CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 690/TT/2020

Coram:

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

Date of order: 01.06.2022

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 the date of commercial operation (COD) to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 in respect of **Asset-I:** Pole-III (1500 MW) Extension off ±800 kV Champa & Kurukshetra HVDC stations for up gradation of existing HVDC convertor stations from 3000 MW to 6000 MW and **Asset-II:** Pole-IV (1500 MW) Extension of ± 800 kV Champa & Kurukshetra HVDC stations for up gradation of existing HVDC convertor stations from 3000 MW to 6000 MW under "Transmission System Strengthening in WR-NR Transmission Corridor for IPPs in Chhattisgarh".

And in the matter of:

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

Versus

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited,
   Vidyut Bhawan, Vidyut Marg,
   Jaipur-302005. (Rajasthan).

2. Ajmer Vidyut Vitran Nigam Limited,
   132 kV, GSS RVPNL Sub-station building,
   Caligiri road, Malviya Nagar,
   Jaipur-302017 (Rajasthan).

3. Jaipur Vidyut Vitran Nigam Limited,
   132 kV, GSS RVPNL Sub-station building,
   Caligiri road, Malviya Nagar,

Jaipur-302017 (Rajasthan).

4. Jodhpur Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub-station building,
Caligiri road, Malviya Nagar,
Jaipur-302017 (Rajasthan).

5. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building II,
Shimla-171004. (Himachal Pradesh).

6. Punjab State Electricity Board,
The Mall, Patiala-147001. (Punjab).

7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula (Haryana)-134109.

8. Power Development Department,
Government of Jammu & Kashmir,
Mini Secretariat,
Jammu.

9. Uttar Pradesh Power Corporation Limited,
(Formerly Uttar Pradesh State Electricity Board),
Shakti Bhawan, 14, Ashok Marg,
Lucknow-226001 (Uttar Pradesh).

10. Delhi Transco Limited,
Shakti Sadan, Kotla Road,
New Delhi-110002.

11. BSES Yamuna Power Limited,
BSES Bhawan, Nehru Place,
New Delhi.

12. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi.

13. Tata Power Delhi Distribution Limited,
33 kV Sub-station Building, Hudson Lines, Kingsway Camp,
North Delhi-110009.

14. Chandigarh Administration,
Sector -9,
Chandigarh.

15. Uttarakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road,

Dehradun.

16. North Central Railway,
Allahabad. (Uttar Pradesh).

17. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110002.

18. Madhya Pradesh Power Management Company Limited,
Shakti Bhawan, Rampur,
Jabalpur-482008.

19. Madhya Pradesh Power Transmission Company Limited,
Shakti Bhawan, Rampur,
Jabalpur-482008.

20. Madhya Pradesh Audyogik Kendra,
Vikas Nigam (Indore) Limited,
3/54, Press Complex, Agra-Bombay Road,
Indore-452008.

21. Maharashtra State Electricity Distribution Company Limited,
Hongkong Bank Building, 3rd Floor, M.G. Road, Fort,
Mumbai-400001.

22. Maharashtra State Electricity Transmission Company Limited,
Prakashganga, 6th Floor, Plot No. C-19, E-Block,
Bandra Kurla Complex, Bandra (East),
Mumbai-400051.

23. Gujarat Urja Vikas Nigam Limited,
Sardar Patel Vidyut Bhawan,
Race Course Road,
Vadodara-390007.

24. Gujarat Energy Transmission Corporation Limited,
Sardar Patel Vidyut Bhawan,
Race Course Road,
Vadodara-390007.

25. Electricity Department,
Government of Goa, Vidyut Bhawan, Panaji,
Near Mandvi Hotel,
Goa-403001.

26. Electricity Department,
Administration of Daman and Diu,
Daman-396210.

27. Electricity Department,
Administration of Dadra Nagar Haveli,
U.T., Silvasa-396230.

28. Chhattisgarh State Electricity Board,
P. O. Sunder Nagar, Dangania, Raipur,
Chhattisgarh-492013.

29. Chhattisgarh State Power Transmission Company Limited,
State Load Despatch Building, Dangania,
Raipur-492013.

30. Chhattisgarh State Power Distribution Company Limited,
P. O. Sunder Nagar, Dangania, Raipur,
Chhattisgarh-492013.

31. NTPCL Limited,
NTPC Bhavan, Scope Complex, 7,
Institutional Area, Lodhi Road,
New Delhi-110003.

32. SEI Sunshine Power Private Limited,
Menon Eternity, 10th floor, New No.165,
Old No. 110, St. Mary's Road, Alwarpet,
Chennai-18. **...Respondent(s)**

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

For Respondent: Shri Manish Garg, Advocate, UPPCL
Shri Anindya Khare, MPPMCL

ORDER

The Petitioner, Power Grid Corporation of India Limited, a deemed transmission licensee, has filed the instant petition for determination of tariff for the period from the date of commercial operation (COD) 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 the following assets under

"Transmission System Strengthening in WR-NR Transmission Corridor for IPPs in Chhattisgarh" (hereinafter referred to as “the transmission scheme”):

Asset-I: Pole-III (1500 MW) Extension off ±800 kV Champa & Kurukshetra HVDC stations for up-gradation of existing HVDC convertor stations from 3000 MW to 6000 MW and

Asset-II: Pole-IV (1500 MW) Extension of ± 800 kV Champa & Kurukshetra HVDC stations for up- gradation of existing HVDC convertor stations from 3000 MW to 6000 MW (hereinafter referred to as “the transmission asset”).

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 –9 above.

3) Condone the delay and allow IDC/IEDC as claimed in the petition as delay is on account of force majeure as per CERC Regulations’2019 22(2)(a) “uncontrollable factors”

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

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

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

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

8) Allow the petitioner to 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 8.8 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.

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

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

Background

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

a. The transmission scheme was agreed by the Northern Region (NR) constituents on connectivity and long term access in 31st Standing Committee meeting of NR held on 2.1.2013. The scope of the transmission scheme was discussed and agreed in 17th meeting of Western Region (WR) constituents regarding LTOA application in WR/35th meeting of Standing Committee on Power System Planning in WR held on 3.1.2013. The scheme has also been agreed in the 22nd WRPC meeting held on 26.2.2013 and 31st NRPC meeting held on 24.7.2014.

b. The Investment Approval (IA) and expenditure sanction of the transmission scheme was accorded by Board of Directors of the Petitioner Company in meeting dated 21.6.2014, vide Memorandum Ref. No. C/CP/SS WR-NR-Chhattisgarh IPP dated 24.6.2014 at an estimated cost of ₹515137 lakh including an IDC of ₹27875 lakh based on February, 2014 price level.

c. The scope of work covered under the transmission scheme broadly includes the following:

Transmission Line

(i) Kurukshetra (NR) - Jind 400 kV D/C (Quad) line: 95 km

Sub-station

(i) Extension of Champa Sub-station

- ±800 kV HVDC station
  - Upgradation of existing ± 800 kV HVDC converter station of 3000 MW capacity at Champa Pooling Station to 6000 MW capacity

(ii) Extension of Kurukshetra Sub-station

- ±800 kV HVDC station
  - Upgradation of existing ± 800 kV HVDC converter station of 3000 MW capacity at Champa Pooling Station to 6000 MW capacity
- 400 kV AC Sub-station
  - 400 kV Line Bays: 2 number

(iii) Extension of 400/220 kV Jind Sub-station

- 400 kV Line Bays: 2 number

d. All the assets covered under the transmission scheme have been completed and are covered under the following petitions:

Asset details	COD	Petition No
400 kV D/C (Quad) Kurukshetra - Jind Transmission line along with associated bays	11.12.2017	58/TT/2018
Asset-I: Pole-III (1500 MW) Extension of ±800 kV Champa & Kurukshetra HVDC stations for up gradation of existing HVDC convertor stations from 3000 MW to 6000 MW and	5.10.2019	Present Petition
Asset-II: Pole-IV (1500 MW) Extension of ± 800 kV Champa & Kurukshetra HVDC stations for up gradation of existing HVDC convertor stations from 3000 MW to 6000 MW.	30.3.2020	

e. As per IA dated 21.6.2014, the scheduled commercial operation date (SCOD) of the transmission assets was within 45 months from the date of IA i.e. by 21.3.2018. The details of the transmission assets including SCOD, COD and time over-run are as follows:

Assets	SCOD	COD	Time over-run
Asset-I	21.3.2018	5.10.2019	563 days
Asset-II		30.3.2020	740 days

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

5. The Petitioner has served the petition on the Respondents and notice of this petition has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notice published in the newspapers by the Petitioner. Madhya Pradesh Power Corporation Limited (MPPMCL), Respondent No.18, has filed its reply vide affidavit dated 23.2.2021 and has raised issues of time over-run, cost over-run, Initial Spares, ACE, taxes and transmission tariff of 2019-24 period. Uttar Pradesh Power Corporation Limited (UPPCL), Respondent No. 9, has filed its reply vide affidavit dated 30.10.2021 and has raised issues of time over-run, cost over-run, IDC and IEDC and security expenses. The Petitioner *vide* affidavits dated 28.10.2021 and 24.11.2021 has filed rejoinder to the replies of MPPMCL and UPPCL respectively. The issues raised by UPPCL and MPPMCL and clarifications thereto given by the Petitioner have been dealt in the relevant portions of this order.

6. This order is issued considering the submissions made by the Petitioner *vide* affidavit dated 27.8.2020 and affidavit 20.10.2021, reply of MPPMCL vide affidavit dated 23.2.2021, reply of UPPCL vide affidavit dated 30.10.2021 and Petitioner's rejoinder vide affidavits dated 28.10.2021 and 24.11.2021 to the replies of MPPMCL and UPPCL respectively.

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

8. Having heard the representatives of the Petitioner, learned counsel of UPPCL and the representative of MPPMCL and perused the material on record, we proceed to dispose of the petition.

Determination of Annual Fixed Charges for 2019-24 Tariff Period

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

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	5169.45	11182.61	11899.20	12406.11	12626.51
Interest on Loan	2591.28	5424.78	5375.87	5183.53	4823.54
Return on Equity	5612.10	12148.30	12936.12	13493.38	13735.66
O&M Expenses	642.13	1357.97	1404.47	1452.47	1502.47
Interest on Working Capital	229.09	492.88	516.85	532.10	534.46
Total	**14244.05**	**30606.54**	**32132.51**	**33067.59**	**33222.64**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	39.73	7444.74	7768.69	7993.80	8068.83
Interest on Loan	17.84	3216.76	3107.62	2944.69	2709.34
Return on Equity	42.86	8032.10	8382.13	8625.06	8706.03
O&M Expenses	7.00	1326.50	1373.00	1421.00	1471.00
Interest on Working Capital	1.82	339.77	350.31	357.01	357.11
Total	**109.25**	**20359.87**	**20981.75**	**21341.56**	**21312.31**

10. The Petitioner has claimed the following Interest on Working Capital (IWC) in respect of the transmission assets for 2019-24 tariff period:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	109.41	113.16	117.04	121.04	125.21
Maintenance Spares	196.95	203.70	210.67	217.87	225.37
Receivables	3580.91	3773.41	3961.54	4076.83	4084.75
Total Working Capital	**3887.27**	**4090.27**	**4289.25**	**4415.74**	**4435.33**
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	**229.09**	**492.88**	**516.85**	**532.10**	**534.46**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	106.79	110.54	114.42	118.42	122.58
Maintenance Spares	192.23	198.98	205.95	213.15	220.65
Receivables	2458.08	2510.12	2586.79	2631.15	2620.37
Total Working Capital	**2757.10**	**2819.64**	**2907.16**	**2962.72**	**2963.60**
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	**1.82**	**339.77**	**350.31**	**357.01**	**357.11**

Date of Commercial Operation ("COD")

11. The Petitioner has claimed actual COD in respect of Asset-I as 5.10.2019 and for Asset-II as 30.3.2020.

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

> ***"5. Date of Commercial Operation:*** *(1) The date of commercial operation of a generating station or unit thereof or a transmission system or element thereof and associated communication system shall be determined in accordance with the provisions of the Grid Code.*
>
> *(2) In case the transmission system or element thereof executed by a transmission licensee is ready for commercial operation but the interconnected generating station or the transmission system of other transmission licensee as per the agreed project implementation schedule is not ready for commercial operation, the transmission licensee may file petition before the Commission for approval of the date of commercial operation of such transmission system or element thereof:*
>
> *Provided that the transmission licensee seeking the approval of the date of commercial operation under this clause shall give prior notice of at least one month, to the generating company or the other transmission licensee and the long term customers*

of its transmission system, as the case may be, regarding the date of commercial operation:

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

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

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

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

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

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

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

13. In support of actual COD of Asset-I, the Petitioner has submitted CEA Energisation Certificates dated 3.11.2018 and 5.10.2018 under Regulation 43 of the

Central Electricity Authority (CEA) (Measures relating to Safety and Electric Supply) Regulations, 2010; RLDC Charging Certificate dated 9.12.2019, self-declaration COD letter dated 4.10.2019 and CMD certificate as required under the Grid Code.

14. In support of actual COD of Asset-II, the Petitioner has submitted CEA Energisation Certificate dated 8.1.2020 under Regulation 43 of CEA (Measures relating to Safety and Electric Supply) Regulations, 2010; RLDC Charging Certificate dated 29.7.2020, self-declaration of COD letter dated 28.3.2020 and CMD certificate as required under the Grid Code.

15. Taking into consideration CEA Energisation Certificates, RLDC Charging Certificates, CMD Certificates as required under the Grid Code, COD of Asset-I and Asset-II is approved as 5.10.2019 and 30.3.2020 respectively.

Capital Cost

16. 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 upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and

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

(4) The capital cost in case of existing or new hydro generating station shall also include:

(a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and

(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.

(5) The following shall be excluded from the capital cost of the existing and new projects:

(a) The assets forming part of the project, but not in use, as declared in the tariff petition;

(b) *De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:*

Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

(c) *In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;*

(d) *Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and*

(e) *Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment."*

17. The Petitioner vide Auditor's Certificate dated 29.6.2020 has submitted the capital cost incurred as on COD and Additional Capital Expenditure (ACE) projected to be incurred in respect of the transmission assets and the same are as follows:

(₹ in lakh)

Assets	Apportioned Approved Cost (As per FR)	Expenditure up to COD	Projected ACE				Estimated Completion Cost
			2019-20	2020-21	2021-22	2022-23	
Asset-I	312092.10	200774.05	6435.86	16783.95	11179.91	8599.93	243773.70
Asset-II	172409.90	139580.02	0.00	6307.76	5748.41	2874.21	154510.40

Cost Over-run

18. The Petitioner has submitted that the against the total FR apportioned cost of ₹312092.10 lakh and ₹172409.90 lakh, the estimated completed cost is ₹243773.70 lakh and ₹154510.40 in respect of Asset-I and Asset-II respectively, which is within the FR apportioned cost, hence, there is no cost over-run in case of the transmission assets. The Petitioner has further submitted that Form-5 has been submitted along with the petition with details regarding the cost variation.

19. MPPMCL has submitted that the details of IDC in Form-5 have been clubbed with other charges and in absence of the same it is not possible to scrutinize. MPPMCL has requested to direct the Petitioner to provide all data without clubbing other heads and prayed that the plea of the Petitioner is totally baseless and is devoid of merits. MPPMCL has further submitted that it is a clear cut case of overestimating first and then pleading for no cost over-run. MPPMCL has requested to disallow the excess cost incurred by the Petitioner.

20. In response, the Petitioner has submitted that there is no break-up available in original estimate as estimate was based on Budgetary Quotations and hence no break-up has been shown.

21. UPPCL has submitted that apportioned approved cost is much higher than the estimated completion cost as submitted by the Petitioner, in order to by-pass the issue of cost over-run. UPPCL has further submitted that the difference of 22% and 10% in estimated completion cost of Asset-I and Asset-II respectively and the apportioned approved cost in respect of Asset-I and Asset-II is high and no serious effort has been made by the Petitioner in spite of the observation of the Commission in order dated 23.5.2016 in Petition No. 201/TT/2014, which is as follows:

> *"13. We are of the view that the petitioner should adopt a prudent procedure to make cost estimates of different elements of the transmission projects to make the estimates more realistic."*

22. In response, the Petitioner has submitted that DPR is prepared based on standard practice and the updated schedule of rates. The Petitioner has further submitted that it is a Government enterprise and follows a well-laid down procurement policy which ensures both transparency and competitiveness in the bidding process. Through this process, lowest possible market prices for required product/ services are

obtained and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid prices against tenders may vary as compared to the cost estimate depending upon prevailing market forces, design and site requirements. The estimates are prepared by the Petitioner as per well-defined procedures. The FR cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts/general practice.

23. We have considered the submissions of the Petitioner, MPPMCL and UPPCL. The instant petition covers Pole-III and Pole-IV of Champa-Kurukshetra HVDC Station. Asset-I consists of Pole-III and Asset-II consists of Pole-IV and the Petitioner has apportioned the cost of Asset-I as ₹312092.10 lakh and Asset-II as ₹172409.90 lakh. There is a huge variation between the transmission assets. The Petitioner is directed to submit the reasons of such variation at the time of truing-up. As per Form-5 submitted by the Petitioner, the total cost of civil works for Asset-I is ₹12837.95 lakh and Asset-II is ₹4322.26 lakh. The Petitioner is also directed to submit the reasons for huge variation of civil cost associated with Pole-III and Pole-IV.

24. Against the total apportioned approved cost of ₹312092.10 lakh in respect of Asset-I and ₹172409.90 lakh in respect of Asset-II, the estimated completion cost is ₹243773.70 lakh and ₹154510.40 lakh in respect of Asset-I and Asset-II respectively. Therefore, the estimated completion cost is lower than the FR apportioned approved cost. Hence, there is no cost over-run observed in terms of FR cost.

Time over-run

25. As per the IA dated 21.6.2014, the transmission scheme was scheduled to be put into commercial operation within 45 months from the date of IA i.e. by 21.3.2018. However, the actual COD of the transmission assets is as follows:

Assets	SCOD	COD	Time over-run
Asset-I	21.3.2018	5.10.2019	563 days
Asset-II		30.3.2020	740 days

26. There is time over-run of 563 days and 740 days in case of Asset-I and Asset-II respectively.

27. The Petitioner has submitted that NOA (Notification of Award) was issued on 22.7.2014, immediately after IA was accorded and the working gangs were timely mobilized to achieve the scheduled completion target. Proactive actions involving various adaptive and mitigative steps were taken to overcome the hurdles associated with construction. However, in spite of the best efforts of the Petitioner, due to some unforeseen reasons, the completion of Pole-III and Pole-IV was stretched beyond its schedule completion date and achieved COD on 5.10.2019 and 30.3.2020 respectively. The Petitioner has submitted that the main reasons of time over-run are due to delay in handing over of land and delay in land acquisition, complexity of scheme in development of software in parallel operation of bi-pole and re-design of 800 kV Wall Bushing. The Petitioner has submitted the following details to substantiate its claim:

a) **Delay in handing over of land and delay in land acquisition at Champa Sub-station:**

(i) Janjgir (Champa), the heart of Chhattisgarh by its geographical position, has now become a hotspot for setting up new industries as the State Government has signed around 34 Memorandum of Understanding (MoUs) for thermal power plants slated to produce around 40,000 MW of power. Although, Janjgir-Champa does not have any coal and mineral reserves of its own, but still has got attention of industries because of its neighboring districts namely Raigarh, Korba etc. being rich in valuable mineral contents. Apart from this, Janjgir-Champa is the latest forested district in the State and has got a good rail and road connectivity with the Coal Enriched States of Jharkhand and Odisha. The Petitioner has further submitted that all these advantages have made this district as one of the

fastest growing districts of State and because of various advantages as explained above, numerous power plants and other industries have already been setup and the process is continuing, resulting in acquisition of private land at much higher rate as well as higher compensation amount as adequate government land is not available to meet the requirement.

(ii) The chronology of delay in land acquisition process as submitted by the Petitioner is as follows:

Sl. No.	Description	Time/ Duration	Reason For Delay	Remarks
1	Allotment of bhainso Government land at Pamgarh Tahsil	4.9.2009 to 16.11.2010	Lot of processing task with State Government department for obtaining the same	Total time taken is 13 months
2	Cancellation of Bhainso land and searching for new land for Champa Pooling Station	29.12.2010 to 15.2.2011	Due to cancellation of allotted land by ministry on 29.12.2010, new land was searched and intimated to district administration on 15.2.2011	Total time taken is 14 months due to cancellation of allotted land
3	Application for land allotment of Taga Village to District Collector Janjgir Champa and 158 acres Government land allotted by State Government	15.2.2011 to 30.9.2011	Most part of Taga Government land was in the name of CSPGCL Madwa Power plant for plantation of trees. After the NOC was obtained from CSPGCL & Forest department, land was finally allotted to the Petitioner	Champa pooling station/ HVDC Terminal station land details: (i) Government Land - 158 acre, (ii) Private land - 91.43 acre (final value)
4	Possession of 158 acres of Government land and start of construction activity	30.9.2011	Due to strong objection of local public of village Taga, work could not be started effectively on Government land even after obtaining the possession of government land.	100% (158 acre) Government land was in possession of the Petitioner on 30.9.2011
5	Application to Collector Janjgir-Champa for 82.36 acre in Taga & 9.07 acre of Chorbhatthi Private land acquisition and	13.6.2011 to 3.1.2012	State Government Administrative Delay	

	publishing of section 4, 6 & 9			
6	Award of private land of village Taga and Chorbhatthi and possession.	30.11.2012 to 15.4.2013	After 3rd and final meeting held on 15.4.2013 between local Government administrations, landowners and the Petitioner, some landowners agreed to give possession of their land and construction work was started on that portion only.	After the finalization of compensation in meeting 50% of private land was possessed by the Petitioner.
7	Supplementary Land Acquisition of 12.84 acres private land of village Taga	19.10.2013		Due to discrepancy in revenue records, missing survey Nos and small piece of land leftover outside the boundary wall & land for new PWD, PMGSY road diversion, it was required for acquiring the balance land as suggested by the Revenue Department, Janjgir
8	Award of 12.84 acres Taga land	13.6.2011 to 3.1.2015	State Government Administrative Delay	
9	Possession of 12.84 acre Taga land	13.4.2015		Possession was done after the completion of cheque distribution.
10	Possession of balance land out of 91.43 acre of previous land acquisition of village Taga & Chorbhatthi	6.12.2014	Some landowners filed case at High court Bilaspur demanding employment opportunities in the Petitioner's company. Apart from these, some land had disputes for ownership and proceedings were pending at Civil court.	Final possession of complete 91.43 acres of land has been obtained on 30.12.2014

11	Deployment of Police protection	from 1.10.2014 to till date		On Sept 2014, local public from village Taga had stopped all construction work for demanding of employment in ongoing construction work at site
12	Handing over of land	20.11.2014 to 25.4.2015	Due to delay in land acquisition handing over of land got delayed.	As per schedule, the land had to be handed over by 28.11.2014, but it was finally handed over by 25.4.2015.

(iii) The Petitioner had to handover leveled and compacted land to contractor by 28.11.2014. The possession of balance land was obtained on 30.12.2014, however working permission was allowed by villagers only after cheque distribution process which was completed by 13.4.2015 and finally the land was handed over on 25.4.2015. Thus, the delay from 28.11.2014 to 25.4.2015 i.e. 148 days was on account of delay in land acquisition of Champa Sub-station.

b) **Complexity of the transmission scheme in development of software in parallel operation of Bi-pole:**

(i) The conventionally worldwide bulk power HVDC bi-poles are conceived and built utilizing earth electrode stations wherein return path of current is through ground in case of single pole operation or unbalance operation of two poles. However, some problems in ground current operation had been observed in few HVDC projects. These problems include corrosion of underground piping networks, appearance of DC current in neutral connection of nearby transformers thereby increasing heating and noise. To avoid earth current flow, utilities across world sometimes restrict time and power level in ground return mode. Owing to such uncertainties, it was found prudent to incorporate a dedicated metallic conductor between two ends to run transmission link with reliability and without restrictions of rated power flow.

(ii) The Champa-Kurukshetra HVDC System is the first project in the world with parallel 800 kV bipoles on same transmission line and dedicated return

conductors (DMR) in place of earth electrode stations. Being a novel concept having multiple of modes/ arrangements and due to lack of operating experience of such scheme anywhere in the world, many challenges were encountered in design of scheme and implementation of its control and protection specifically. The complexity of the transmission scheme was further increased due to implementation of 6000 MW evacuation in two stages in two different but not too wide timeframes. The Petitioner has submitted that two bi-poles as a single scheme would be easier than integrating two bi-poles at different time frames because of required signal availability, difficulty in coordination of protections, control actions, etc.

(iii) From the control and protection point of view in integrated operation, in absence of any other similar reference worldwide, extensive and multiple iterations were found necessary to the C&P strategy along with rework to the existing Pole-I & Pole-II (CK-1) Strategies. As a result of this, the design phase for Pole-III & Pole-IV (CK-2) was longer than for any normal Bi-pole project to ensure that all design considerations are well captured.

(iv) In addition, any operational experience/ issue observed in CK-1 was fed as a return of experience into CK-2 resulting in changes to strategies in order to make the hardware or software design robust improving the scheme performance and reliability. Due to high voltage parallel operation, certain critical parameters are required to be exchanged between parallel poles in minimum possible time (typically 2-4 milli seconds). This has forced introduction of fast-comm between CK-1 and CK-2 with addition of more processors in control system hardware. This also necessitated changes to the functional software modules already delivered and in operation under CK-1 contract and the changes to existing CK-1 hardware. These changes resulted in the delay of finalisation of overall software and integration of Pole-III into the existing CK-1 operation resulting in certain delays. Following hardware changes were made for facilitating parallel bi-pole operation:

- Up-gradation of pole and Bi-pole Control Cubicle hardware to incorporate inter Bi-pole communication and software requirements.

- Installation of fast communication, including the design, manufacture and installation of fiber communication patch boxes, for parallel pole fast communication.
- Installation of additional copper cabling for inter-pole signal exchange between parallel poles for critical signals

(v) All HVDC projects are custom built for a specific customer specifications and connected AC network. Accordingly, it is mandatory to set up a laboratory environment for checking and verifying control and protection functions and strategies being adapted in the project before actual deployment at sites. Such testing is carried out on a setup comprising of (a) control panels and SCADA built for project, (b) project software and (c) real time simulator for representing the connected AC network and its elements. Extensive tests on various modes, normal/ abnormal conditions, different network configurations, different communication modes etc. were performed in laboratory environment. After this verification at laboratory setup, panels are commissioned at sites and actual energization of terminals takes place. During site commissioning and testing, only a few critical sample tests are carried out especially for demonstration of performance of the transmission scheme.

(vi) For CK-1, this lab testing was conducted on C&P panels in 2015-16 and CK-1 was successfully commissioned in September, 2017. The real challenge for lab testing for CK-2 arose as now OEM was supposed to not only test/ commission new bi-pole controls but most importantly has to integrate these controls with existing bi-pole controls for parallel operation of two poles on each HVDC line with common DMR. This addition of parallel Bi-pole with common line required a lot of modifications in the control and protection strategies of existing Bi-pole and communication. In order to ensure that the delivered control modules meet all the functional requirements, it was mandatory to simulate complete parallel bi-pole scheme in the lab environment. Accordingly, a replica of CK-1 controls had to be built and modified to add this fast-comm feature. This replica of CK-1 was interfaced in laboratory set up with actual controls of CK-2 and tested with new software for two parallel Bi-poles. Compared to a normal Bi-

pole with ground return, for a parallel bi-pole with DMR return, the number of operating modes increased significantly. This resulted in extensive testing of control and protection functions for each mode to verify the desired performance. This essential step resulted in engaging the control hardware for longer duration in lab to allow for parallel operation testing.

(vii) The software of existing Bi-pole-I was with standalone features, i.e., without parallel operation with Bi-pole-II (covered under the subject project). The software needs to be modified for making it compatible for parallel operation. Therefore, the testing platform of Bi-pole-II (with two sets of bi-pole replica) was also utilized for making Bi-pole-I software compatible for parallel operation. Due to this a lot of time has also elapsed for start of parallel operation test of Bi-pole-II.

(viii) Further, due to various bugs/ shortcoming as observed in present Bi-pole-I software during its operation and also as observed during on load commissioning tests, software modifications in Bi-pole-I was required and similar kind of modification also done in software of Bi-pole-II. This involved a lot of time in intermediate finalisation of software and testing/ validation during development stage of Bi-pole-II software.

c) **800 kV Wall Bushing:**

(i) There are only few manufacturers of 800 kV DC equipment due to very few schemes worldwide. One of the four supplied 800 kV wall bushing installed in CK-1 failed 5 times at one location during 2017-18. No concrete failure mechanism could be established as 3 bushings continued to run without problems. In the interest of ongoing CK-2 project, it was felt essential to modify the design of bushing to eliminate fail prone component altogether. Accordingly, OEM was instructed to redesign the bushings already supplied for CK-2 for reliable operation of link. The redesign exercise was undertaken by the manufacturer and first modified bushing cleared type tests in April, 2019. This development, though delayed the commissioning of pole, has ensured reliable operation of Pole-III and subsequently of Pole-IV.

(ii) The above details and chronology, +/- 800 kV, 2 x 3000 MW Parallel Bi-pole HVDC scheme with DMR is the first of its kind in the world. The two 3000 MW Bi-poles were awarded separately with a time gap which led to complexity in integration and coordination between the two Bi-pole schemes. The delays arising out of handing over the land, complex integration issues and forced redesign of wall bushing for reliable operation was beyond the Petitioner's control.

(iii) As the delay was beyond the control of the Petitioner, the Petitioner has prayed to condone the delay in completion of subject assets on merit of the same being out of the control of Petitioner in line with Regulation 22 (2) (a) "uncontrollable factors" of the 2019 Tariff Regulations.

28. MPPMCL has submitted that the Petitioner has stated that the delay is because of various issues like delay in land acquisition, development of software, etc. and there was an administrative delay in processing of case of land acquisition from 13.6.2011 to 3.1.2012, 13.6.2011 to 3.1.2015 which could have been easily curtailed with proper follow-up with the administrative authorities and it seems that no follow-up has been made by the Petitioner in this regard. MPPMCL has further submitted that the land of 12.84 acre has been awarded to the Petitioner on 30.12.2014 but the cheque distribution took abnormally long time of almost four months and was completed on 13.4.2015.

29. MPPMCL has submitted that the Petitioner has also claimed delay on account of complexity of scheme in development of software in parallel operation of Bi-pole and availability of 800 kV Wall Bushings. Petitioner being a CTU, it is expected from them to envisage all such issues/ challenges while framing the scheme and based on same, the time frame to complete the project has been decided by their BoD. The design issue came to the notice of Petitioner while carrying out execution of works. Therefore, it is

clearly a case of improper design. The Petitioner has not submitted any documentary evidence regarding following up the cases with local administration to resolve the RoW issues. The delay in completion is basically due to lethargic approach of the Petitioner since timely and regular follow-up with the District Administration would have resolved the land acquisition issues much earlier.

30. MPPMCL has further submitted that the delay due to land acquisition, development of software and availability of 800 kV Wall Bushings issues are solely attributed on Petitioner's part and therefore prayed that delay on this ground may not be condoned.

31. In response, the Petitioner has submitted that proper follow-up was done with regard to delay on account of land acquisition with administration, however, in spite of best efforts, there was delay in handing over of land due to delay in land acquisition at Champa Sub-station. The Petitioner has further submitted that with regard to the complexity of the transmission scheme, development of software in parallel operation of Bi-pole and 800 kV Wall Bushing, was not envisaged while preparing the timeline and was added afterwards when operational issues were faced in CK-1 (i.e Pole-I and Pole-II).

32. UPPCL has submitted its reply as follows:

a) The Petitioner has not mentioned detailed reasons for delay of 148 days, leaving an unanswered question as to who is responsible for this delay. UPPCL has further raised queries whether the Petitioner directly handed over the cheques to project affected families and the timeline for the cheque/ amount from the Petitioner handed over to the District Administration for onward payments to project affected families. UPPCL has further submitted that the answers to these questions are necessary input for the Commission to decide which portion of

delay is attributable to the Petitioner and which portion is beyond the control of the Petitioner and has requested the Commission to take a view.

b) The Petitioner has given subjective reasons like delay on account of Complexity of scheme in development of software in parallel operation of Bi-pole and as stated by the Petitioner that the existing software cannot be compatible with parallel operations, etc.

c) Development of new software was an eventuality to make parallel operation successful. Moreover, during the conceptualization of the project and subsequently, this issue must have been discussed at the IA stage. Therefore, requirement for development of the new software was well within the knowledge of the Petitioner and any delay for such development is entirely attributable to the Petitioner. The Petitioner has not sought to invoke "Power to Relax" or "Power to Remove Difficulty" clause, considering the fact that this is not a case of *force majeure* event. Moreover, there are no chronological details with regard to this delay. In absence of the same, it is not possible to segregate as to which portion is attributable to Petitioner or otherwise. Even if there is a delay on the part of OEM/ contactor, the Petitioner has not submitted whether any LD has been invoked or not. Such lack of clarity in the justification for delay and the above unanswered questions, the prayer of the Petitioner may be rejected.

d) The technical issues as mentioned above were well within the knowledge of the Petitioner. Therefore, the delay is fully attributable to the Petitioner and delay on this account should not be condoned. In case the Petitioner submits further details on the delay as mentioned above and after prudence check, if it so appears that delay is not attributable to the Petitioner, the Commission may consider the same taking a balanced view of sharing the cost of such delay in the ratio of 50:50 between Petitioner and beneficiaries in line with the APTEL's judgment dated 27.4.2011 in Appeal No. 72 of 2010.

33. In response to UPPCL's contention regarding handing over of cheques, the Petitioner has submitted that an application for supplementary land acquisition was submitted by the Petitioner to the District Administration on 19.10.2013 and estimated amount of ₹11556000 was deposited to District Administration on 20.11.2013.

Accordingly, the process of land acquisition was carried out by the District Administration and the award for the same was made on 30.12.2014. The balance amount of ₹143010 required for disbursement was deposited vide letter dated 20.1.2015 within one month from date of award. Subsequent to the award, the disbursement of the land compensation was to be made in two parts. The first part involved disbursement of compensation to the affected land owners @ ₹10 lakh per acre directly by the District Administration after following the due procedures. After disbursement of compensation by the District Administration, the second part of compensation was to be paid directly by the Petitioner to the land owners. In the instant case, disbursement of first part of compensation to the land owners was made by District Authority on 20.2.2015. As per the terms of the award, the second part of land compensation was made by the Petitioner on 13.4.2015 directly to the land owners. Therefore, the time taken in the process of cheque distribution is considered to be normal and the delay is not attributable to the Petitioner and it was mainly due to time taken in supplementary land acquisition process by the District Administration. The Petitioner has submitted the relevant documents along with the rejoinder.

34. The Petitioner has further submitted that the nature of technical complexity involved with such projects is given in detail in the Petition. As already stated in the petition that there are very few manufacturers of 800 kV DC equipment and with experience of these equipment in Pole-I and Pole-II, some modifications were required in 800 kV Wall Bushings for reliable operation of Pole-III and Pole-IV of the system. These delays were beyond control of the Petitioner and hence, prayed to condone the delay.

35. We have considered the submissions of the Petitioner, MPPMCL and UPPCL. As per IA dated 21.6.2014, the transmission assets covered under the transmission scheme, including Asset-I and Asset-II were scheduled to be put into commercial operation within 45 months. Therefore, SCOD was 21.3.2018 against which Asset-I and Asset-II were put into commercial operation on 5.10.2019 and 30.3.2020 respectively. Hence, there is time over-run of 563 days and 740 days respectively. The Petitioner has attributed the time over-run to delay in handing over of land at Champa Sub-station, complexity of scheme in development of software in parallel operation of Bi-pole and re-design of 800 kV Wall Bushing.

36. The Petitioner has submitted that the delay from 28.11.2014 to 25.4.2015 i.e. 148 days was on account of delay in land acquisition of Champa Sub-station. The handover of leveled and compacted land to the contractor was scheduled to be completed by 28.11.2014 against which the Petitioner had obtained the possession of balance land on 30.12.2014 and working permission by the villagers was allowed after cheque distribution process which was completed by 13.4.2015. Finally, the land was handed over on 25.4.2015. As per the chronology of land acquisition process, as submitted by the Petitioner, 249.43 acres land was required for the construction of Champa Pooling Station/ HVDC terminal station. Out of 249.43 acres of land, 158 acres of land to be acquired from Government and 91.43 acres of land was to be acquired from private people. The Petitioner had obtained possession of 158 acres Government land on 30.9.2011 and possession of 50% private land was obtained on 30.11.2012 to 15.4.2013 and final possession of 91.43 acres of private land was obtained on 30.12.2014. Finally, the land was handed over on 25.4.2015. We are of the view that the delay of 148 days from 28.11.2014 (the date by which handover of leveled and compacted land to the contractor was scheduled to be completed) to 25.4.2015 (the

date on which land was finally handed over) was due to delay in acquisition of land at Champa and the same is beyond the control of the Petitioner. Therefore, the time over-run of 148 days is condoned due to acquisition of land.

37. As regards the submission of the Petitioner that complexity of scheme in development of software in parallel operation of Bi-pole lead to time over-run in case of the transmission assets, it has been observed that software of existing Bi-pole-I was with standalone features, i.e. without the features of parallel operation with Bi-pole-II (covered under the subject project) and was thus, required to be modified for making it compatible for parallel operation. Thus, it was clear to the Petitioner from the beginning that the software was not compatible for parallel operation. Therefore, the issues raised by the Petitioner towards modification of software for Bi-pole-II falls under "controllable factors" as per Regulation 22 (a) of the 2019 tariff Regulations. Accordingly, delay on this ground is not condoned.

38. The Petitioner has submitted that 800 kV Wall Bushing installed in CK-I has failed 5 times in 2017-18, and hence, the Petitioner felt that it was essential to modify the design of Wall Bushing. We observe that the delay due to the redesign of Wall Bushing from OEM does not fall under the uncontrollable factors as defined under the 2019 Tariff Regulation and therefore the delay on this count is not condoned.

39. In view of the above discussions, the time over-run of 148 days out of time over-run of 563 days and 740 days in case of Asset-I and Asset-II respectively is condoned.

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

40. The Petitioner vide Auditor's Certificates has claimed the following IDC in respect of the transmission assets and has submitted the statement showing IDC claim, discharge of IDC liability as on COD and thereafter as follows:

(₹ in lakh)

Assets	IDC as per Auditor Certificate	IDC Discharged Up to COD	IDC discharged during 2019-20
Asset-I	10572.08	9894.24	677.84
Asset-II	8272.92	7904.68	368.24

41. The Petitioner has submitted the following information in respect of Foreign IDC computation as follows:

a) The Petitioner avails loans periodically after pooling the fund requirement of all the transmission projects which are under different stages of construction. Fund requirement for all the on-going transmission projects is anticipated for next two to three months and accordingly funds are raised through Domestic Borrowings (Bonds/CP/Bank Loans) or Borrowing in Foreign Currency-ECB (Through World Bank, Asian Development Bank, etc.).

b) As per policy of the Petitioner's company, out of total loans taken for the pooled requirement of all transmission projects, loans are earmarked, to a particular project/ element based on actual fund outflow for that project/ element. IDC paid on such loan (taken for pooled requirement of transmission projects under construction) is allocated to a particular project/ element in proportion to the loan so earmarked to that project. In addition to IDC, other expenses covered under borrowing cost (i.e., guarantee fee, commitment charges, front end fee etc. in respect of foreign currency loan) are also allocated to individual project/ element in proportion to the loan amount earmarked to a particular project/ element.

c) Foreign currency loans are also contracted for a basket of projects. Loan (Foreign Currency) Agreement speaks for overall limit of the loan amount, name of foreign currency and projects for which lender (WB, ADB etc.) has agreed to fund. These loans are also availed (drawn) by the Petitioner based on actual outflow of funds during a certain period for all the transmission projects under

construction covered in loan agreement. Loans get accumulated with every drawl up to the sanction limit. Such loans as well as debt service (repayment of loan and interest payment thereon) is also done in foreign currency. Repayment of loan and payment of interest must be released to the lender as per schedule of repayment agreed for the loan as a whole consisting of the entire basket of projects.

d) The total foreign currency loan drawn in first stage is allocated to different projects based on actual utilisation of loan for respective projects. Accordingly, interest and other financial charges against a particular loan is allocated to different projects in proportion to loan utilised by respective projects periodically. These interest and financial charges so allocated get accumulated till COD of the project/ element (part of the project). In case of COD of a particular element (part of the project), foreign currency loan drawn for a specific project is apportioned to the individual elements of that project in proportion to the expenses related to that element as compared to total expenses of the project (related to foreign currency loan part).

e) Foreign currency loans are considered, in tariff forms, equivalent to INR value taking exchange rate as on COD. IDC statement shows INR value of interest paid (in foreign currency) taking amount of actual foreign currency paid multiplied by exchange rate prevailing on the day on payment of interest. INR value of un-discharged interest (to be paid subsequently after COD) is shown as actual liability in foreign currency multiplied by exchange rate as on COD.

f) The necessity of availing the loan for pooled-fund requirement of all the on- going project, then earmarking the drawn loan amount to a particular project/ element based on the actual cash outflow for that project/ element, enforces to allocate IDC of the entire loan to those projects/ elements to which loan amount is earmarked. IDC thus allocated to a particular project/ element is shown in the cost certificate.

g) Therefore, providing details showing actual calculation of IDC for a particular project/ element is not practical. However, the Petitioner has submitted the details of foreign loan IDC (interest + other financial charges) allocated to Asset-I and Asset-II and domestic loan IDC covered under the instant petition.

h) The Petitioner has prayed to kindly allow IDC as claimed for all the transmission assets.

42. UPPCL has submitted that the Petitioner has stated the broad outline for deployment of loan capital in various projects of the Petitioner company. However, in order to determine the tariff for the assets in the instant Petition, specific mention of infusion loan capital as per original proposal should have been made with adequate details/ documentary evidences for prudence check. It is seen from the documents furnished by the Petitioner that while for funding of Asset-II only IBRD loan was deployed whereas both domestic (SBI loan) as well as IBRD borrowing were infused in case of Asset-I. No submission has been made by the Petitioner as to why allocation of SBI loan was necessitated which has higher rate of interest and thus, impacted the tariff. In view of the above, requested to not allow such incremental cost of loan capital to be passed through.

43. In response, the Petitioner has submitted that as it can be inferred from IA, the transmission scheme is to be implemented through combination of loans from the world bank, domestic borrowings/ bonds/ external commercial borrowings and the Petitioner's internal resources with debt-equity ratio of 70:30. The loan deployed in a project are drawn from common pool of loans and further allocated to different elements based on periodic expenditure and availability of loans.

44. We have considered the submissions of the Petitioner and UPPCL. The Petitioner has submitted IDC computation statement for domestic as well as foreign currency loans which contains the name of loan, drawl date, loan amount, interest rate, exchange rate and interest claimed. IDC is worked out based on the details given in the IDC statement. Further, the loan amount as on COD has been mentioned in Forms-6

and Form-9C. The Petitioner has further submitted that mismatch between Form-9C and statement of cash IDC is due to deduction of loan from COD in Form-9C on account of un-discharged IDC and is considered as ACE expense rather than capital cost as on COD and the shifting of loan from COD to ACE for accrual IDC is to maintain debt-equity ratio of 70:30. The allowable IDC has been worked out based on the information available on record and the loan amount as per Form-9C. The IDC claimed and considered as on COD and summary of discharge of IDC liability up to COD and thereafter for the purpose of tariff determination subject to revision at the time of truing up is as follows:

(₹ in lakh)

Assets	IDC as per Auditor Certificate	IDC Disallowed due to time over-run not condoned	IDC Allowed	IDC Discharged up to COD
Asset-I	10572.08	5926.97	4645.12	4645.12
Asset-II	8272.92	5043.14	3229.78	3229.78

45. The Petitioner has claimed IEDC in respect of the transmission assets as per the Auditor's Certificate. The Petitioner has submitted that the entire IEDC mentioned in the Auditor Certificate is on cash basis and was paid up to COD. As the time over-run in respect of Asset-I and Asset-II has not been condoned, there is dis-allowance of IEDC. IEDC claimed as per Auditor's Certificate, IEDC considered and discharged up to COD is as follows:

(₹ in lakh)

Assets	IEDC claimed as per Auditor certificate (A)	IEDC disallowed due to time over-run not condoned (B)	IEDC Allowed (A-B)
Asset-I	3267.26	701.82	2565.44
Asset-II	2527.19	709.39	1817.80

Initial Spares

46. Regulation 23(d) of the 2019 Tariff Regulations provides that Initial Spares shall be capitalised as a percentage of plant and machinery cost up to 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%*
- *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%"

47. Initial Spares claimed by the Petitioner are as follows:

(₹ in lakh)

Particulars	Plant and machinery cost as on cut-off Date	Initial Spares Capitalised as per Books of Account up to cut-off date	Norm as per Regulation	Allowable Initial Spare as per Regulations	Excess Initial Spares
	A	B	C	D=[(A-B)*C/(100-C)]	E=(B-D)
Asset-I					
HVDC Station	216467.09	5200.84	4.00	8802.76	NIL
Asset-II					
HVDC Station	139106.61	4500.00	4.00	5608.61	NIL

48. The Petitioner has submitted the discharge statement for Initial Spares (Form-13). The Initial Spares discharge is as follows:

Particulars	Initial Spares Claimed	Initial Spares Discharge				
		As on COD	2019-20	2020-21	2021-22	2022-23
Asset-I						
HVDC Station	5200.84	2874.67	814.00	591.00	756.00	165.17
Asset-II						
HVDC Station	4500.00	0.00	2873.79	767.76	858.45	0.00

49. MPPMCL has submitted that the Petitioner has mentioned that the spares are within limit as per the 2019 Tariff Regulations whereas the details of the same have not been given and in absence of same it is not possible to make any comment. MPPMCL has submitted that the Petitioner should provide all data related to Initial Spares to the Commission and the Respondents and to restrict spares limit as mentioned in the regulation, after computation by applying prudence check, of admissible completion cost. In response, the Petitioner has submitted that as per Form-13 submitted along with the petition, Initial Spares are within specified limit.

50. We have considered the submissions of Petitioner and MPPMCL. The Initial Spares are allowed on the basis of the individual capital cost of the transmission assets in 2019-24 tariff period. Initial Spares allowed in respect of the transmission assets are as follows:

Particulars	Plant and Machinery cost (excluding IDC/IEDC, Land cost & Cost of Civil Works) (₹ in lakh)	Initial Spares claimed (₹ in lakh)	Norms as per 2019 Tariff Regulations (%)	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=(B-D)	
Asset-I						
HVDC Station	216467.09	5200.84	4.00	8802.76	NIL	5200.84
Asset-II						
HVDC Station	139106.61	4500.00	4.00	5608.61	NIL	4500.00

51. The capital cost allowed as on COD is as follows:

(₹ in lakh)

Assets	Capital Cost claimed as on COD (Auditor Certificate) (A)	IDC Disallowed (B)	IEDC Disallowed (C)	Capital Cost considered as on COD (D)=(A-B-C)
Asset-I	200774.05	5926.97	701.82	194145.26
Asset-II	139580.02	5043.14	709.39	133827.49

Additional Capital Expenditure ("ACE")

52. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide 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 23of 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;*
> *(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."

53. The Petitioner has submitted that ACE incurred/ projected to be incurred in respect of the transmission assets is mainly on account of Balance and Retention Payments and is claimed under Regulation 24(1)(a) and Regulation 24(1)(b) of the 2019 Tariff Regulations. The Petitioner has claimed the following ACE:

(₹ in lakh)

Assets	**Projected ACE 2019-24**			
	2019-20 (Including Un-discharged IDC)	**2020-21 (Including Un-discharged IDC)**	**2021-22**	**2022-23**
Asset-I	7113.70	16783.95	11179.91	8599.93
Asset-II	0.00	6676.00	5748.41	2874.21

54. MPPMCL has submitted that the Petitioner has claimed ACE with the reasoning of the civil works and sub-stations, without providing proper details and justification and has submitted Form-7 with the petition. The claims of the Petitioner may only be allowed in true-up as per actuals after prudence check.

55. In response, the Petitioner has submitted that ACE claimed is within cut-off date and within the original scope of work and is claimed as per Regulation 24(1)(a) and 24(1)(b) of the 2019 Tariff Regulations and liability flow statement package-wise and vendor-wise breakup has been submitted vide affidavit dated 20.10.2021.

56. We have considered the submissions of the Petitioner and MPPMCL. ACE during 2019-24 tariff period in respect of the transmission assets allowed under Regulation 24(1)(a) and 21(1)(b) of the 2019 Tariff Regulations is as follows:

(₹ in lakh)

Assets	ACE 2019-24			
	2019-20	2020-21	2021-22	2022-23
Asset-I	6435.86	16783.95	11179.91	8599.93
Asset-II	0.00	6307.76	5748.41	2874.21

57. The capital cost considered in respect of the transmission assets for 2019-24 tariff period is as follows:

(₹ in lakh)

Assets	Capital Cost as on 31.3.2019/COD	ACE 2019-24				Capital Cost as on 31.3.2024
		2019-20	2020-21	2021-22	2022-23	
Asset-I	194145.26	6435.86	16783.95	11179.91	8599.93	237144.91
Asset-II	133827.49	0.00	6307.76	5748.41	2874.21	148757.87

Debt-Equity ratio

58. 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."

59. Debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period in respect of the transmission assets is as follows:

Asset-I

Particulars	Capital Cost as on COD (₹ in lakh)	(%)	Capital Cost as on 31.3.2024 (₹ in lakh)	(%)
Debt	135901.68	70.00	166001.44	70.00
Equity	58243.58	30.00	71143.47	30.00
Total	**194145.26**	**100.00**	**237144.91**	**100.00**

Asset-II

Particulars	Capital Cost as on COD (₹ in lakh)	(%)	Capital Cost as on 31.3.2024 (₹ in lakh)	(%)
Debt	93679.25	70.00	104130.51	70.00
Equity	40148.25	30.00	44627.36	30.00
Total	**133827.49**	**100.00**	**148757.87**	**100.00**

Depreciation

60. 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."

61. The weighted average rate of depreciation (WAROD) at Annexure-I for Asset-I and Annexure-II for Asset-II has been worked as per the rates of depreciation 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 assets is as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Opening Gross Block (A)	194145.26	200581.12	217365.07	228544.98	237144.91
Projected ACE (B)	6435.86	16783.95	11179.91	8599.93	0.00
Closing Gross Block (C) = (A+B)	200581.12	217365.07	228544.98	237144.91	237144.91
Average Gross Block (D) = [(A+C)/2]	197363.19	208973.09	222955.02	232844.94	237144.91
Weighted Average Rate of Depreciation (WAROD) (in %)	5.19	5.19	5.18	5.18	5.18
Balance useful life at the beginning of the year (Year)	25	25	24	23	22
Lapsed Life of the asset (Year)	0	0	1	2	3
Depreciable Value	177626.87	188075.79	200659.52	209560.45	213430.42
Depreciation during the year	**5009.76**	**10838.49**	**11555.10**	**12062.00**	**12282.40**
Cumulative Depreciation at the end of the year	5009.76	15848.26	27403.35	39465.35	51747.75
Remaining Depreciable Value at the end of the year	172617.11	172227.53	173256.17	170095.10	161682.67

Asset-II

(₹ in lakh)

Particular	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Opening Gross Block (A)	133827.49	133827.49	140135.25	145883.66	148757.87
Projected ACE (B)	0.00	6307.76	5748.41	2874.21	0.00
Closing Gross Block (C) = (A+B)	133827.49	140135.25	145883.66	148757.87	148757.87
Average Gross Block (D) = [(A+C)/2]	133827.49	136981.37	143009.46	147320.77	148757.87
Weighted Average Rate of Depreciation (WAROD) (in %)	5.22	5.22	5.22	5.22	5.22
Balance useful life at the beginning of the year (Year)	25	25	24	23	22
Lapsed Life of the asset (Year)	0	0	1	2	3
Depreciable Value	120444.74	123283.24	128708.51	132588.69	133882.09

Depreciation during the year	**38.19**	**7153.91**	**7468.24**	**7693.35**	**7768.39**
Cumulative Depreciation at the end of the year	38.19	7192.10	14660.34	22353.69	30122.08
Remaining Depreciable Value at the end of the year	120406.55	116091.13	114048.17	110235.00	103760.01

Interest on Loan ("IoL")

62. 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."*

63. 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, shall be considered at the time of true up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed is as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	135901.68	140406.78	152155.55	159981.49	166001.44
Cumulative Repayments up to Previous Year	0.00	5009.76	15848.26	27403.35	39465.35
Net Loan-Opening	135901.68	135397.02	136307.29	132578.13	126536.08
Additions	4505.10	11748.77	7825.94	6019.95	0.00
Repayment during the year	5009.76	10838.49	11555.10	12062.00	12282.40
Net Loan-Closing	135397.02	136307.29	132578.13	126536.08	114253.69
Average Loan	135649.35	135852.16	134442.71	129557.11	120394.88
Weighted Average Rate of Interest on Loan (in %)	3.7857	3.8704	3.8841	3.8922	3.9003
Interest on Loan	**2511.49**	**5258.02**	**5221.95**	**5042.58**	**4695.79**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	93679.25	93679.25	98094.68	102118.56	104130.51
Cumulative Repayments up to Previous Year	0.00	38.19	7192.10	14660.34	22353.69
Net Loan-Opening	93679.25	93641.05	90902.57	87458.23	81776.82
Additions	0.00	4415.43	4023.89	2011.95	0.00
Repayment during the year	38.19	7153.91	7468.24	7693.35	7768.39
Net Loan-Closing	93641.05	90902.57	87458.23	81776.82	74008.43
Average Loan	93660.15	92271.81	89180.40	84617.52	77892.63
Weighted Average Rate of Interest on Loan (in %)	3.3500	3.3500	3.3500	3.3500	3.3500
Interest on Loan	**17.15**	**3091.11**	**2987.54**	**2834.69**	**2609.40**

Return on Equity ("RoE")

64. 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 cutoff 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:

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

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

Illustration-

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

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

(ii) In case of a generating company or 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."

65. The Petitioner has submitted that MAT rate is applicable to it. Accordingly, MAT rate applicable in 2019-20 has been considered for the purpose of RoE, which shall 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 assets is as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity (A)	58243.58	60174.34	65209.52	68563.49	71143.47
Additions (B)	1930.76	5035.19	3353.97	2579.98	0.00
Closing Equity (C) = (A+B)	60174.34	65209.52	68563.49	71143.47	71143.47
Average Equity (D) = [(A+C)/2]	59208.96	62691.93	66886.51	69853.48	71143.47
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
Return on Equity	**5438.78**	**11774.80**	**12562.62**	**13119.88**	**13362.17**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity (A)	40148.25	40148.25	42040.58	43765.10	44627.36
Additions (B)	0.00	1892.33	1724.52	862.26	0.00
Closing Equity (C) = (A+B)	40148.25	42040.58	43765.10	44627.36	44627.36
Average Equity (D) = [(A+C)/2]	40148.25	41094.41	42902.84	44196.23	44627.36
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
Return on Equity	**41.21**	**7718.35**	**8058.01**	**8300.94**	**8381.91**

Operation & Maintenance Expenses ("O&M Expenses")

66. O&M Expenses claimed by the Petitioner in respect of the transmission assets for 2019-24 period are as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
1 Number HVDC Terminal: Pole-III Champa-Kurukshetra	626.74	1326.50	1373.00	1421.00	1471.00
OPGW (2% of ₹ 1573.52 lakh)	15.39	31.47	31.47	31.47	31.47
Total O&M Expenses	**642.13**	**1357.97**	**1404.47**	**1452.47**	**1502.47**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
1 Number HVDC Terminal: Pole-IV Champa-Kurushetra	7.00	1326.50	1373.00	1421.00	1471.00
Total O&M Expenses	**7.00**	**1326.50**	**1373.00**	**1421.00**	**1471.00**

67. Regulation 35(3) 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 (Rs 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 (Rs 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 (Rs 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 (Rs. 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 (2500 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 truing up."*

68. We have considered the submissions of the Petitioner. The Petitioner has claimed O&M Expenses separately for OPGW under Asset-I @ 2% of ₹1573.52 lakh. Usually, OPGW are laid on transmission lines. In the instant case, as stated above the Petitioner has claimed O&M Expenses for OPGW under Asset-I, which is extension/upgradation of the existing ±800 kV Champa & Kurukshetra HVDC stations and it is not a transmission line. Therefore, the Petitioner's claim is not in order and misconceived. Accordingly, the Petitioner's claim for O&M Expenses for OPGW under Asset-I is not allowed.

69. The O&M Expenses are worked out for various elements in respect of the transmission assets as per the norms specified in the 2019 Tariff Regulations and the same are as follows:

Asset-I

(₹ in lakh)

	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses					
1 Number HVDC Terminal: Pole-III Champa-Kurukshetra					
Norms (₹ lakh/3000 MW)	2563.00	2653.00	2746.00	2842.00	2942.00
Total O&M Expenses allowed (₹ in lakh)	**626.74**	**1326.50**	**1373.00**	**1421.00**	**1471.00**

Asset-II

(₹ in lakh)

	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses					
1 Number HVDC Terminal: Pole-IV Champa-Kurukshetra					
Norms (₹ lakh/km)	2563.00	2653.00	2746.00	2842.00	2942.00
Total O&M Expenses allowed (₹ in lakh)	**7.00**	**1326.50**	**1373.00**	**1421.00**	**1471.00**

Interest on Working Capital ("IWC")

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

> ***"34. Interest on Working Capital:*** *(1) The working capital shall cover:*
>
> *…….*
>
> ***"(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:***
> *(i) Receivables equivalent to 45 days of annual fixed cost;*
> *(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*
> *(iii) Operation and maintenance expenses, including security expenses for one month."*
>
> *"(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:-*

*'**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;"*

71. 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% in respect of the transmission assets. 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, RoI for 2020-21 has been considered as 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) whereas, RoI for 2021-22 onwards has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon are as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	106.79	110.54	114.42	118.42	122.58
Working Capital for Maintenance Spares (15% of O&M Expenses)	192.23	198.98	205.95	213.15	220.65
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	3471.53	3654.71	3840.36	3957.01	3966.87
Total Working Capital	3770.55	3964.23	4160.72	4288.58	4310.11
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	**222.21**	**445.98**	**436.88**	**450.30**	**452.56**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	106.79	110.54	114.42	118.42	122.58
Working Capital for Maintenance Spares (15% of O&M Expenses)	192.23	198.98	205.95	213.15	220.65
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	2369.38	2416.01	2488.15	2533.66	2524.40
Total Working Capital	**2668.40**	**2725.52**	**2808.52**	**2865.23**	**2867.64**
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	**1.76**	**306.62**	**294.89**	**300.85**	**301.10**

Annual Fixed Charges (AFC) for 2019-24 Tariff Period

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

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	5009.76	10838.49	11555.10	12062.00	12282.40
Interest on Loan	2511.49	5258.02	5221.95	5042.58	4695.79
Return on Equity	5438.78	11774.80	12562.62	13119.88	13362.17
O&M Expenses	626.74	1326.50	1373.00	1421.00	1471.00
Interest on Working Capital	222.21	445.98	436.88	450.30	452.56
Total	**13808.99**	**29643.79**	**31149.55**	**32095.76**	**32263.91**

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	38.19	7153.91	7468.24	7693.35	7768.39
Interest on Loan	17.15	3091.11	2987.54	2834.69	2609.40
Return on Equity	41.21	7718.35	8058.01	8300.94	8381.91
O&M Expenses	7.00	1326.50	1373.00	1421.00	1471.00
Interest on Working Capital	1.76	306.62	294.89	300.85	301.10
Total	**105.31**	**19596.49**	**20181.68**	**20550.82**	**20531.81**

Filing Fee and Publication Expenses

73. 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 & RLDC Fees and Charges

74. 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

75. 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

76. MPPMCL has submitted that the Petitioner has claimed the implementation of GST and that GST is not applicable on electricity sector so the demand of GST shall be disallowed. In response, the Petitioner has submitted that under CGST Act, 2017 implemented w.e.f. 1.7.2017, the Government of India has exempted the charges of transmission of electricity vide Notification No. 12/2017 – Central Tax (Rate) dated 28.6.2017 at serial no. 25 under the heading 9969 "Transmission or distribution of electricity by an electric transmission or distribution utility" by giving applicable GST rate as NIL. Hence, the transmission charges as claimed by the Petitioner are exclusive of GST. Further, 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.

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

Security Expenses

78. 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.

79. UPPCL has submitted that the Petitioner has mentioned that as per Regulation 35(3)(c) of 2019 Tariff Regulations, security expenses and capital spares for transmission system shall be allowed separately after prudence check. UPPCL has

further submitted that a separate petition for the same will be filed by the Petitioner and therefore, in absence of the above, the Commission may not allow any ad-hoc expenditure on account of security expenses by escalating the actuals of FY 2018-19 by 3.5% p.a., which will be against the stipulation of the Regulation 35(3)(c) of 2019 Tariff Regulation and outside the ambit of the instant petition as well.

80. We have considered the above submissions of Petitioner and UPPCL. The Petitioner has claimed consolidated security expenses in respect of all the transmission assets owned by it 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 of by the Commission vide order dated 3.8.2021. 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

81. 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

82. The Petitioner has prayed that the transmission charges for 2019-24 period may be allowed to be recovered on monthly basis in accordance with Regulation 57 of the 2019 Tariff Regulations and may be shared by the Respondents in accordance with the 2010 Sharing Regulations.

83. We have considered the submissions of the petitioner. We observe that The connectivity/Long Term Access was granted to the generators in the meeting held on 2.1.2013. The relevant extracts of the Minutes are extracted hereunder:

> **"22. Sarda Energy and Minerals (350 MW)**
> *M/s Sarda Energy and Minerals had applied for LTA for 170 MW for 25 years, NR-85 MW and WR-85 MW, from its generation project (350 MW) in Chaattisgarh in WR from Janaury'14 for 25 years as given in agenda. Members discussed and agreed for following Transmisison system for transfer of power from above project:*
> ***(i) Dedicated transmission system (to be built, owned, operated and maintained by the applicant)***
> ** SEML TPS_Raigarh Pooling Station (near Tamnar) 400 kV D/C line*
> ***(ii) Transmision System Strengthening in ER-NR transmission corridor***
> *1. Upgradation of +_ 800 kV, 3000 MW HVDC bipole terminal capacity between Champa Pooling Station-Kurukshetra (NR) to 6000 MW*
> *2. Kurukshetra(NR)-Jind 400 kv D/C (quad)*
> *3. Kurukshetra-Malerkotla-Amritsar 400 kV D/C line*
> *4. 1X1500 MVA (4th), 765/400 kV transformer at Raigarh Pooling Station (near Tamnar) (to b shared with M/s Jayswal Neco Urja Ltd)*
> *Members agreed for the grant of LTA through above system subject to signing of required agreements by applicant and Meeting all conditions in Annexure-A as applicable. Further sharing of the transmission charges would be as per CERC Regulations.*
>
> **23. Jayaswal Neco Urja Ltd (2x300MW)**
> *POWERGRID explained that M/s Jayaswal Neco Urja Ltd (NUL) (erstwhile Raigarh Energy Ltd) had applied for LTA of 600MW (WR-390 MW, NR-210 MW) from its proposed generation project 60O MW (2x300MW) in Chhattisgarh. LTA of 300 MW is from July 2014 to July 34 and additional 300 MW from October 2014 to July 2034. Subsequently on the request of M/s Jayaswal Neco vide their letter dated 4.10.12, LTOA quantum was reduced to 549 MW considering the Auxiliary power consumption of2x300MW plant 8.5% (51 MW). Thus the LTA is proposed for 549 MW.*
> M/s JNUL Ltd connectivity for the above project (600 MW) is as under:
> JNUL TPS — *Raigarh Pooling Station (near Tamnar) 400kV D/c line — to be implemented by the applicant*
> *Long-term access (LTA) to M/s JNUL for transfer of 549 MW power from their 600 MW generation project in Chhattisgarh to target regions [WR/NR] is proposed through following system strengthening:*
> ***Transmission system strengthening in WR-NR tr. Corridor***
> *Upgradation of +- 800kV, 3000MW HVDC bipole between Champa Pooling Station — Kurukshehtra(NR) to 600 MW*
> *Kurukshetra (NR)—Jind 400kV D/c(Quad)*
> *Kurukshetra — Malerkotla — Amritsar 400 kV D/c*
> *1x1500 MVA (4th), 765/400 kV transformer at Raigarh Pooling Station (near Tamnar)(to be shared with M/s Sarda Energy) Members agreed for the grant of LTA through above system subject to signing of required agreements by applicant and Meeting all conditions in Annexure-A as applicable. Further sharing of the transmission charges would be as per CERC regulations.*
> *Members agreed for the grant of LTA subject to signing of required agreements by — applicant and Meeting all conditions in Annexure-A as applicable. Further sharing of the transmission charges would be as per CERC regulations.*

Member agreed for the grant of LTA subject to signing of required agreements by the applicant and meeting all conditions in Annexure A as applicable.

26. Karnataka Power Corporation Ltd. (KPCL)

M/s Karnataka Power Corporation Ltd. has applied for grant of "Long Term Open Access" for transfer of power from their proposed generation project {2x800 MW in Distt Jangir-Champa, , Chhaitisgarh to Karnataka [1040 MW] as per CERC regulations, 2004. Long Term Open access to M/s Karnataka Power Corporation Ltd for grant of 1040MW power [Karnataka-1040MW] from their 2x800 MW Karnataka TPS in Chhattisgarh, as per CERC regulations (Open Access in ISTS) regulations, 2004 may be granted.. Balance 560MW shall be transferred to CSPTCL (WR-336 MW/NR-224 MW). It was discussed and agreed that LTOA can be granted through following dedicated/ Common transmission strengthening scheme of KPCL TPS in Chhattisgarh:

Dedicated transmission system (to be built, owned, operated and maintained by the applicant)

KPCL TPS — Champa Pooling Station 400kV D/c line (Quad)

Transmission system strengthening

Upgradation of +800kV, 3000MW HVDC bipole between Champa Pooling Station Kurukshehtra(NR) to 6000MW

Kurukshetra(NR)—Jind 400kV D/c(Quad)

Kurukshetra — Malerkotla — Amritsar 400 kV D/c

Augmentation of 765/400kV transformation capacity by 2x1500 MVA at Champa pooling station

Members agreed for the grant of LTA subject to signing of required agreements by applicant and Meeting all conditions in Annexure-A as applicable. Further sharing of the transmission charges for above system would be as per CERC regulations.

29. NTPC Ltd. Lara STPP- 1, Chhattisgarh

POWERGRID explained that M/s. NTPC Ltd has applied for connectivity and Long Term Access (LTA) for 1586.51 Mw to WR constituents from its 1600 MW generation project in Distt. Lara, Raigarh, Chhattisgarh in accordance with CERC regulations, 2009. Lara TPS has been granted connectivity to Raigarh (Korba) pooling station through a 400 KV D/C line.

Following system for LTA to Lara project of M/s NTPC Ltd was agreed

1. ***Tr. System for Connectivity***

Lara-| TPS — Champa Pooling station 400kV D/c (Quad) (Transmission line to be implemented through Tariff based Competitive bidding and associated bays to be implemented by POWERGRID/NTPC at their respective stations)

II. Proposal for LTA

Transmission system strengthening in WR -NR Tr. Corridor

Up-gradation of +800kV, 3000MW HVDC bipole between Champa Poolingstation — Kurukshetra (NR) to 6000MW

Kurukshetra (NR)-Jind 400 kV D/C (Quard)

Power to WR constituents shall be on displacement basis.

Members agreed to Grant connectivity and Long term Access for transfer of 1586.51MW power from Lara generation of M/s NTPC Ltd subject to following:

Beneficiaries/Applicant shall sign required agreement, with POWERGRID for sharing of transmission charges corresponding to 1586.51 MW.

The identified transmission system strengthening shall be taken up for implementation after signing of required agreement. LTA shall be effective from the date of availability of above transmission strengthening or date of grant whichever is later.

Meeting all conditions in Annexure-A as applicable:"

84. The Commission vide a combined order dated 31.7.2019 in Review Petition No. 20/RP/2018 in Petition No.13/TT/2017 and Review Petition No.3/RP/2019 in Petition No. 205/TT/2017, considering all the facts, held as under:

> *"52. It is apparent from the above observations that the instant transmission assets were envisaged and created in order to evacuate and transfer of power from the IPP generation projects in the WR to the Northern Region on the basis of the LTA with firm PPA and the target LTA to NR. Therefore, this Commission in order dated 11.4.2017 while granting AFC under Regulation 7(7) of the 2014 Tariff Regulations, had observed that since the transmission assets were to be utilized against the LTA having firm PPA (1825 MW) and target region (to NR) (2124 MW), the transmission charges shall be shared as provided under the Regulation 11(4)(3)(i) of the 2010 Sharing Regulations.*
>
> *53. Further, the observation of the Commission in the impugned orders holding that the instant transmission assets have been created for 13 generation project is also not appropriate as LTAs of these generating stations, which were the original grantee of LTAs on HCPTC-V for transfer of power from WR to NR, have been operationalized prior to COD of Champa-Kurukshetra Pole 1 and upon commissioning of Champa-Kurukshetra Pole-I, some of the generating companies such as TRN Energy, MB Power and Maruti Power who were originally granted LTA subject to commissioning of Jabalpur-Orai transmission line were upgraded to Champa-Kurukshetra Pole-1. This is also evident from interim order dated 28.10.2016 in Petition No. 84/MP/2016 and the ROP dated 14.2.2017 in Petition No. 84/MP/2016, wherein the Commission has allowed the operationalization of LTA of such generators on account of capacity arising out of the relinquishment by the other generators.*
>
> *54. In light of the above observations, we find that there is an error in the impugned orders which hold that the instant transmission assets are created only for 13 nos. of generation projects, as the instant transmissions assets are clearly envisaged for the bulk power transfer from the WR to NR in addition to the parallel existing network, which not only increases ATC between the region but also contributes to reliability of power supply to the NR beneficiaries. Further, the Commission in the impugned orders has also held that the sharing of transmission charges for the instant assets would be as per Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations. This finding of the Commission was also on the basis that the instant transmission system has been developed for 13 generation projects and that the Annxure-4 of the LTA agreement and Minutes of 15th TCC and 16th NRPC meeting recognized the liability of payment of transmission charges on the generating company and/or beneficiary.*
>
> *55. Admittedly, the clauses of the Agreement as well as the observations during the meeting that the generators/beneficiaries are liable to pay the transmission charges were prior to coming into effect of the 2010 Sharing Regulations. After the coming into effect of the 2010 Sharing Regulations, the provisions of the Regulations are necessarily to be applied in the present case and having come to the conclusion that the instant transmission assets are created to supply the power to Northern Region, the methodology specified for sharing of transmission charges in the orders dated 22.2.2018 and 6.11.2018 would also require modification as the applicable methodology for sharing of transmission charges would now be as per Regulation 11(4)(3)(i) of the 2010 Sharing Regulations and it would come into effect from the date of commercial operation of the instant assets."*

85. Regulation 11(4) of the 2010 Sharing Regulations provides as under:

"(4) The first part of the bill shall recover charges for use of the transmission assets of the ISTS Licensees based on the Point of Connection methodology. This part of the bill shall be computed in three sub-parts as under:

3. HVDC charge

(i) 10% of Monthly Transmission Charges (MTC) of HVDC transmission system shall form part of Reliability Support Charges and the balance shall be billed as detailed below:

Transmission Charges for HVDC system created to supply power to specific regions shall be borne by DICs of such regions.

The HVDC Charge shall be payable by DICs of the Region in proportion to their Approved Withdrawal. In case of Injection DICs having Long Term Access to target region, it shall also be payable in proportion to their Approved Injection.

For Generators having LTA to target region:

[HVDC Charge for Region in Rs/month} x [Approved Injection} / [Total Approved Withdrawal of the Withdrawal DIC and Approved Injection of the Generator having LTA to target Region].

For Demand:
[HVDC Charge for Region in Rs/month]x[Approved Withdrawal]/[Total Approved Withdrawal of the Withdrawal DIC and Approved injection of the Generator having LTA to target Region]"

86. As decided in the case of Pole-I and Pole-II of Champa-Kurukshetra HVDC Bi-pole, the transmission charges of Pole-III and Pole-IV of Champa-Kurukshetra HVDC Bi-pole shall also be shared as per Regulation 11(4)(3)(i) of the 2010 Sharing Regulations up to 30.10.2020 and it would come into effect from the date of commercial operation of the instant assets.

87. 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. The Regulation 5 and Regulation 6 of the 2020 Sharing Regulations provides as follows:

"5. Components and sharing of National Components (NC)
(1) National Component shall be sum of the following components:
(a) ---------- and
(b) National Component-HVDC (NC-HVDC).
(2)----------.

(3) National Component-HVDC shall comprise of the following:

(a) 100% of Yearly Transmission Charges for "back-to-back HVDC" transmission system;

(b) 100% of Yearly Transmission Charges for Biswanath-Chariali/ Alipurdwar to Agra HVDC transmission system;

(c) Yearly Transmission Charges of Mundra–Mohindergarh 2500 MW HVDC transmission system corresponding to 1005 MW capacity Provided that Yearly Transmission Charges corresponding to 1495 MW for the said transmission system shall be borne by M/s Adani Power (Mundra) Limited or its successor company; and

(d) 30% of Yearly Transmission Charges for all other HVDC transmission systems except those covered under sub-clauses (a), (b) and (c) of this clause of this Regulation.

(4) The Yearly Transmission Charges for the National Component shall be shared by all drawee DICs and injecting DICs with untied LTA in proportion to their quantum of Long-Term Access plus Medium-Term Open Access and untied LTA respectively."

"6. Components and sharing of Regional Component (RC)

(1) Regional Component shall be sum of the following components:

(a) Regional Component of HVDC (RC-HVDC) comprising of 70% of Yearly Transmission Charges of HVDC transmission systems planned to supply power to the concerned region, except HVDC transmission systems covered under sub clauses (a),(b) and (c) of Clause (3) of Regulation 5; and

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(3) Yearly Transmission Charges covered under sub-clause (b) of Clause (1) of this Regulation shall be shared by drawee DICs of the region and injecting DICs (with untied LTA) of the same region, in proportion to their quantum of Long-Term Access plus Medium Term Open Access and untied LTA, respectively."

88. In view of the above, as per Regulation 5(3)(d) of the 2020 sharing Regulations, 30% of the Yearly Transmission Charges (YTC) with effect from 1.11.2020 shall be part of national component.

89. Further as per Regulation 6(1)(a) of the 2020 sharing Regulations 70% of Yearly Transmission Charges of HVDC transmission system with effect from 1.11.2020 shall be part of Regional component.

90. To summarise, AFC allowed in respect of the transmission assets for 2019-24 tariff period in this order are as follows:

Asset-I

(₹ in lakh)

Particulars	2019-20 (Pro-rata 179 days)	2020-21	2021-22	2022-23	2023-24
AFC	13808.99	29643.79	31149.55	32095.76	32263.91

Asset-II

(₹ in lakh)

Particulars	2019-20 (Pro-rata 2 days)	2020-21	2021-22	2022-23	2023-24
AFC	105.31	19596.49	20181.68	20550.82	20531.81

91. Annexure-I and Annexure-II given hereinafter shall form part of the order.

92. This order disposes of Petition No. 690/TT/2020 in terms of the above findings and discussions.

sd/-	**sd/-**	**sd/-**	**sd/-**
(P. K. Singh)	**(Arun Goyal)**	**(I. S. Jha)**	**(P. K. Pujari)**
Member	**Member**	**Member**	**Chairperson**

ANNEXURE-I

2019-24	Admitted Capital Cost as on 1.4.2019/ COD (₹ 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)				
Capital Expenditure		2019-20	2020-21	2021-22	2022-23	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Building Civil Works & Colony	9586.00	508.70	1410.44	924.03	710.79	3553.96	13139.96	3.34%	328.67	360.72	399.70	427.00	680.56
Sub Station	183268.21	5927.16	15244.78	10193.90	7841.46	39207.30	222475.51	5.28%	9833.04	10391.98	11063.56	11539.69	11522.63
PLCC	1291.05	-	128.73	61.98	47.68	238.39	1529.44	6.33%	81.72	85.80	91.83	95.30	79.21
Total	**194145.26**	**6435.86**	**16783.95**	**11179.91**	**8599.93**	**42999.65**	**237144.91**		**10243.43**	**10838.49**	**11555.10**	**12062.00**	**12282.40**
							Average Gross Block (₹ in lakh)		**197363.19**	**208973.09**	**222955.02**	**232844.94**	**237144.91**
							Weighted Average Rate of Depreciation		**5.19%**	**5.19%**	**5.18%**	**5.18%**	**5.18%**

ANNEXURE-II

2019-24	Admitted Capital Cost as on 1.4.2019/ COD (₹ 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)				
Capital Expenditure		2020-21	2021-22	2022-23	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Building Civil Works & Colony	3939.87	234.52	173.29	86.65	494.46	4434.33	3.34%	131.59	135.51	142.32	146.66	231.57
Sub Station	129887.63	6073.24	5575.12	2787.56	14435.92	144323.55	5.28%	6858.07	7018.40	7325.92	7546.69	7536.82
Total	**133827.49**	**6307.76**	**5748.41**	**2874.21**	**14930.38**	**148757.87**		**6989.66**	**7153.91**	**7468.24**	**7693.35**	**7768.39**
						Average Gross Block (₹ in lakh)		**133827.49**	**136981.37**	**143009.46**	**147320.77**	**148757.87**
						Weighted Average Rate of Depreciation		**5.22%**	**5.22%**	**5.22%**	**5.22%**	**5.22%**