

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 660/TT/2020

Coram:

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

Date of Order: 03.01.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and determination of transmission tariff from COD to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 in respect of 1 X 500MVA, 400/220/33 kV, 3-Ph ICT-3 with GIS bays in 400 kV side and AIS bays in 220 kV side at Misa Sub-station under "North Eastern Region Strengthening Scheme-IV (NERSS-IV)" in North-Eastern Region.

And in the matter of:

Power Grid Corporation of India Limited,
"Saudamini", Plot No. 2, Sector 29,
Gurgaon – 122 001 (Haryana).

.... Petitioner

Vs.

1. Assam Electricity Grid Corporation Limited,
Bijulee Bhawan, Paltan Bazar,
Guwahati – 781001, Assam.
2. Meghalaya Energy Corporation Limited,
Short Round Road, "Lumjingshai"
Shillong – 793001, Meghalaya
3. Government of Arunachal Pradesh,
Itanagar, Arunachal Pradesh
4. Power and Electricity Department,
Government of Mizoram,
Aizawl, Mizoram



5. Manipur State Power Distribution Corporation Limited,
Keishampat, Imphal.
6. Department of Power,
Government of Nagaland,
Kohima, Nagaland
7. Tripura State Electricity Corporation Limited,
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura (W) – 799001, Tripura

....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 : None

ORDER

The Petitioner, Power Grid Corporation of India Limited, has filed the instant petition for determination of transmission tariff for the period from the date of commercial operation to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of 1X500 MVA, 400/220/33 kV, 3-Ph ICT-3 with GIS bays in 400 kV side and AIS bays in 220 kV side at Misa Sub-station (hereinafter referred to as “the transmission asset”) under “North Eastern Region Strengthening Scheme-IV (NERSS-IV)” in North-Eastern Region (hereinafter referred to as “the transmission project”).

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

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

2. Approve the Transmission Tariff for the tariff block 2019-24 block for the asset covered under this petition, as per para –8.0 above.



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

4. 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.

5. 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.

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

7. 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 at para 8.0 above.

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

9. 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.

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

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

Background

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

(a) The Investment Approval (hereinafter referred to as "IA") for implementation of the transmission project was accorded by the Board of Directors of the Petitioner company in its 329th meeting held on 26.5.2016 for ₹36460 lakh including IDC of ₹2055 lakh based on December 2015 price level (communicated vide Memorandum No. C/CP/NERSS-IV dated 16.6.2016).



(b) Subsequently, an amendment to the IA was accorded approval by the Board of Directors of the Petitioner vide Memorandum No. C/CP/PA1617-11-0R IA016/AMEND-I dated 30.11.2016 with an estimated cost of ₹40919 lakh including IDC of ₹ 2307 lakh, at December 2015 price level.

(c) The scope of the transmission project was discussed and agreed in the 4th Standing Committee on Power System Planning of North- Eastern Region held on 13.12.2014. Subsequently, the transmission project was discussed and agreed in 15th TCC/NERPC meeting held on 20.8.2015 and 21.8.2015 at Guwahati.

(d) The scope of work covered under the transmission project is as follows:

(i) Augmentation of Transformers and Reactors

a. Dismantling / Removal of 4x105 MVA, 400/220kV ICT[#] at Misa sub-station of PowerGrid and addition of 2x500 MVA, 400/220 kV ICT at Misa sub-station with GIS bays utilizing the space vacated after removal of 4x105 MVA, 400/220 kV ICT.

Note: 4x105 MVA, 400/220 kV ICT thus released shall be kept as Regional Spare

b. 1x125 MVAR 420 kV bus Reactor at Balipara (PowerGrid) sub-station.

c. 1x125 MVAR 420 kV bus Reactor at Bongaigaon (PowerGrid) sub-station.

(ii) Operation of Silchar-Imphal 400 kV D/C line at rated voltage (400 kV) (presently operated at 132 kV)

a. Up-gradation of existing 2x50 MVA, 132/33kV Imphal (PowerGrid) sub-station to 400 kV with following scope:

▪ Installation of 400/132 kV, 2x315 MVA (7x105 MVA, 1-Ph) ICTs,

▪ 2 numbers 400 kV line bays for termination of Silchar - Imphal 400kV D/C line

▪ 80 MVAR, 420 kV Bus Reactor

b. Extension of existing 400/132 kV Silchar (PowerGrid) sub-station

▪ 2 numbers of 400kV GIS line bays for termination of Silchar - Imphal 400kV D/C line

▪ Installation of 1x125 MVAR, 420kV Bus Reactor with GIS bays

(iii) Reconductoring of Agartala GBPP-Agartala (State) 132kV D/C



a. Reconductoring of Agartala GBPP - Agartala (State) 132 kV D/C line with High Capacity HTLS conductor along with necessary upgradation/ modification in bay equipment at both ends.

(e) The Petitioner has submitted that the entire scope of the transmission project has been implemented and status of tariff petitions for the transmission assets covered under the transmission project are as follows:

Sl. No.	Asset Name	SCOD as per IA	Actual COD	Petition
1	(a) Up gradation of existing 2X50 MVA, 132/33 kV Imphal (POWERGRID) SS to 400 kV by installation of 400/132 kV, 2X315 MVA (7X105 MVA, 1-Ph) ICTs, 2 numbers 400 kV line bays for termination of 400 kV D/C Silchar - Imphal line and 80 MVAR, 420 kV Bus Reactor along with associated bays at Imphal sub-station.	26.5.2018	29.1.2019	237/TT/2018
	(b) Extension of existing 400/132 kV Silchar (PowerGrid) SS with 2 numbers of 400 kV GIS line bays for termination of Silchar Imphal 400kV D/C line.			
	(c) 1x125 MVAR, 420 kV Bus Reactor along with GIS bays at Silchar sub-station.		20.12.2018	237/TT/2018
2	1x125 MVAR, 420 kV Bus Reactor along with associated bay at Balipara (PowerGrid) sub-station		22.7.2018	237/TT/2018
3	1x125 MVAR, 420 kV Bus Reactor along with associated bay at Bongaigaon (PowerGrid) sub-station		8.2.2018	237/TT/2018
4	Reconductoring of Agartala GBPP - Agartala (State) 132 kV D/C line with High Capacity HTLS conductor along with necessary up gradation/ modification in bay equipment at both ends		31.3.2018	237/TT/2018
5	Dismantling/ Removal of 4 X 105 MVA, 400/220 kV ICT at Misa sub-station of PowerGrid and addition of 1X500 MVA, 400/220 kV ICT at Misa sub-station (4x105 MVA, 400/220kV ICT thus released shall be kept as Regional Spare)		29.3.2019	Diary No. 329/2020
6*	1X500 MVA, 400/220/33 kV, 3-Ph ICT-3 with GIS bays in 400 Kv side and AIS bays in 220 kV side at Misa sub-station.		29.8.2019	Covered under instant petition

* The instant assets had been filed initially in Petition No. 237/TT/2018 (as a part of "Asset-1") for approval of tariff under tariff block 2014-19. The Commission vide order dated 5.7.2019 in 237/TT/2018



excluded the instant assets from the scope of the petition as the same was not commissioned at the time of Final Hearing and directed for filing a separate petition for the same.

(f) As per IA dated 16.6.2016, the transmission assets were scheduled to be put into commercial operation within 24 months from the date of approval of Board of Directors (26.5.2016) i.e., by 25.5.2018.

(g) The details of the instant transmission asset including SCOD, COD and time over-run are as follows:

SCOD	COD claimed	Time over-run
25.5.2018	29.8.2019	461 days

4. The Respondents are distribution licensees, power departments and transmission licensees, who are procuring transmission services from the Petitioner, mainly beneficiaries of the North-Eastern Region.

5. The Petitioner has served the petition on the Respondents and notice of this petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notices published in the newspapers by the Petitioner.

6. The hearing in this matter was held on 29.10.2021 through video conference and order was reserved.

7. This order is issued considering the main petition dated 19.5.2020 and submissions made by the Petitioner vide affidavits dated 15.9.2021 and 25.11.2021.

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

Determination of Transmission Tariff from COD to 31.3.2024



9. The Annual Fixed Charges (AFC) claimed by the Petitioner in respect of the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)					
Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	213.46	387.90	403.15	403.91	403.91
Interest on Loan	226.48	388.35	373.31	341.54	308.72
Return on Equity	230.16	418.83	435.72	436.66	436.66
Interest on working capital	15.84	28.15	28.76	28.69	28.49
O&M Expenses	132.20	232.10	240.24	248.92	257.18
Total	818.14	1455.33	1481.18	1459.72	1434.96

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

(₹ in lakh)					
Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	18.67	19.34	20.02	20.74	21.43
Maintenance Spares	33.60	34.82	36.04	37.34	38.58
Receivables	170.45	179.42	182.61	179.97	176.43
Total	222.72	233.58	238.67	238.05	236.44
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	15.84	28.15	28.76	28.69	28.49

Date of Commercial Operation (“COD”)

11. The Petitioner has claimed COD in respect of the transmission asset as follows:

SCOD for the transmission asset	Completion of Trial run	COD claimed for the transmission asset
25.5.2018	28.8.2019	29.8.2019

12. In support of COD of the transmission asset, the Petitioner has submitted CEA energisation certificate dated 22.7.2019, RLDC charging certificate dated 25.9.2019 certifying that trial operation completed on 28.8.2019 and CMD certificate (as required under the Grid Code) dated 30.9.2019.

13. Taking into consideration CEA energisation certificate, RLDC charging



certificate and CMD certificate, COD of the transmission asset is approved as 29.8.2019.

Capital Cost

14. 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 Asset-before the date of commercial operation;*
- (i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
- (j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway.*
- (k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;*
- (l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;*
- (m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;*
- (n) Expenditure on account of change in law and force majeure events; and*
- (o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.*



(3) The Capital cost of an existing project shall include the following:
(a) Capital cost admitted by the Commission prior to 1.4.2019 duly tried up by excluding liability, if any, as on 1.4.2019;
(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
(c) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
(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 Asset-forming part of the project, but not in use, as declared in the tariff petition;
- (b) De-capitalised Asset-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 asset.

- (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.”



15. The Petitioner vide Auditor Certificate dated 24.10.2019 has claimed the following capital cost as on COD and Additional Capital Expenditure (ACE) projected to be incurred during 2019-24 period, in respect of the transmission asset:

Apportioned approved cost (as per FR)	Capital Cost claimed (as on COD)	Projected ACE			(₹ in lakh)
		2019-20	2020-21	2021-22	Estimated Completion Cost
10966.67	6721.85	429.91	564.25	33.68	7749.69

Cost Over-run

16. The estimated completion cost of the transmission asset based on the Auditor's Certificate works out to be ₹7749.69 lakh including IEDC and IDC. Therefore, there is no cost over-run as per approved FR of ₹10966.67 lakh.

17. The Petitioner has submitted Form-5 and justification for cost variation from FR cost of ₹10966.67 lakh to completion cost of ₹7749.69 lakh as on 31.3.2024.

18. We have perused the documents submitted by the Petitioner and observe that the cost variation is primarily on account of variation in estimated prices and final competitive prices. Therefore, the cost variation is allowed.

Time Over-run

19. SCOD of the transmission asset was within 24 months from the date of IA. Accordingly, SCOD was 25.5.2018 against which the transmission asset has been put under commercial operation on 29.8.2019. Therefore, there is time over-run of 461 days in COD of the transmission asset.



20. The Petitioner has submitted the following reasons for delay in COD of the transmission asset:

a. Delay in Finalization of Layout due to Site Constraints (4 months)

Activities for implementation of the transmission asset were started immediately upon investment approval (i.e., 26.05.2016) and the LOA (Letter of Award) was placed timely as planned. The work involved extension of existing operational sub-station. Due to acute space constraints, major changes had to be incorporated in the original layout plan. Re-orientation of layout to adjust/ fit into the available space took considerable time and could be finalized only in November 2016 and consequently quantity of some major equipment was finalized in December 2016. This initial delay in finalization of layout resulted in overall delay of around 4 months in commencement of site activity.

b. Delay in Transportation of Transformer (4 months)

Transportation of the transformers, which were dispatched in June 2017, got substantially delayed due to the following factors:

- **Bihar Floods:** The transformers were stranded in Bihar due to heavy floods in August 2017 and subsequent restriction in movement of heavy consignments.
- **Brahmaputra River Crossing:** These being the first 500 MVA transformers (heaviest) supplied in NER, their passage over bridges on the river Brahmaputra were not allowed and the consignment was stranded on the north bank of the river for around 2 months before arrangement for Barge and Jetties could be made for water transportation. It took more than 6 months from despatch to reach the transformers at site in December 2017, causing a delay of around 4 months from schedule.

c. Damage in GIS Bus Ducts (17 months)

A number of GIS ducts, which were supplied in December 2017, got damaged during transit. Replacement against damaged components had to be sourced from abroad (Czech Republic) by the contractor, which took around 9 months' time to reach site in September 2018. Rectification of damaged duct which is a



specialized work requiring manufacturer's experts took some time and GIS installation works could be started in January 2019. As per schedule, the bus duct installation was to be completed by March 2018, whereas installation works could be completed only by August 2019. Thus, there was a delay of 17 months.

d. Site Hindrances (1 month)

As the work was being carried out in an existing charged sub-station, a number of new structures were to be installed adjacent to existing equipment/ structures in precarious locations, especially four numbers 220 kV (3 numbers CTBN and 1 number CC type) tower foundations, where extreme precaution had to be taken for safety of equipment/ workers, resulting in further slow-down of progress in execution of works at site as manual excavation had to be carried out at number of locations. Some equipment foundations were to be constructed after removing/ breaking existing foundations as per layout. Further, several equipment foundations which were placed near tower foundations, could only be done after completion of the tower foundations. There has been a delay of around 1 month due to these factors.

e. Delay due to delay in commissioning of ICT-I

Some civil/ erection works viz. 2 numbers 220kV CC and 2 numbers 220 kV CTBN towers, 33 kV BPI etc. were directly related to the commissioning of new ICT-I as work front could be made available only after dismantling of old ICT-I/ commissioning of new one. These works could be started in March 2019 and completed in July 2019.

f. Delay due to Working Space Constraints (1 month)

Installation of 400 kV GIS Bus Duct got delayed due to fouling with existing CT structure, which had to be modified for continuation of work. Also, for installation of 220 kV GIS Bus Duct, installed 220 kV Equipment viz. CT and Isolator had to be dismantled including structures due to space constraint. There has been a delay of around 1 month due to these factors.

g. Bandhs

Around 23 days have been affected due to various bandhs called by local



organizations.

h. Severe rainfall

There has been a delay of 53 days in execution including bus duct erection works due to heavy rainfall during March-July 2017 and April-July 2019. The monsoon in Assam was unprecedented in 2019. Heavy rainfall that continued for days, severely delayed all outdoor activities. In order to avoid ingress of moisture in the GIS module, indoor GIS erections have been avoided during heavy rainy days, resulting in delay in erection work. The unprecedented rain had severely hampered communication, physical infrastructure and transport as most of the blocks and sub-divisions were cut off with their district headquarters. The unforeseen event had affected the supplies of the project as the major routes and modes of transport were rendered useless. This event had led to cascading effect that pushed the schedule of Petitioner beyond its target date and severity of flood and contractors delay impacted the timely completion among other undesired consequences.

21. We have considered the submissions of the Petitioner. It is noted that in response to technical validation letter dated 6.9.2021, the Petitioner has only submitted the details of time over-run in Form-12 vide affidavit dated 25.11.2021 and has not submitted any documentary evidence in support of the time overrun. In the absence of supporting documents, it is not possible to conduct a prudence check on the time over-run.

22. Accordingly, we disallow the entire time over-run for the said asset. The details of time over-run not condoned is as follows:

SCOD	COD	Time over-run	Time over-run condoned	Time over-run not condoned
25.5.2018	29.8.2019	461 days	-	461 days

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



23. The Petitioner has claimed IDC in respect of the transmission asset and has submitted the Auditor's Certificate dated 24.10.2019 in support of the same. The Petitioner has submitted the computation of IDC along with year-wise details of the IDC discharged.

24. The loan amount as on COD has been mentioned in Form-6 and Form-9C. While going through these documents, it is observed that there is mismatch in loan amount between IDC statement and in Form-9C. Therefore, the allowable IDC has been worked out based on the available information and relying on loan amount as per Tariff Form 9-C. The Petitioner is directed to submit the detailed IDC statement by rectifying the above-mentioned deviation, at the time of true up.

25. The loan details submitted in Form-9C for 2019-24 tariff period and IDC computation statement have been considered for the purpose of IDC calculation on cash basis and on accrued basis. The un-discharged IDC as on COD has been considered as ACE during the year in which it has been discharged. Further, adjustment on account of time over-run has been done to arrive at the admissible IDC. However, in the statement showing IDC discharged up to COD, the Petitioner has not indicated the floating rate of interest of the loans deployed. IDC on cash basis up to COD has been worked out on the basis of loan details given in Form-9C for the transmission asset.

26. Accordingly, based on the information furnished by the Petitioner, IDC considered, is as follows:

(₹ in lakh)					
IDC claimed	IDC allowed	IDC disallowed (due to time	IDC discharged	IDC Un-discharged	IDC discharged



		over run/ computational difference)	(as on COD)	(as on COD)	2019-20
A	B	C=A-B	D	E=B-D	F
333.33	-	333.33	-	-	-

27. The Petitioner has claimed IEDC of ₹408.62 lakh and has submitted Auditor's Certificate in support of the same. The Petitioner has also submitted that entire IEDC has been discharged as on COD in respect of the transmission asset. It is observed that IEDC claimed is within the limit as per FR. Accordingly, pro-rata IEDC allowed and disallowed for the transmission asset are as follows:

(₹ in lakh)		
IEDC claimed (as per Auditor Certificate)	Pro-rata IEDC disallowed (due to time overrun)	Pro-rata IEDC allowed (as on COD)
1	2	3= (1-2)
408.62	158.16	250.46

Initial Spares

28. The Petitioner has claimed Initial Spares for transmission asset in accordance with Regulation 23(d) of the 2019 Tariff Regulations subject to the following ceiling norms:

“(d) Transmission System

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

29. The Petitioner has claimed the following Initial Spares as per Form-13 vide affidavit dated 15.9.2021:



Particulars	Plant & Machinery Cost up to cut-off date (₹ in lakh) (excluding IDC and IEDC)	Initial Spares Claimed (₹ in lakh)	Ceiling limit (in%)
Sub-station (GIS-Brownfield)	6454.39	298.99	6.00

30. The discharge of Initial Spares in respect of the transmission asset claimed by Petitioner is as follows:

(₹ in lakh)			
Particulars	As on COD	2019-20	Total as on cut-off date
Sub-station (GIS-Brownfield)	297.41	1.58	298.99

31. We have considered the submissions of the Petitioner. The initial spares claimed by the Petitioner are within ceiling of 6% specified in the 2019 Tariff Regulations. The allowed initial spares are as follows:

Particulars	Plant & Machinery Cost up to cut-off date (₹ in lakh) (excluding IDC and IEDC)	Allowable Initial Spares (₹ in lakh)	Ceiling limit (in%)	Initial Spares allowed (₹ in lakh)	Discharge of Initial Spares (as on COD) (₹ in lakh)
Sub-station (GIS-Brownfield)	6454.39	392.90	6.00	298.99	297.41

Capital Cost allowed as on COD

32. Accordingly, capital cost allowed in respect of the transmission asset as on COD is as follows:

(₹ in lakh)				
Capital Cost claimed in Auditor Certificate (as on COD) (A)	IDC Disallowed due to time-over-run/ Computational difference (B)	Un-discharged IDC (as on COD) (C)	IEDC Disallowed (D)	Expenditure up to COD (D) = (A-B-C)
6721.85	333.33	-	158.16	6230.36

Additional Capital Expenditure (“ACE”)

33. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as follows:



“24. Additional Capitalization within the original scope and up to the cut-off date:

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

(a) *Undischarged liabilities recognized to be payable at a future date;*

(b) *Works deferred for execution;*

(c) *Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;*

(d) *Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law;*

(e) *Change in law or compliance of any existing law; and*

(f) *Force Majeure events:*

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

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

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

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

a) *Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*

b) *Change in law or compliance of any existing law;*

c) *Deferred works relating to ash pond or ash handling system in the original scope of work;*

d) *Liability for works executed prior to the cut-off date;*

e) *Force Majeure events;*

f) *Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and*

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

(d) The replacement of such asset or equipment has otherwise been allowed by the Commission.”

34. The Petitioner has claimed projected ACE for 2019-24 tariff period on account of balance and retention payments due to un-discharged liability projected for works executed within the cut-off date and unexecuted works within cut-off date. The Petitioner has claimed projected ACE of ₹429.91 lakh for the year 2019-20, ₹564.25 lakh for the year 2020-21 and ₹33.68 lakh for FY 2021-22 as per Auditor’s Certificate.

35. We have considered the submissions of Petitioner. The Petitioner vide affidavit dated 15.9.2021 has submitted revised Form-7. ACE claimed on account of balance and retention payments is allowed under Regulations 24(1)(a) of the 2019 Tariff Regulations. ACE allowed in respect of the transmission asset is as follows:

FR	Capital Cost (as on COD)	ACE allowed			Capital Cost (as on 31.3.2024)
		2019-20	2020-21	2021-22	
10966.67	6230.36	429.91*	564.25	33.68	7258.20

*includes discharge of Initial Spares

Debt-Equity Ratio

36. 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.”

37. The details of debt-equity considered for the purpose of computation of tariff for 2019-24 period in respect of the transmission asset is as follows:

Funding	Capital Cost (as on COD) (₹ in lakh)	(in %)	Total Capital Cost (as on 31.3.2024) (₹ in lakh)	(in %)
Debt	4361.25	70.00	5080.74	70.00
Equity	1869.11	30.00	2177.45	30.00
Total	6230.36	100.00	7258.20	100.00

Depreciation

38. 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 Asset-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 asset”

(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.”*



39. We have considered the submissions of the Petitioner. WAROD at Annexure-I has been worked out after taking into account the depreciation rates assets as specified in the 2019 Tariff Regulations. Depreciation has been worked out considering the admitted capital expenditure as on COD and ACE in 2019-24 period. Depreciation allowed in respect of the transmission asset is as follows:

(₹ in lakh)					
Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	6230.36	6660.27	7224.52	7258.20	7258.20
Addition during the year 2019-24 due to projected ACE	429.91	564.25	33.68	0.00	0.00
Closing Gross Block	6660.27	7224.52	7258.20	7258.20	7258.20
Average Gross Block	6445.31	6942.39	7241.36	7258.20	7258.20
Weighted average rate of Depreciation (WAROD) (in %)	5.23	5.22	5.21	5.21	5.21
Lapsed useful life at the beginning of the year (Year)	0.00	1.00	2.00	3.00	4.00
Balance useful life at the beginning of the year (Year)	25.00	24.00	23.00	22.00	21.00
Aggregated Depreciable Value	5800.78	6248.15	6517.22	6532.38	6532.38
Remaining Aggregate Depreciable Value at the beginning of the year	5800.78	6049.38	5956.21	5593.92	5215.72
Depreciation during the year	198.78	362.23	377.44	378.20	378.20
Cumulative Depreciation at the end of the year	198.78	561.01	938.45	1316.65	1694.85
Remaining Aggregate Depreciable Value at the end of the year	5602.00	5687.14	5578.77	5215.72	4837.52

Interest on Loan (“IoL”)



40. 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 asset, 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”.*

41. The weighted average rate of interest of IoL has been considered on the basis of the rates prevailing as on COD for respective loans. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period will be adjusted. Accordingly, the floating rate of interest, if any,



will be considered at the time of true-up. In view of above, IoL has been worked out in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of the transmission asset is as follows:

Particulars	(₹ in lakh)				
	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	4361.25	4662.19	5057.16	5080.74	5080.74
Cumulative Repayments up to Previous Year	0.00	198.78	561.01	938.45	1316.65
Net Loan-Opening	4361.25	4463.41	4496.15	4142.29	3764.09
Addition due to ACE	300.94	394.98	23.58	0.00	0.00
Repayment during the year	198.78	362.23	377.44	378.20	378.20
Net Loan-Closing	4463.41	4496.15	4142.29	3764.09	3385.89
Average Loan	4412.33	4479.78	4319.22	3953.19	3574.99
Weighted Average Rate of Interest on Loan (in %)	8.099	8.098	8.098	8.096	8.094
Interest on Loan	210.91	362.76	349.75	320.07	289.35

Return on Equity ("RoE")

42. 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 due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

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



ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

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

- a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;
- b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.

(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.”

43. The Petitioner has submitted that MAT rate is applicable to it. MAT rate applicable in the year 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 in respect of the transmission asset is as follows:

Particulars	(₹ in lakh)				
	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity	1869.11	1998.08	2167.35	2177.45	2177.45
Addition due to ACE	128.97	169.28	10.10	0.00	0.00
Closing Equity	1998.08	2167.35	2177.45	2177.45	2177.45
Average Equity	1933.59	2082.72	2172.40	2177.45	2177.45
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (Pre-tax)	18.782	18.782	18.782	18.782	18.782
Return on Equity (Pre-tax)	214.33	391.18	408.02	408.97	408.97

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

44. Regulations 35(3)(a) and 35(4) of the 2019 Tariff Regulations provide as follows:

“35 (3) Transmission system: (a) The following normative operation and maintenance expenses shall be admissible for the combined 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



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
<i>±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)</i>	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 years.*
- (b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of sub-station bays, transformer capacity of the transformer (in MVA) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA and per km respectively.*
- (c) The Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check:*

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

(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 triuing up.”

45. O&M Expenses claimed by the Petitioner in respect of the transmission asset are as follows:

(₹ in lakh)

Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Sub-station Bays					
220 kV (numbers)	1	1	1	1	1
400 kV GIS (numbers)	1	1	1	1	1
Norm (₹ lakh/bay)					
220 kV	22.51	23.30	24.12	24.96	25.84
400 kV GIS*	22.51	23.30	24.12	24.96	25.84
Sub-total Sub-station O&M Expenses	45.02	46.60	48.24	49.92	51.68
Transformers					
400 kV (MVA capacity)	500	500	500	500	500
Norm (₹ lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
Sub-Total Transformer expenses	179.00	185.50	192.00	199.00	205.50
Total O&M Expenses (₹ in lakh)	132.21	232.10	240.24	248.92	257.18

* O&M expenses for the GIS bays shall be allowed by multiplying 0.70 of the O&M Expenses of the normative O&M expenses for bays.

46. The O&M Expenses allowed in respect of the transmission asset are as follows:

(₹ in lakh)

Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Sub-station Bays					
220 kV (numbers)	1	1	1	1	1
400 kV GIS (numbers)	1	1	1	1	1
Norm (₹ lakh/bay)					
220 kV	22.51	23.30	24.12	24.96	25.84
400 kV GIS*	22.51	23.30	24.12	24.96	25.84
Sub-total Sub-station O&M Expenses	45.02	46.60	48.24	49.92	51.68
Transformers					
400 kV (MVA capacity)	500	500	500	500	500
Norm (₹ lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411



Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Sub-Total Transformer expenses	179.00	185.50	192.00	199.00	205.50
Total O&M Expenses (₹ in lakh)	132.21	232.10	240.24	248.92	257.18

* O&M expenses for the GIS bays shall be allowed by multiplying 0.70 of the O&M Expenses of the normative O&M expenses for bays

Interest on Working Capital (“IWC”)

47. Regulations 34(1)(c), 34(3) and 34(4) and 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. Definition - *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;”*

48. 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 IWC 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 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-24. The components of the working capital and interest allowed thereon is as follows:

(₹ in lakh)					
Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M expenses for one month)	18.67	19.34	20.02	20.74	21.43
Working Capital for Maintenance Spares (15% of O&M expenses)	33.60	34.81	36.04	37.34	38.58
Working Capital for Receivables (Equivalent to 45 days of annual fixed cost / annual transmission charges)	160.70	169.32	172.54	170.15	166.91
Total Working Capital	212.97	223.48	228.59	228.23	226.92
Rate of Interest for working capital (in %)	12.05	11.25	10.50	10.50	10.50
Interest of working capital	15.15	25.14	24.00	23.96	23.83

Annual Fixed Charges for the 2019-24 Tariff Period

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

(₹ in lakh)					
Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	198.78	362.23	377.44	378.20	378.20



Particulars	2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
Interest on Loan	210.91	362.76	349.75	320.07	289.35
Return on Equity	214.33	391.18	408.02	408.97	408.97
Operation and Maintenance Expense	132.21	232.10	240.24	248.92	257.18
Interest on Working Capital	15.15	25.14	24.00	23.96	23.83
Total	771.36	1373.40	1399.45	1380.13	1357.52

Filing Fee and Publication Expenses

50. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. 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.

Licence Fee and RLDC Fees and Charges

51. 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 2019-24 tariff period.

Goods and Services Tax

52. 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.



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

Security Expenses

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

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

Capital Spares

56. 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

57. With effect from 1.11.2020, the 2010 Sharing Regulations has been repealed and sharing of transmission charges is governed by the provisions of the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance



with the provisions of respective Tariff Regulations and shall be recovered from the concerned DICs under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection, and disbursement of transmission charges for subsequent period shall be recovered in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

58. To summarise,

(a) AFC allowed in respect of the transmission asset for the 2019-24 tariff period in the instant order are as follows:

(₹ in lakh)				
2019-20 (Pro-rata for 216 days)	2020-21	2021-22	2022-23	2023-24
771.36	1373.40	1399.45	1380.13	1357.52

59. Annexure-I given hereinafter shall form part of the order.

60. This order disposes of Petition No. 660/TT/2020 in terms of the above discussions and findings.

sd/-
(P.K. Singh)
Member

sd/-
(I.S. Jha)
Member

sd/-
(Arun Goyal)
Member

sd/-
(P.K. Pujari)
Chairperson



Annexure-I

2019-24	Admitted Capital Cost as on COD (₹ in lakh)	ACE			Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
Capital Expenditure as on 1.4.2019		2019-20	2020-21	2021-22			2019-20 (₹ in lakh)	2020-21 (₹ in lakh)	2021-22 (₹ in lakh)	2022-23 (₹ in lakh)	2023-24 (₹ in lakh)
Building	160.56	39.45	45.84	13.51	259.36	3.34%	6.02	7.45	8.44	8.66	8.66
Sub Station	6069.79	390.46	518.41	20.17	6998.83	5.28%	330.79	354.79	369.01	369.54	369.54
TOTAL	6230.36	429.91	564.25	33.68	7258.20		336.81	362.23	377.44	378.20	378.20
					Average Gross Block (₹ in lakh)		6445.31	6942.39	7241.36	7258.20	7258.20
					Weighted Average Rate of Depreciation (%)		5.23	5.22	5.21	5.21	5.21

