

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 23/TT/2022

Coram:

**Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri P.K. Singh, Member**

Date of order: 23.09.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 for truing up of transmission tariff of 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for 2 numbers of 240 MVAR, 765 kV Switchable Line Reactors (6x80 MVAR, 765 kV, 1-Ph Shunt Reactor), along with Reactor Bays & 2 Nos. 765 kV Line Bays including PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at 765/400 kV Kurnool Sub-station under "Sub-station works associated with additional inter-regional AC link for import of power into Southern Region i.e. Warora-Warangal and Chilakaluripeta-Hyderabad-Kurnool 765 kV Link".

And in the matter of:

Power Grid Corporation of India Limited,
SAUDAMINI, Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

.....Petitioner

Vs

1. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan, Bangalore-560009.
2. Transmission Corporation of Andhra Pradesh Limited (APTRANSCO),
Vidyut Soudha, Gunadala, Eluru Road,
Vijaywada-520004.
3. Kerala State Electricity Board (KSEB),
Vaidyuthi Bhavanam,
Pattom, Thiruvananthapuram-695004.
4. Tamil Nadu Generation and Distribution Corporation Limited,
(Formerly Tamil Nadu Electricity Board-TNEB),
NPKRR Maaligai, 800, Anna Salai, Chennai – 600002.



5. Electricity Department,
Government of Pondicherry, Pondicherry-605001.
6. Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL),
APEPDCL, P&T Colony,
Seethmmadhara, Vishakhapatnam, Andhra Pradesh.
7. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL),
D.No: 19-13-65/A, Srinivasapuram, Corporate Office,
Tiruchanoor Road, Tirupati-517503.
8. Southern Power Distribution Company of Telangana Limited (TSSPDCL),
6-1-50, Corporate Office, Mint Compound,
Hyderabad-5000063.
9. Northern Power Distribution Company of Telangana Limited (TSNPDCL),
H.No 2-5-3 1/2, Vidyut Bhawan, Corporate Office, Nakkal Gutta, Hanamkonda,
Warangal-506001, Telangana.
10. Bangalore Electricity Supply Company Limited (BESCOM),
Corporate Office, K.R. Circle, Bangalore-560001, Karnataka.
11. Gulbarga Electricity Supply Company Limited (GESCOM),
Station Main Road, Gulbarga, Karnataka.
12. Hubli Electricity Supply Company Limited (HESCOM),
Navanagr, PB Road, Hubli, Karnataka.
13. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore-575001, Karnataka.
14. Chamundeswari Electricity Supply Corporation Limited (CESC),
927, LJ Avenue, Ground Floor, New Kantharaj Urs Road,
Saraswatipuram, Mysore-570009.
15. Electricity Department,
Government of Goa,
Vidyuti Bhawan, Panaji, Goa-403001.
16. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad-500082.
17. Tamil Nadu Transmission Corporation,
NPKKR Maaligai, 800, Anna Salai,
Chennai-600002.



18. Warora-Kurnool Transmission Limited,
6th Floor, Plot No. 19 & 20, Film City,
Sector 16A, Gautam Buddha Nagar,
Noida, Uttar Pradesh-201301.

...Respondent(s)

For Petitioner: Shri S.S. Raju, PGCIL
Shri D.K. Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Shri A.K. Verma, PGCIL

For Respondents: Shri S. Vallinayagam, Advocate, TANGEDCO

ORDER

The instant petition has been filed by Power Grid Corporation of India Limited, a deemed transmission licensee, for trueing up of transmission tariff for the period from COD to 31.3.2019 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) and determination of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for 2019-24 period in respect of 2 numbers of 240 MVAR, 765 kV Switchable Line Reactors (6x80 MVAR, 765 kV, 1-Ph Shunt Reactor), along with Reactor Bays and 2 Numbers 765 kV Line Bays including PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT and Wave Trap at 765/400 kV Kurnool Sub-station (hereinafter referred to as “the transmission asset’) under “Sub-station works associated with additional inter-regional AC link for import of power into the Southern Region i.e. Warora- Warangal and Chilakaluripeta-Hyderabad-Kurnool 765 kV Link”(hereinafter referred to as “the transmission project’).

2. The Petitioner has made the following prayers in this Petition:



- “1) Approve the trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition as per para 8.1 and 9.0 above.*
- 2) Approve the Completion cost and additional capitalization incurred during 2014-19 and allow the projected additional capitalization during 2019-24.*
- 3) Allow the depreciation on the claim of IT equipment in the current true up petition as Bifurcation of Substation cost.*
- 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 2014 and Tariff regulations 2019 as per para 8.1 and 9.0 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 respondents.*
- 8) Allow the petitioner to file a separate petition before Hon’ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses as mentioned as at para 9.6 above.*
- 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.*

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 Investment Approval (IA) for implementation of transmission asset under the transmission project was accorded by Board of Directors (vide Memorandum No. C/CP/PA 1617-03-0AB-IA027, dated 11.4.2017) of the Petitioner's Company in its 338th meeting held on 10.3.2017 at an estimated cost of ₹28372 lakh including IDC of ₹1768 lakh based on October, 2016 price level.
- b) The scope of the transmission project was discussed and agreed in the 37th, 38th and 39th meeting of the Standing Committee on Power System Planning of Southern Region held on 31.7.2014, 7.3.2015 and 29.12.2015, respectively. It was also agreed in 26th Meeting of SRPC held on 20.12.2014.
- c) The Empowered Committee on Transmission in the 33rd and 35th meeting held on 30.9.2014 and 14.9.2015, respectively, decided the implementation of the transmission lines through Tariff Based Competitive Bidding (TBCB) route. The Warora- Warangal and Chilakaluripeta- Hyderabad-Kurnool 765 kV Link transmission line was being implemented by TBCB licensee i.e. Warora-Kurnool Transmission Limited (WKTL). The sub-station works for TBCB lines terminating at the Petitioner's sub-stations including line bays and line reactors were brought under the scope of the Petitioner.
- d) The scope of the work covered under the transmission project is as follows:

Sub-stations:

- i. 765/400 kV Hyderabad (Maheshwaram) GIS Sub-station (Extension)
765 kV
4 Numbers line bays (GIS)
- ii. 765/400 kV Kurnool Sub-station (Extension)



765 kV

- a) 2x240 MVAR, 765 kV, Switchable line reactors (6x80MVAR, 765 kV, 1-ph Shunt Reactor)
- b) 2 Numbers Switchable Line Reactor Bays
- c) 2 Numbers Line Bays
- iii. 400/220 kV Warangal Sub-station (Extension)

400 kV

2 Numbers Line Bays

- e) The assets under the transmission project have been completed and status of the assets are as follows:

Name of Asset	Actual COD	Petition No.
2 numbers of 240 MVAR, 765 kV Switchable Line Reactors (6x80 MVAR, 765 kV, 1-Ph Shunt Reactor), along with Reactor Bays and 2 numbers 765 kV Line Bays excluding PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT and Wave Trap at 765/400 kV Kurnool Sub-station	11.3.2019 (Actual)	Covered under instant petition
04 Numbers Line Bays (GIS) at (Hyderabad) Maheshwaram 765/400 kV Sub-station, 02 Numbers Line Bays at Warangal 400/220 kV Sub-station and Balance items (PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT and Wave Trap) at Kurnool 765/400 kV Sub-station	9.11.2019 (Proposed)	169/TT/2020 (achieved COD in 2019-24 the Tariff Period)

- f) The Petitioner vide affidavit dated 3.9.2021 had submitted the following details of the transmission asset covered under the instant petition:

Asset	COD
a) 2X240 MVAR, 765 kV, Switchable Line Reactors (6X80 MVAR, 765 kV, 1-Ph Shunt Reactor) b) 2 Number Switchable Line Reactor Bays c) 2 Number Line bays*	11.3.2019

**Excluding PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at 765/400 kV Kurnool Sub-station in the instant petition which are part of 2 Number Line Bays.*



- g) The transmission tariff for 2014-2019 tariff period in respect of transmission asset was determined by the Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019.
- h) The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 observed as follows:

“24. As the Petitioner has excluded the cost of PLCC, telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at Kurnool 765/400 kV Substation, the capital cost as submitted by the Petitioner is considered for the purpose of computation of tariff in respect of the transmission asset covered in the instant petition. Since the Petitioner has voluntarily excluded the PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at 765/400 kV Kurnool Sub-station which is part of 2 Nos Line Bays and their capital cost in the instant petition, the same would not be considered in the Petition No. 169/TT/2020.”

- i) The Petitioner has also filed Petition No. 169/TT/2020 for determination of transmission tariff for 2019-24 in respect of 4 Numbers Line Bays (GIS) at (Hyderabad) Maheshwaram 765/400 kV Sub-station, 2 Numbers Line Bays at Warangal 400/220 kV Sub-station and Balance items (PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT and Wave Trap) at Kurnool 765/400 kV Sub-station. The Commission vide Record of Proceeding (RoP) dated 7.7.2022 has reserved order in the matter.
- j) The Petitioner during the course of hearing on 7.7.2022 in Petition No. 169/TT/2020 had sought liberty from the Commission to withdraw the claim regarding cost of PLCC equipment at Kurnool Sub-station and amend the truing up tariff petition of Kurnool Sub-station.
- k) The Petitioner in the instant petition vide RoP dated 26.7.2022 made a submission that instant transmission asset will include the excluded items like PLCC, telecom equipment and line terminal equipment such as LA, CVT and Wave Trap. Accordingly, the Petitioner in the instant petition has submitted



revised tariff forms vide affidavit dated 26.4.2022 wherein the transmission asset includes PLCC, telecom equipment and line terminal equipment such as LA, CVT and Wave Trap at 765/400 kV Kurnool Sub-station.

4. Further, the Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 allowed the annual transmission charges for the transmission asset for the year 2018-19 (pro-rata for 21 days) and the Petitioner was directed to approach SCM/RPC for continuing to use the line reactor as bus reactor post scheduled COD of the associated transmission line and treatment of transmission charges beyond scheduled COD. The Petitioner has submitted that SRPC at the 39th meeting of TCC and SRPC held on 6.12.2021 has agreed to the proposal of using 2x240 MVAR switchable line reactors at Kurnool 765 kV Sub-station as bus reactor till COD of Hyderabad- Kurnool 765 kV D/C line. The copy of the Minutes of meetings has been submitted by the Petitioner in the instant petition vide affidavit dated 18.1.2022.

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

6. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has been published in the newspaper in accordance with Section 64 of the Electricity Act, 2003. No comments/ objections have been received from the general public in response to the aforesaid notice published in the newspaper by the Petitioner. None of the Respondents have filed their reply in the matter.

7. The hearing in this matter was held on 26.7.2022 through video conference and the Commission reserved the order in the matter.



8. This order is issued considering the submissions made by the Petitioner vide affidavits dated 3.9.2021, 18.1.2022, 4.5.2022, 26.4.2022 and 10.8.2022.

9. Having heard the representatives of the Petitioner and having perused the material on record, we proceed to dispose of the Petition.

TRUING UP OF ANNUAL FIXED CHARGES FOR 2014-19 PERIOD

10. The details of the trued-up transmission charges claimed by the Petitioner in respect of the transmission asset are as follows:

Particulars	(₹ in lakh)
	2018-19 (pro-rata 21 days)
Depreciation	25.25
Interest on Loan	28.64
Return on Equity	29.48
O&M Expenses	22.14
Interest on Working Capital	2.83
Total	108.34

11. The details of the trued-up Interest on Working Capital (IWC) claimed by the Petitioner in respect of the transmission asset are as follows:

Particulars	(₹ in lakh)
	2018-19 (pro-rata 21 days)
O&M Expenses	32.07
Maintenance Spares	57.72
Receivables	313.85
Total Working Capital	403.64
Rate of Interest (in %)	12.20
Interest on Working Capital	2.83

Date of Commercial Operation (COD)

12. The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 has approved the COD of the transmission asset as 11.3.2019. The relevant extract of the order is as follows:



“20. The Petitioner has submitted CEA energisation certificate dated 4.2.2019 for 6 Nos. 765 kV 80 MVAR Shunt Reactors and 765 kV D/C Hyderabad-I&II Line Bays (Bays No. 714, 715, 715R, 716, 717, 718 & 718R) and the Petitioner has submitted RLDC charging certificate dated 19.3.2019. Accordingly, taking into consideration the minutes of the 35th SRPC meeting, CEA energisation certificate and the RLDC certificate, the COD of the following elements has been approved as 11.3.2019.

“765/400 kV Kurnool Sub-station (Extn).

765 kV

a) 2X240 MVAR, 765 kV, Switchable Line Reactors (6X80 MVAR, 765 kV, 1-Ph Shunt Reactor)

b) 2 Nos Switchable Line Reactor Bays

C) 2 Nos Line bays.”

13. The Commission vide order dated 25.2.2021 in Petition No.248/TT/2019 further observed as follows:

“66. We have already approved the COD of the transmission asset as 11.3.2019 based on the recommendation of the 35th SRPC meeting for early commissioning of the line reactors at Kurnool Sub-station for controlling the voltage at Kurnool Substation. Therefore, we are of the view that the transmission charges approved in this order should be included in PoC pool from COD of the Asset i.e. 11.3.2019 to up to SCOD of the instant Asset i.e. 8.11.2019. It is observed from minutes of the 35th SRPC that RPC approved only for early commissioning of the line reactors at Kurnool Sub-station on the anticipation that the associated transmission lines will be expected to be commissioned in the month of November, 2019. The associated transmission line is scheduled to be commissioned on 9.11.2019. However, the associated transmission line has not achieved COD as anticipated. Therefore, the petitioner is directed to approach SCM/RPC for continuing to use the line reactor as bus reactor post scheduled COD of the associated transmission line and treatment of transmission charges beyond scheduled COD.”

14. The Commission directed the Petitioner to approach SCM/ RPC for continuing to use the line reactor as bus reactor post scheduled COD of the associated transmission line. The Petitioner has submitted that SRPC at the 39th meeting of TCC and SRPC held on 6.12.2021 has agreed the proposal of using 2X240 MVAR Switchable line reactors at Kurnool 765 kV Sub-station as Bus Reactor till the execution of Hyderabad-Kurnool 765 kV D/C line.

15. We have considered the submission of the Petitioner. The relevant extracts of the minutes of the 39th meeting of TCC and SRPC held on 6.12.2021 is as follows:

“O.26. Continuation of the use of Kurnool Line Reactors as Bus Reactors, as per CERC Order in petition No. 248/TT/2019



26.4 TCC Deliberation / Recommendation:

iv. After deliberation, general consensus is for continuing to use 2x240 MVAR switchable line reactors at Kurnool 765kV S/s as bus reactor till commissioning of Hyderabad–Kurnool 765kV D/c line.

26.5 SRPC Deliberation:

v. After deliberation, SRPC approved continuation of the use of 2x240 MVAR switchable line reactors at Kurnool 765kV S/s as bus reactor till commissioning of Hyderabad–Kurnool 765kV D/c line. The Constituents are at the liberty to submit their observations on the delay in execution of the TBCB line etc. during hearing of Tariff petition of WKTL system by Hon'ble CERC.”

16. Taking into consideration the recommendation of the 39th TCC and SRPC meeting, we approve the continuation of the use of 2x240 MVAR switchable line reactors at Kurnool 765 kV Sub-station as bus reactor till the execution of Hyderabad-Kurnool 765 kV D/C line.

Capital Cost

17. The capital cost of the transmission project has been calculated in accordance with the Regulation 9(3) of the 2014 Tariff Regulation.

18. The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 had allowed capital cost as on COD for the transmission asset and projected ACE for 2014-19 period and the details are as follows:

(₹ in lakh)

Capital Cost allowed as on COD	ACE Allowed	Capital Cost allowed as on 31.3.2019
	2018-19	
7900.42*	445.87	8346.29

**Accrual IDC of ₹30.47 lakh adjusted from COD and added in respective year of discharge and IDC of ₹0.31 lakh is disallowed due to computational difference*

19. The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 is held as follows:

“24. As the Petitioner has excluded the cost of PLCC, telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at Kurnool 765/400 kV Substation, the capital cost as submitted by the Petitioner is considered for the purpose of



computation of tariff in respect of the transmission asset covered in the instant petition. Since the Petitioner has voluntarily excluded the PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at 765/400 kV Kurnool Sub-station which is part of 2 Nos Line Bays and their capital cost in the instant petition, the same would not be considered in the Petition No. 169/TT/2020.”

20. The instant petition was heard on 26.7.2022. During the course of hearing, the Petitioner has submitted that while claiming tariff for 2 numbers of line bays at Kurnool Sub-station, the Petitioner has excluded PLCC, Telecom equipment and Line Terminal equipment such as LA, CVT & Wave Trap at 765/400 kV Kurnool Sub-station, as they were claimed in Petition No.169/TT/2020. However, the Petitioner during the hearing dated 7.7.2022 in Petition No. 169/TT/2020 has submitted that liberty may be given to withdraw the claim regarding cost of PLCC equipment at Kurnool Sub-station and amend the truing up tariff petition of Kurnool Sub-station. The Petitioner has submitted that the transmission asset in the instant petition will include the excluded items like PLCC, telecom equipment and line terminal equipment such as LA, CVT and Wave Trap.

21. The Petitioner vide affidavit dated 10.8.2022 has submitted that an amount of ₹523.46 lakh towards PLCC, telecom equipment and line terminal equipment such as LA, CVT and Wave Trap at 765/400 kV Kurnool Sub-station, which was earlier claimed in Petition No. 169/TT/2020, has now been claimed as on COD. No additional capital expenditure has been claimed for the same. The apportioned approved capital cost, capital cost as on COD and actual ACE during the 2014-19 period claimed by the Petitioner in the revised Auditor Certificate dated 25.7.2022 are as follows:

(₹ in lakh)			
Apportioned approved capital cost (FR)	Capital cost as on COD	ACE claimed	Total capital cost as on 31.3.2019
		2018-19	
11488.19	8454.66	445.87	8900.53



22. The Petitioner has further submitted that Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 had disallowed IDC to the tune of ₹0.31 lakh on account of computational difference and adjusted IDC of ₹30.47 lakh from capital cost as on COD and added in respective year of discharge. The capital cost as on COD and actual ACE during the 2014-19 period claimed by the Petitioner after adjusting IDC on cash discharge basis are as follows:

(₹ in lakh)			
FR Apportioned Approved Cost	Capital cost as on COD	Additional Capital Expenditure in 2018-19	Capital cost as on 31.3.2019
11488.19	8422.45	445.87	8868.32

Cost variation

23. The Petitioner has submitted that against the total apportioned approved cost of ₹11488.19 lakh, the estimated completion cost as on 31.3.2023 is ₹10649.44 lakh.

24. The Petitioner has further submitted that there is no benchmark cost specified by the Commission for similar type of asset in the 2019 Tariff Regulations. Regulation 20 (1) and Regulation 20(4) of the 2019 Tariff Regulations provides as follows:

“20 Prudence Check of Capital Cost: The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

(1) In case of the thermal generating station and the transmission system, prudence check of capital cost shall include scrutiny of the capital expenditure, in the light of capital cost of similar projects based on past historical data, wherever available, reasonableness of financing plan, interest during construction, incidental expenditure during construction, use of efficient technology, cost over-run and time over-run, procurement of equipment and materials through competitive bidding and such other matters as may be considered appropriate by the Commission:

Provided that, while carrying out the prudence check, the Commission shall also examine whether the generating company or transmission licensee, as the case may be, has been careful in its judgments and decisions in execution of the project.

.....
(4) The generating company or the transmission licensee, as the case may be, shall furnish the capital cost for execution of the existing and new projects as per Annexure-I to these regulations along with tariff petition for the purpose of creating a database of benchmark capital cost of various components.”



25. The Petitioner has further submitted that the benchmarking analysis for determination of prudent costs would require database spanning across multiple variables that influence capital costs. Capital cost in the context of transmission assets depends upon multiple variables as follows:

- a. Project specific conditions such as terrain, project location, right of way constraints, including urbanization, river/ highway/ railway line crossings, intersection of other transmission lines, forest area etc. Weather conditions are also an important factor which differentiate capital cost of similar transmission assets.
- b. Market forces driven by demand-supply balance i.e. availability of competition among vendors, purchase quantum (one time order v. repeat orders), input cost variations, economic and environmental factors, etc.
- c. Technology adopted for implementation of the transmission assets especially the sub-stations and the requirement of the active compensation, etc.

26. The Petitioner has submitted that keeping track of all such factors that influence discovery of prudent costs, whether project specific or market forces driven, is practically challenging. The Petitioner has further submitted a table that illustrates the variation in cost per km of transmission lines even if such lines fall under same wind zones, soil conditions and topography. The table shows that a cost of 765 kV line varies from ₹166.50 lakh per km to ₹210.79 lakh per km even with similar regions. The table further demonstrates the variation in cost per km of transmission lines falling under different wind zones, soil conditions and topography.



Asset Name	Region	COD	Line length in km	Completion cost (₹ lakh)	Cost per km (₹ lakh)
765 kV S/C Transmission Lines under same wind zone/Soil condition/plain area					
Bareilly-Lucknow S/C	NR-III	1.4.2014	251	41704.85	166.15
Gaya-Varanasi S/C	NR-III	21.4.2015	273	57546.81	210.79
Jaipur-Bhiwani S/C	NR-I	7.10.2016	276	49343.72	178.78
765 kV D/C Transmission lines under different wind zone/Soil condition/plain area					
Champa-Raipur D/C	WR-I	24.5.2014	149	67005.6	449.70
Angul-Srikakulam D/C	SR-I/ ER-II	1.2.2017	276.49	139487.89	504.50
Chittorgarh-Ajmer D/C	NR-I	31.12.2017	211	101482.97	480.96
400 kV Transmission Lines under same wind zone/Soil condition/plain area					
Barh-Gorakhpur D/C	NR-III	7.6.2015	349.17	97166.05	278.28
Sikar-Jaipur D/C	NR-I	16.2.2017	169.00	22820.21	135.03
Lucknow-Kanpur D/C	NR-III	1.6.2017	159.61	25221.01	158.02
400 kV D/C Transmission lines under different wind zone/Soil condition/plain area					
Ranchi-Chandwa-Gaya D/C	ER-I	12.7.2016	190.00	55996.46	294.72
Betul-Khandwa D/C	WR-I	24.8.2017	168.64	40241.28	238.62
400 kV D/C Transmission lines under different wind zone/Soil condition/ Hilly area					
Balipara -Bongaigaon D/C	NER	7.11.2014	309.00	107030.77	346.38
Silcher-PK Bari D/C	NER	1.8.2015	128.76	40879.20	317.48
Kishenpur - New Wanpoh D/C	NR-II	31.7.2017	135.00	54324.00	402.40

27. The Petitioner has submitted that the results of any benchmarking in the case of such assets will cause severe losses to the transmission licensee if, the benchmarks are set to high. Therefore, benchmarking for determination of capital cost is not feasible, since it may not be practically possible to factor in all the considerations mentioned above in any benchmarking.

28. We have considered the submission of the Petitioner. As compared with FR cost of ₹11488.19 lakh, the estimated completion cost as on 31.3.2023 is ₹10649.44 lakh. The estimated completion cost is reduced by an amount of ₹838.75 lakh. The completion cost in respect of the transmission asset is within the apportioned cost and, therefore, there is no cost over-run.

29. As per the I.A. dated 11.4.2017, the transmission asset was scheduled to be put into commercial operation within 32 months from the date of I.A. Hence, the transmission asset was schedule to be put into commercial operation by 9.11.2019



against which the transmission asset was put into commercial operation on 11.3.2019. Hence, there is no time over-run in declaring the commercial operation of the transmission asset.

Interest During Construction (“IDC”) and Incidental Expenditure During Construction (“IEDC”)

30. As stated above in this order, there is no time over-run in case of the transmission asset.

31. The Petitioner has submitted that the Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 had disallowed IDC to the tune of ₹0.31 lakh on account of computational difference and adjusted IDC of ₹30.47 lakh from capital cost as on COD and added in respective year of discharge.

32. The Petitioner has claimed IDC in respect of the transmission asset and requested the Commission to allow IDC on the basis of cash out flow. The Petitioner has submitted statement showing computation of IDC along with year-wise details of IDC discharged which is summarized as follows:

(₹ in lakh)

IDC as per Auditor Certificate	IDC Discharged upto COD	IDC to be discharged during 2019-20
201.09	168.88	32.21

33. The Petitioner has submitted IDC computation statement which contains the name of loan, drawl date, loan amount, interest rate and interest claimed. The IDC is worked out based on the details given in the IDC statement. Further, the loan amount as on the COD has been mentioned in Form-6 and Form-9C. On scrutiny of these documents, certain discrepancies have been noted such as mismatch in loan amount



between IDC statement and Form-6 and Form-9C. The allowable IDC has been worked out based on the information available on record and relying on loan amount as per Form-9C. The IDC considered as on COD and summary of discharge of IDC liability up to COD and thereafter for the purpose of tariff determination is as follows:

(₹ in lakh)				
IDC as per Auditor Certificate (A)	IDC disallowed due to computational difference (B)	IDC allowed (C)= (A)-(B)	Un-discharged IDC liability as on COD (D)	IDC allowed as on COD (E)=(C)-(D)
201.09	0.76	200.33	32.09	168.24

34. The un-discharged portion of IDC of ₹32.09 lakh is being allowed as ACE during the year of discharge i.e. 2019-20 and the same is as follows:

(₹ in lakh)	
Un-discharged portion of entitled IDC as on COD	IDC being discharged as ACE in 2019-20
32.09	32.09

35. The Petitioner has claimed IEDC for the transmission asset as per the Auditor Certificate and the IEDC claimed is on cash basis and is paid upto COD. The IEDC of ₹124.54 lakh claimed by the Petitioner is allowed.

Initial Spares

36. Regulation 13(d) of the 2014 Tariff Regulations provides that Initial Spares shall be capitalised as a percentage of plant and machinery cost up to cut-off date, subject to the following ceiling norms:

“(d) Transmission System

- (i) *Transmission line: 1.00%*
- (ii) *Transmission Sub-station (Green Field): 4.00%*
- (iii) *Transmission Sub-station (Brown Field): 6.00%*
- (iv) *Series Compensation devices and HVDC Station: 4.00%*
- (v) *Gas Insulated Sub-station (GIS): 5.00%*
- (vi) *Communication system: 3.5%”*



37. The Petitioner initially vide affidavit dated 3.9.2021 has claimed the following Initial Spares:

(₹ in lakh)

Particulars	Plant and Machinery Cost (excluding IDC, IEDC, land cost and cost of civil works)	Initial Spares Claimed	Initial spares as (in %) of Capital Cost	Norm as per the Tariff Regulations (in %)
Sub-station (Brownfield)	9455.21	270.18	2.94	6.00

38. The Petitioner vide affidavit dated 26.7.2022 has submitted revised Auditor Certificate dated 25.7.2022 and has claimed the following initial spares:

(₹ in lakh)

Particulars	Plant and Machinery Cost (excluding IDC, IEDC, land cost and cost of civil works)	Initial Spares Claimed	Norm as per Tariff Regulations (in %)
Sub-station (Brownfield)	9789.27	339.85	6.00

39. We have considered the submissions of the Petitioner. The Plant and Machinery cost (excluding IDC, IEDC, land cost and cost of civil works) mentioned in Auditor Certificate dated 25.7.2022 is considered for the purpose of calculation of initial spares. The Petitioner has claimed the Initial Spares for the transmission asset @ of 6% being a Brown Field sub-station in accordance with the 2014 Tariff Regulations. The Initial Spares have been computed by combining the cost of both PLCC and sub-station and allowed as per the norms specified for brown field sub-station in the 2014 Tariff Regulations. The Initial Spares allowed for the transmission asset as per percentage specified in the 2014 Tariff Regulations is as follows:



Particulars	Plant and Machinery cost (excluding IDC and IEDC, land cost & cost of civil works) upto cut-off date	Initial Spares claimed (₹ in lakh)	Norms (in %) as per the 2014 Tariff Regulations	Initial Spares allowable (₹ in lakh)	Excess Initial Spares (₹ in lakh)	Initial Spares allowed (₹ in lakh)
	A	B	C	$D = (A - B) * C / (100 - C)$	E = D - B	
Sub-station (Brownfield) and PLCC	9789.27	339.85	6.00	603.15	0.00	339.85

Capital Cost as on COD

40. The capital cost of the transmission asset has been calculated in accordance with Regulation 9(3) of the 2014 Tariff Regulations. The details of the capital cost now approved as on COD after adjustment of IDC are as follows:

(₹ in lakh)			
Capital Cost claimed as on COD (A)	Un-discharged IDC (B)	IDC Disallowed due to computational difference (C)	Capital Cost allowed as on COD (D) = (A-B-C)
8454.66	32.09	0.76	8421.81

Additional Capital Expenditure (“ACE”)

41. The Commission had allowed ACE for the transmission asset for 2014-19 period *vide* order dated 25.2.2021 in Petition No. 248/TT/2019 under Regulation 14(1)(i) of the 2014 Tariff Regulations. The details of ACE allowed earlier by the Commission for the transmission asset are as follows:

(₹ in lakh)		
Capital Cost allowed as on COD	ACE allowed	Capital Cost allowed as on 31.3.2019
	2018-19	
7900.42	445.87	8346.29



42. Against this, the Petitioner has claimed ACE for the transmission asset in accordance with Regulation 14(1)(ii) of the 2014 Tariff Regulations which is as follows:

(₹ in lakh)

Particulars	Regulation	ACE claimed
		2018-19
Addition in Gross block (Balance work)	14(1)(ii)	445.87
Total ACE claimed		445.87

43. The Petitioner vide affidavit dated 4.5.2022 has submitted the liability flow statement with package-wise details of ACE claimed and the details are as follows:

(₹ in lakh)

Year	ACE	Party
2018-19	201.39	Larsen & Toubro Limited
	244.48	TBEA Energy Limited
Total	445.87	

44. We have considered the submissions of the Petitioner. The ACE claimed by the Petitioner towards balance work is allowed under Regulation 14(1)(ii) of the 2014 Tariff Regulations which is as follows:

(₹ in lakh)

Particulars	Regulation	ACE approved
		2018-19
Addition in Gross block (balance work)	14(1)(ii)	445.87
Total ACE		445.87

45. Accordingly, the capital cost considered for truing up of transmission tariff for 2014-19 period is as follows:

(₹ in lakh)

Apportioned Approved Capital Cost (FR Cost)	Capital cost as on COD	ACE allowed	Capital Cost as on 31.3.2019
		2018-19	
11488.19	8421.81	445.87	8867.68



Debt-Equity ratio

46. The Petitioner has claimed debt-equity ratio of 70:30 as on COD of the transmission asset. Debt-Equity ratio of 70:30 is considered as provided under Regulation 19 of the 2014 Tariff Regulations. The details of the debt and equity as on the COD and as on 31.3.2019 for the transmission asset considered for the purpose of tariff of the 2014-19 period are as follows:

Funding	Capital Cost as on COD (₹ in lakh)	(in %)	ACE in 2014-19 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2019 (₹ in lakh)	(in %)
Debt	5895.27	70.00	312.11	70.00	6207.38	70.00
Equity	2526.54	30.00	133.76	30.00	2660.30	30.00
Total	8421.81	100.00	445.87	100.00	8867.68	100.00

Depreciation

47. Depreciation has been allowed as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. Depreciation has been allowed considering capital expenditure as on COD and approved ACE during the 2014-19 tariff period. The Gross Block during the 2014-19 tariff period has been depreciated at Weighted Average Rate of Depreciation (WAROD) (as placed in Annexure-I). WAROD has been worked out considering the depreciation rates specified in Regulation 27 of the 2014 Tariff Regulations. The trued-up depreciation allowed during 2018-19 is as follows:

		(₹ in lakh)
	Particulars	2018-19 (pro-rata 21 days)
	Depreciation	
A	Opening Gross Block	8421.81
B	Additional Capitalisation	445.87
C	Closing Gross Block (A+B)	8867.68
D	Average Gross Block (A+C)/2	8644.74
E	Freehold land	365.97
F	Weighted Average Rate of Depreciation (in %)	5.08
G	Balance useful life of the asset (year)	25
H	Lapsed life at the beginning of the year (year)	0



	Particulars	2018-19 (pro-rata 21 days)
I	Aggregate Depreciable Value	7450.90
J	Combined Depreciation during the year	25.25
K	Aggregate Cumulative Depreciation	25.25
L	Remaining Depreciable Value (I-K)	7425.64

48. The details of depreciation approved *vide* order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

		(₹ in lakh)
Particulars		2018-19 (pro-rata 21 days)
Allowed <i>vide</i> order dated 25.2.2021 in Petition No. 248/TT/2019		23.57
Claimed by the Petitioner in the instant petition		25.25
Allowed after true-up in the instant order		25.25

Interest on Loan (“IoL”)

49. The Petitioner has claimed the weighted average rate of IoL based on its actual loan portfolio and rate of interest. We have considered the submissions of the Petitioner. IoL has been calculated based on actual interest rate submitted by the Petitioner in accordance with Regulation 26 of the 2014 Tariff Regulations. The trued-up IoL allowed in respect of the transmission asset is as follows:

		(₹ in lakh)
	Particulars	2018-19 (pro-rata 21 days)
	Interest on Loan	
A	Gross Normative Loan	5895.27
B	Cumulative Repayments upto Previous Year	0.00
C	Net Loan-Opening (A-B)	5895.27
D	Additions	312.11
E	Repayment during the year	25.25
F	Net Loan-Closing (C+D-E)	6182.12
G	Average Loan (C+F)/2	6038.69
H	Weighted Average Rate of Interest on Loan (in %)	8.2436
I	Interest on Loan (G*H)	28.64



50. The details of IoL approved *vide* order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

Particulars	(₹ in lakh)
	2018-19 (pro-rata 21 days)
Allowed <i>vide</i> order dated 25.2.2021 in Petition No. 248/TT/2019	26.89
Claimed by the Petitioner in the instant petition	28.64
Allowed after true-up in the instant order	28.64

Return on Equity (“RoE”)

51. The Petitioner has claimed RoE for the transmission asset in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at MAT rates and has claimed the following effective tax rates for the 2014-19 tariff period:

Year	Claimed effective tax rate (in %)	Grossed up RoE [(Base Rate)/(1-t)] (in %)
2014-15	21.018	19.624
2015-16	21.382	19.716
2016-17	21.338	19.705
2017-18	21.337	19.704
2018-19	21.549	19.758

52. The Commission *vide* order dated 27.4.2020 in Petition No. 274/TT/2019 had arrived at the effective tax rate for the Petitioner based on the notified MAT rates and the same is as follows:

Year	Notified MAT rates (inclusive of surcharge & cess) (in %)	Effective tax (in %)
2014-15	20.961	20.961
2015-16	21.342	21.342
2016-17	21.342	21.342
2017-18	21.342	21.342
2018-19	21.549	21.549



53. The same MAT rates as considered in the above-mentioned order in Petition No. 274/TT/2019 are considered for the purpose of grossing up of rate of RoE for truing up of the tariff of the 2014-19 period in terms of the provisions of the 2014 Tariff Regulations and the same are as follows:

Year	Notified MAT rates (in %) (inclusive of surcharge & cess)	Base rate of RoE (in %)	Grossed up RoE [(Base Rate)/(1-t)] (in %)
2014-15	20.961	15.50	19.610
2015-16	21.342	15.50	19.705
2016-17	21.342	15.50	19.705
2017-18	21.342	15.50	19.705
2018-19	21.549	15.50	19.758

54. The Petitioner has claimed RoE for 2014-19 tariff period after grossing up the RoE @15.50% with effective tax rates (based on MAT rates) each year. Accordingly, RoE is trued up based on MAT rates applicable in the respective years and is allowed for the transmission asset as follows:

		(₹ in lakh)
	Particular	2018-19 (pro-rata 21 days)
A	Opening Equity	2526.54
B	Additions	133.76
C	Closing Equity (A+B)	2660.30
D	Average Equity (A+C)/2	2593.42
E	Return on Equity (Base Rate) (in %)	15.500
F	MAT Rate for respective year (in %)	21.549
G	Rate of Return on Equity (in %)	19.758
H	Return on Equity (D*G)	29.48

55. The details of RoE allowed *vide* order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:



(₹ in lakh)

Particulars	2018-19 (pro-rata 21 days)
Allowed vide order dated 25.2.2021 in Petition No. 248/TT/2019	27.70
Claimed by the Petitioner in the instant petition	29.48
Allowed after true-up in the instant order	29.48

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

56. The O&M Expenses claimed by the Petitioner for the transmission asset are as follows:

Particulars	2018-19 (pro-rata 21 days)
765 kV Kurnool Sub-station	
765 kV Bays	4
Norms (₹ lakh/Bay)	96.20
Total O&M Expenses (₹ in lakh)	22.14

57. The Petitioner vide affidavit dated 10.8.2022 has submitted that no O&M Expenses have been claimed towards PLCC, telecom equipment and line terminal equipment such as LA, CVT and Wave Trap at 765/400 kV Kurnool Sub-station. We have considered the submissions of the Petitioner. The O&M Expenses allowed for the transmission asset as per norms in the 2014 Tariff Regulations are as follows:

Particulars	2018-19 (pro-rata 21 days)
765 kV Kurnool Sub-station	
765 kV Bays	4
Norms (₹ lakh/Bay)	96.20
Total O&M Expense (₹ in lakh)	22.14

58. The details of O&M Expenses allowed vide order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)

Particulars	2018-19 (pro-rata 21 days)
Allowed vide order dated 25.2.2021 in Petition No. 248/TT/2019	21.72
Claimed by the Petitioner in the instant petition	22.14

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Allowed after true-up in the instant order	22.14
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Interest on Working Capital (“IWC”)

59. The Petitioner has submitted that it has computed IWC for 2014-19 period considering the SBI Base Rate (8.70%) plus 350 basis points as on 1.4.2018. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and is allowed for the transmission asset as follows:

		(₹ in lakh)
	Particulars	2018-19 (pro-rata 21 days)
A	Working Capital for O&M Expenses (one month of O&M Expenses)	32.07
B	Working Capital for Maintenance Spares (Maintenance Spares @15% of O&M Expenses)	57.72
C	Working Capital for Receivables (Receivable equivalent to two months of fixed cost)	313.87
D	Total Working Capital (A+B+C)	403.65
E	Rate of Interest (in%)	12.20
F	Interest of working capital (D*E)	2.83

60. The details of IWC allowed *vide* order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order is as follows:

		(₹ in lakh)
	Particulars	2018-19 (pro-rata 21 days)
	Allowed <i>vide</i> order dated 25.2.2021 in Petition No. 248/TT/2019	2.70
	Claimed by the Petitioner in the instant petition	2.83
	Allowed after true-up in this order	2.83

Approved Annual Fixed Charges for 2014-19 Tariff Period

61. The trued-up AFC approved for the transmission asset for 2014-19 tariff period are as follows:



(₹ in lakh)

	Particulars	2018-19 (pro-rata 21 days)
A	Depreciation	25.25
B	Interest on Loan	28.64
C	Return on Equity	29.48
D	O&M Expenses	22.14
E	Interest on Working Capital	2.83
F	Total (A+B+C+D+E)	108.34

62. The details of AFC allowed vide order dated 25.2.2021 in Petition No. 248/TT/2019 for the transmission asset, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)

Particulars	2018-19 (pro-rata 21 days)
Allowed vide order dated 25.2.2021 in Petition No. 248/TT/2019	102.58
Claimed by the Petitioner in the instant petition	108.34
Allowed after true-up in this order	108.34

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

63. The Petitioner has claimed the following transmission charges for 2019-24 tariff period for the transmission asset:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	474.82	517.90	540.00	543.94	544.81
Interest on Loan	515.57	517.57	494.74	454.41	410.98
Return on Equity	525.36	571.33	594.92	599.13	600.05
O&M Expenses	180.04	186.40	192.92	199.72	206.72
Interest on Working Capital	30.64	32.36	32.99	32.80	32.41
Total	1726.43	1825.56	1855.57	1830.00	1794.97

64. The details of IWC claimed by the Petitioner for 2019-24 tariff period in respect of the transmission asset are as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	15.00	15.53	16.08	16.64	17.23



Maintenance Spares	27.01	27.96	28.94	29.96	31.01
Receivables	212.27	225.07	228.77	225.62	220.69
Total Working Capital	254.28	268.56	273.79	272.22	268.93
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	30.64	32.36	32.99	32.80	32.41

Capital Cost

65. 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 trued 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 up to 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 decapitalised 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.”

66. The Petitioner has claimed the capital cost of the transmission asset during 2019-24 period as follows:

(₹ in lakh)

Appportioned approved Capital Cost (FR)	Capital Cost claimed as on 31.3.2019	ACE Claimed in 2019-20	ACE Claimed in 2020-21	ACE Claimed in 2021-22	ACE Claimed in 2022-23	Estimated Completion Cost
11488.19	8868.32	911.07	720.70	116.48	32.87	10649.44

67. The capital cost of ₹8867.68 lakh as on 31.3.2019 has been worked out by the Commission and considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (“ACE”)

68. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provides as follows:

“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-capitalisation.

(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;*
 - (g) *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.”*

69. The Petitioner has claimed ACE for 2019-24 period under Regulation 24(1)(a), Regulation 24(1)(b), Regulation 25(1)(a) and Regulation 25(1)(b) of the 2019 Tariff Regulations. The same has been summarised as follows:

Particulars	Regulation	ACE claimed (₹ in lakh)			
		2019-20	2020-21	2021-22	2022-23
Addition in Gross block	24(1)(a) and 25(1)(a)	122.68	480.59	11.22	32.87
	24(1)(b) and 25(1)(b)	756.18	240.11	105.26	0.00
Total		878.86	720.70	116.48	32.87



70. The Petitioner *vide* affidavit dated 4.5.2022 has submitted the package wise details of ACE incurred during 2019-24 as follows:

Party	Particulars	ACE claimed (₹ in lakh)			
		2019-20	2020-21	2021-22	2022-23
Larsen & Toubro Limited	Sub-station	681.30	357.40	0.00	0.00
TBEA Energy Limited	Sub-station	140.26	306.34	0.00	0.00
Site Packages	Sub-station	57.30	56.96	116.48	32.87
Total		878.86	720.70	116.48	32.87

71. We have considered the submissions of the Petitioner. ACE claimed by the Petitioner has been allowed under Regulation 24(1)(a), Regulation 24(1)(b), Regulation 25(1)(a) and Regulation 25(1)(b) of the 2019 Tariff Regulations. As mentioned earlier, the un-discharged portion of IDC of ₹32.09 lakh is being allowed as ACE during the year of discharge i.e. 2019-20. The total capital expenditure as on 31.3.2024 is within the apportioned approved cost of ₹11488.19 lakh. Accordingly, ACE for 2019-24 and the capital cost as on 31.3.2024 for the transmission asset considered are as follows:

Capital Cost admitted as on 1.4.2019	ACE allowed					Capital Cost allowed as on 31.3.2024
	2019-20		2020- 21	2021- 22	2022- 23	
	ACE	IDC Discharged				
8867.68	878.86	32.09	720.70	116.48	32.87	10648.68

72. Therefore, the capital cost of ₹8867.68 lakh as on 1.4.2019 and ₹10648.68 lakh as on 31.3.2024 has been considered for the purpose of determination of transmission tariff for the 2019-24 period in accordance with Regulation 19 of the 2019 Tariff Regulations.



Debt-Equity ratio

73. 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.”

74. The details of debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period in respect of the transmission asset is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The details of debt-equity considered for the purpose of computation of tariff for the transmission asset for 2019-24 tariff period is as follows:

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh)	(in %)	ACE in 2019-24 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	6207.38	70.00	1246.70	70.00	7454.08	70.00
Equity	2660.30	30.00	534.30	30.00	3194.60	30.00
Total	8867.68	100.00	1781.00	100.00	10648.68	100.00

Depreciation

75. 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 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

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

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

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

(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.”

76. We have considered the submissions of the Petitioner. WAROD placed at Annexure-II has been worked out after taking into account the depreciation rates as prescribed in the 2019 Tariff Regulations. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. The depreciation allowed for the transmission asset is as follows:

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	8867.68	9778.63	10499.33	10615.81	10648.68
B	Additional Capitalisation	910.95	720.70	116.48	32.87	0.00
C	Closing Gross Block (A+B)	9778.63	10499.33	10615.81	10648.68	10648.68
E	Average Gross Block (A+C)/2	9323.15	10138.98	10557.57	10632.24	10648.68
D	Freehold Land	365.97	365.97	365.97	365.97	365.97
F	Weighted average rate of Depreciation (WAROD) (in %)	5.09	5.11	5.11	5.12	5.12
G	Balance useful life of the asset (year)	25	24	23	22	21
H	Aggregate Depreciable Value	8061.46	8795.71	9172.44	9239.64	9254.44
I	Depreciation during the year	474.77	517.85	539.95	543.90	544.76



	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
J	Cumulative Depreciation	500.03	1017.88	1557.83	2101.73	2646.49
K	Remaining Depreciable Value (H-J)	7561.44	7777.83	7614.60	7137.91	6607.94

Interest on Loan (“IoL”)

77. 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.”

78. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during the 2019-24 tariff period may be adjusted.

79. We have considered the submissions of the Petitioner. The weighted average rate of IoL has been considered on the basis of rate prevailing as on 1.4.2019. Accordingly, the floating rate of interest, if any, shall be considered at the time of true-up. In view of the above, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of transmission asset for 2019-24 tariff period is as follows:

(₹ in lakh)						
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Gross Normative Loan	6207.38	6845.04	7349.53	7431.07	7454.08
B	Cumulative Repayments upto Previous Year	25.25	500.03	1017.88	1557.83	2101.73
C	Net Loan-Opening (A-B)	6182.13	6345.01	6331.65	5873.23	5352.35
D	Additions	637.66	504.49	81.54	23.01	0.00
E	Repayment during the year	474.77	517.85	539.95	543.90	544.76
F	Net Loan-Closing (C+D-E)	6345.01	6331.65	5873.23	5352.35	4807.58
G	Average Loan (C+F)/2	6263.57	6338.33	6102.44	5612.79	5079.97
H	Weighted Average Rate of Interest on Loan (in %)	8.2306	8.1651	8.1066	8.0955	8.0896
I	Interest on Loan (G*H)	515.53	517.53	494.70	454.38	410.95

Return on Equity (“RoE”)

80. 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 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 Rs 1,000 crore;
- (b) Estimated Advance Tax for the year on above is Rs 240 crore;
- (c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore / Rs 1000 Crore = 24%;
- (d) Rate of return on equity = $15.50 / (1 - 0.24) = 20.395\%$.

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

81. The Petitioner has submitted that MAT rate is applicable to it. Accordingly, the MAT rate applicable for 2019-20 has been considered for the purpose of RoE, which will be trued up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed for the transmission asset is as follows:



(₹ in lakh)

	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	2660.30	2933.58	3149.79	3184.74	3194.60
B	Additions	273.28	216.21	34.94	9.86	0.00
C	Closing Equity (A+B)	2933.58	3149.79	3184.74	3194.60	3194.60
D	Average Equity (A+C)/2	2796.94	3041.69	3167.27	3189.67	3194.60
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
F	MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (D*G)	525.32	571.29	594.88	599.08	600.01

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

82. The O&M Expenses claimed by the Petitioner for the transmission asset for 2019-24 tariff period is as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
765 kV bays of:					
(i) Kurnool					
765 kV Bays	4	4	4	4	4
Norms (₹ lakh/Bay)	45.01	46.60	48.23	49.93	51.68
Total O&M Expense (₹ in lakh)	180.04	186.40	192.92	199.72	206.72

83. Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provides 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
Norms for sub-station Bays (₹ Lakh per bay)					
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
Norms for Transformers (₹ Lakh per MVA)					
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



Norms for AC and HVDC lines (₹ Lakh per km)					
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
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
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	2,563	2,653	2,746	2,842	2,942



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 (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ± 500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);

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

v. the O&M expenses of ± 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 ± 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 year

(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.

(4) Communication system: *The operation and maintenance expenses for the communication system shall be worked out at 2.0% of the original project cost related to such communication system. The transmission licensee shall submit the actual operation and maintenance expenses for truing up.”*



84. We have considered the submission of the Petitioner. The O&M Expenses have been worked out for the transmission asset in accordance with Regulation 35(3)(a) of the 2019 Tariff Regulations and the same are as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
765 kV bays of:					
(i) Kurnool					
765 kV Bays	4	4	4	4	4
Norms (₹ lakh/Bay)	45.01	46.60	48.23	49.93	51.68
Total O&M Expense (₹ in lakh)	180.04	186.40	192.92	199.72	206.72

Interest on Working Capital (“IWC”)

85. Regulation 34(1)(c), Regulation 34(3), Regulation 34(4) and Regulation 3(7) of the 2019 Tariff Regulations provide 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.*

.....

(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 1st 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;”*



86. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (RoI) considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and from 2021-22 onwards has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.00% plus 350 basis points). The components of the working capital and interest thereon allowed is as follows:

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M expenses for one month)	15.00	15.53	16.08	16.64	17.23
B	Working Capital for Maintenance Spares (15% of O&M expenses)	27.01	27.96	28.94	29.96	31.01
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost / annual transmission charges)	212.25	224.78	228.22	225.08	220.16
D	Total Working Capital (A+B+C)	254.26	268.28	273.24	271.68	268.39
E	Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
F	Interest on working capital (D*E)	30.64	30.18	28.69	28.53	28.18

Annual Fixed Charges of 2019-24 Tariff Period

87. The transmission charges allowed in respect of the transmission asset for 2019-24 tariff period are as follows:

		(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24	
Depreciation	474.77	517.85	539.95	543.90	544.76	
Interest on Loan	515.53	517.53	494.70	454.38	410.95	
Return on Equity	525.32	571.29	594.88	599.08	600.01	
O&M Expenses	180.04	186.40	192.92	199.72	206.72	
Interest on Working Capital	30.64	30.18	28.69	28.53	28.18	
Total	1726.30	1823.25	1851.14	1825.61	1790.62	



Filing Fee and Publication Expenses

88. The Petitioner has prayed reimbursement of fee paid by it for filing the Petition and publication expenses.

89. We have considered the submissions of the Petitioner. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present Petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

License Fee & RLDC Fees and Charges

90. The Petitioner has sought reimbursement of licensee fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for 2019-24 tariff period. The Petitioner shall be entitled for 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 for recovery of RLDC fee and charges in accordance with Regulations 70(3) of the 2019 Tariff Regulations for the 2019-24 tariff period.

Goods and Services Tax

91. 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, the same may be allowed to be recovered from the beneficiaries.



92. 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

93. 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 consequential IWC.

94. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses on projected basis for 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 by the Commission vide order dated 3.8.2021 in Petition No. 260/MP/2020 wherein the Commission has approved security expenses from 1.4.2019 to 31.3.2024. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. 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 has become infructuous.

Capital Spares

95. The Petitioner has sought reimbursement of capital spares at the end of 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

96. TANGEDCO during the hearing dated 26.7.2022 made the following oral submissions:



(a) The Commission had directed the Petitioner to charge the beneficiaries only upto the SCOD. After the SCOD, the transmission charges should be borne by WKTL.

(b) A joint committee meeting was held with CEA wherein the utilization of Hyderabad-Kurnool D/C line was discussed and SRPC concluded that independent commissioning of the transmission line without the other elements like Warora-Warangal and Chilakaluripeta-Hyderabad-Kurnool 765 kV Link may not be useful for the Southern Region Grid.

(c) Requested one week time to file the reply after the Petitioner submits the amended petition.

97. The Commission granted liberty to TANGEDCO to file reply by 24.8.2022 but TANGEDCO has not filed any reply in the matter.

98. We have considered the submissions of the TANGEDCO. The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 observed as follows:

“68. To summarise, annual transmission charges allowed for the instant transmission assets for the year 2018-19 (pro-rata for 21 days) are ₹102.58 lakh and the petitioner is directed to approach SCM/RPC for continuing to use the line reactor as bus reactor post scheduled COD of the associated transmission line and treatment of transmission charges beyond scheduled COD.”

99. The Commission vide order dated 25.2.2021 in Petition No. 248/TT/2019 directed the Petitioner to approach SCM/RPC for continuing to use the line reactor as bus reactor post scheduled COD of the associated transmission line and treatment of transmission charges beyond scheduled COD. In absence of the associated transmission line, the asset is being used as bus reactor. In compliance of the same, the Petitioner has submitted the minutes of the meeting of 39th meeting of TCC and SRPC dated 3.1.2022 wherein the SRPC has approved continuation of the use of 2x240



MVAR, 765 kV Switchable Line Reactors at Kurnool 756 kV Sub-station as bus reactors till COD of Hyderabad-Kurnool D/C line. As the beneficiaries have consented to use the line reactors in Kurnool Sub-station as bus reactors, the transmission charges approved for the said reactor in the instant order shall be shared by the beneficiaries as per the provisions of Tariff Regulations and the Sharing Regulations.

100. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission system was governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2010 (“the 2010 Sharing Regulations”). However, after repeal of the 2010 Sharing Regulations, with effect from 1.11.2020, sharing of transmission charges is governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2020 (“the 2020 Sharing Regulations”). The COD of the transmission asset is approved as 11.3.2019. Therefore, the transmission charges from 11.3.2019 to 31.10.2020 shall be governed by the 2010 Sharing Regulations and from 1.11.2020 shall be governed by the 2020 Sharing Regulations. Accordingly, the liabilities of the DICs for arrears of the transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Sharing Regulations and shall be recovered from the concerned DICs through bill under Regulation 15(2)(b) of the 2020 Sharing Regulations.

101. To summarise:

- a. The trued-up Annual Fixed Charges (AFC) allowed for 2014-19 tariff period are:



(₹ in lakh)	
Particulars	2018-19 (pro-rata 21 days)
AFC	108.34

b. Annual Fixed Charges allowed in respect of the transmission asset for 2019-24 tariff period in this order are:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	1726.30	1823.25	1851.14	1825.61	1790.62

102. Annexure-I and Annexure-II given hereinafter form part of the instant order.

103. This order disposes of Petition No. 23/TT/2022 in terms of above discussions and findings.

sd/-
(P.K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I.S. Jha)
Member



Annexure-I

2014-19 Capital Expenditure	Admitted Capital Cost as on 1.4.2014/COD (₹ in lakh)	ACE (₹ in lakh)		Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (₹ in lakh)
		2018-19	Total			2018-19
Land – Freehold	365.97	-	-	365.97	-	-
Sub-station	7881.55	445.87	445.87	8327.42	5.28%	427.92
PLCC	174.29	-	-	174.29	6.33%	11.03
Total	8421.81	445.87	445.87	8867.68	Total	438.95
Average Gross Block (₹ in lakh)						8644.74
Weighted Average Rate of Depreciation						5.08%



Annexure-II

2019-24	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Projected ACE (₹ in lakh)					Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (₹ in lakh)					
		2019-20	2020-21	2021-22	2022-23	Total			2019-20	2020-21	2021-22	2022-23	2023-24	
Capital Expenditure														
Land - Freehold	365.97	-	-	-	-	-	365.97	-	-	-	-	-	-	-
Sub-station	8327.42	910.25	720.70	116.48	32.87	1780.30	10107.72	5.28%	463.72	506.78	528.88	532.82	533.69	
PLCC	174.29	0.69	-	-	-	0.69	174.98	6.33%	11.05	11.08	11.08	11.08	11.08	
Total	8867.68	910.95	720.70	116.48	32.87	1781.00	10648.68		474.77	517.85	539.95	543.90	544.76	
									Average Gross Block (₹ in lakh)	9323.15	10138.98	10557.57	10632.24	10648.68
									Weighted Average Rate of Depreciation	5.09%	5.11%	5.11%	5.12%	5.12%

