accordance with Regulation 70(3) of the 2019 Tariff Regulations for 2019-24 tariff period.

### **Goods and Services Tax**

71. The Petitioner has submitted that if GST is levied at any rate and at any point of time in future on charges of transmission of electricity, the same shall be borne and additionally paid by the Respondent(s) to the Petitioner and the same shall be charged and billed separately by the Petitioner. Further additional taxes, if any, are to be paid by



the Petitioner on account of demand from Government/ Statutory authorities, and the same may be allowed to be recovered from the beneficiaries.

72. We have considered the submissions of the Petitioner. Since GST is not levied on transmission service at present, we are of the view that the Petitioner's prayer is premature.

### **Security Expenses**

73. The Petitioner has submitted that security expenses for the transmission assets are not claimed in the instant petition, and it would file a separate petition for claiming the overall security expenses and the consequential IWC.

74. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on a projected basis for the 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The said petition has already been disposed of by the Commission vide order dated 3.8.2021. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC is infructuous.

### **Capital Spares**

75. The Petitioner has sought reimbursement of capital spares at the end of the tariff period. The Petitioner's claim, if any, shall be dealt with in accordance with the provisions of the 2019 Tariff Regulations.

### **Sharing of Transmission Charges**

76. The billing, collection, and disbursement of transmission charges approved in this order shall be governed by provisions of the Central Electricity Regulatory



Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2020 as provided in terms of Regulation 57 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.

77. To summarise, the AFC allowed for the transmission assets for the 2019-24 tariff period in this order is as follows:

**Asset-1**

Particulars	(₹ in lakh)	
	2022-23 (Pro-rata 152 days)	2023-24
AFC	345.07	993.74

**Asset-2**

Particulars	(₹ in lakh)
	2023-24 (Pro-rata 261 days)
AFC	597.16

78. The Annexure given hereinafter form part of the order.

79. This order disposes of Petition No. 177/TT/2023 in terms of the above findings and discussions.

**sd/-  
(P. K. Singh)  
Member**

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

**sd/-  
(Jishnu Barua)  
Chairperson**





**Asset-1**

2019-24 Capital Expenditure	Admitted capital cost as on COD (₹ in lakh)	Projected ACE (₹ in lakh)			Admitted capital cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations (in %)	Annual Depreciation as per Regulations (₹ in lakh)	
		2020-21	2021-22	Total			2022-23	2023-24
Sub-station	2843.51	1102.67	896.04	1998.71	4842.22	5.28	179.25	232.01
<b>Total</b>	<b>2843.51</b>	<b>1102.67</b>	<b>896.04</b>	<b>1998.71</b>	<b>4842.22</b>		<b>179.25</b>	<b>232.01</b>
<b>Average Gross Block (₹ in lakh)</b>							<b>3394.85</b>	<b>4394.20</b>
<b>Weighted Average Rate of Depreciation (in %)</b>							<b>5.28</b>	<b>5.28</b>



**Asset-2**

<b>2019-24</b>	<b>Admitted capital cost as on COD (₹ in lakh)</b>	<b>Projected ACE (₹ in lakh)</b>		<b>Admitted capital cost as on 31.3.2024 (₹ in lakh)</b>	<b>Rate of depreciation as per Regulations (in %)</b>	<b>Annual depreciation as per Regulations (₹ in lakh)</b>
<b>Capital Expenditure</b>		<b>2023-24</b>	<b>Total</b>			<b>2023-24</b>
Building Civil Works & Colony	0.00	39.70	39.70	39.70	3.34	0.66
Sub-station	3113.73	496.69	496.69	3610.42	5.28	177.52
IT Equipment (Incl. Software)	30.66	0.68	0.68	31.34	15.00	4.65
<b>Total</b>	<b>3144.39</b>	<b>537.07</b>	<b>537.07</b>	<b>3681.46</b>		<b>182.83</b>
<b>Average Gross Block (₹ in lakh)</b>						<b>3412.92</b>
<b>Weighted Average Rate of Depreciation (in %)</b>						<b>5.36</b>

