

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 121/TT/2020

Coram:

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

Date of Order: 26.03.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and truing up of transmission tariff of 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for 400 kV S/C Singrauli-Vindhyachal Transmission Line along with (2x250 MW) HVDC Back to Back at Vindhyachal between NR and WR.

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.
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.
6. Punjab State Electricity Board,
The Mall,
Patiala-147001.
7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula -134109 (Haryana).
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.
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 Lane, 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.



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-482 008.
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,
3rd Floor, Hongkong Bank Building, 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. Electricity Department,
Government of Goa,
Vidyut Bhawan, Panaji, Near Mandvi Hotel,
Goa-403001.
25. Electricity Department,
Administration of Daman and Diu,
Daman-396210.
26. DNH Power Distribution Corporation Limited,
Vidyut Bhawan, 66 kV Road, Near Secretariat Amla,
Silvassa-396230.
27. Chhattisgarh State Power Transmission Company Limited,
State Load Despatch Building, Dangania,
Raipur-492013.
28. Chhattisgarh State Power Distribution Company Limited,
P. O. Sunder Nagar, Dangania, Raipur,
Chhattisgarh-492013.

.....Respondent(s)



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

For Respondent : Shri Anindya Khare, MPPMCL

ORDER

The Petitioner, Power Grid Corporation of India Limited, has filed the instant petition for truing-up of transmission tariff of 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) and for determination of transmission tariff for 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of 400 kV S/C Singrauli-Vindhyachal Transmission Line along with (2x250 MW) HVDC Back to Back at Vindhyachal between NR and WR (hereinafter referred to as “the transmission asset”).

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

- “1) Approve the trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition, as per para 7 and 8 above.
- 2) Allow add-cap claimed during 2014-19 & 2019-24 already approved vide order dated 20.09.2016 and also fresh add- cap projected during 2019-24.
- 3) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff regulations 2014 and tariff regulation’19 as per para 7 & 8 above for respective block.

Further it is submitted that deferred tax liability before 01.04.2009 shall be recoverable from the beneficiaries or long term customers / DIC as the case may be, as and when the same is materialized as per regulation 49 of 2014 and regulation 67 of 2019 tariff regulation. The petitioner may be allow to recover the deferred tax liability materialised directly without making any application before the commission as provided in the regulation.



- 4) *Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.*
- 5) *Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.*
- 6) *Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the respondents.*
- 7) *Allow the petitioner to recover FERV on the foreign loans deployed as provided under clause 68 of the Tariff Regulations,2019*
- 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 8.5 & 8.6 above.*
- 9) *Allow the petitioner to claim the capital spares at the end of tariff block as per actual.*
- 10) *Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is withdrawn from negative list at any time in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.*

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

3. **Backdrop of the case**

- a) Approval for Central Transmission Project-I in Northern Region, Western Region and Southern Region was accorded by Ministry of Power vide letter dated 7.1.1984 at a total capital investment of ₹35485.00 lakh. However, a fresh approval for Revised Cost Estimate (RCE) of ₹38805.00 lakh was accorded by the Central Government by Ministry of Power vide letter dated 21.8.1987. The cost was further revised to ₹51650.00 lakh vide MoP letter dated 16.6.1993. The apportioned approved cost of different elements of Central Transmission Project-I is as follows:



	(₹ in lakh)
Central Transmission Project A/C line (To be shared by Southern Regional Constituents)	27033
Ramagundam-Chandrapur line (To be shared by Southern and Western Regional Constituents)	5295
Vindhyachal back-to-back HVDC station and Vindhyachal-Singrauli line (To be shared by Northern and Western Regional Constituents)	19322

- b) RCE for Vindhyachal back-to-back HVDC station and Vindhyachal-Singrauli line was approved by the Central Government in Ministry of Power vide letter dated 16.6.1993 at total cost of ₹19322.00 lakh.
- c) Scope of work of the transmission system is as follows:
- (i) 400 kV Singrauli-Vindhyachal S/C line
 - (ii) Singrauli –Vindhyachal HVDC back-2-back Sub-station
- d) Tariff in respect of Vindhyachal back-to-back HVDC station and Vindhyachal-Singrauli transmission line was approved by the Central Government, Ministry of Power, vide notification dated 20.7.1998 and it was revised vide notifications dated 16.11.1998 and 14.5.1999 which was valid up to 31.3.2002. However, as the terms and conditions for determination of tariff notified by the Commission came into effect on 1.4.2001, the transmission charges approved by MoP were rendered valid up to 31.3.2001.
- e) Transmission tariff for 2001-04 tariff period was allowed vide order dated 17.7.2003 in Petition No. 15/2002. Transmission tariff was further revised for the period from 1.4.2001 to 31.3.2004 vide order dated 8.2.2008 in Petition No. 15/2002.
- f) Transmission tariff for 2004-09 tariff period was allowed by the Commission vide order dated 15.12.2005 in Petition No. 113/2004 and the same was again revised vide order dated 14.2.2008 in Petition No. 113/2004.



- g) Transmission tariff for 2009-14 tariff period was allowed by the Commission *vide* order dated 23.1.2012 in Petition No.286/2010.
- h) The Petitioner claimed Additional Capital Expenditure (ACE) in Petition No. 286/2010 during 2012-13 towards purchase of one spare smoothing reactor. The Commission *vide* order dated 23.1.2012 did not allow ACE towards purchase of the said smoothing reactor. However, the Commission in the said order granted liberty to the Petitioner to approach the Commission for ACE in respect of the said smoothing reactor as soon as the same is commissioned.
- i) Transmission tariff of 2009-14 tariff period was trued-up and tariff for 2014-19 tariff period was allowed *vide* order dated 20.9.2016 in Petition No. 543/TT/2014. The Commission *vide* order dated 20.9.2016 in Petition No. 543/TT/2014 also dealt with the issue of ACE towards the smoothing reactor and extension of useful life of the project. The relevant extract of the same is as follows:

“ 8. The petitioner has further submitted that there is increase in Furan content in the oil of existing smoothing reactor from 0.056 on 16.10.2008 to 0.458 on 21.12.2015. This substantial increase in Furan content in oil indicates gradual degradation on insulation paper of the winding and may lead to sudden failure. We are inclined to agree with the submission of the petitioner that high Furan content in oil may lead to sudden failure of the smoothing reactor. Further, considering the clarification from the OEM i.e. ABB, Sweden vide e-mail dated 18.8.2008, that the operation of HVDC system without smoothing reactor will add stress to the valves and increase the risk for problem in the interconnected generator and the fact that HVDC Vindhyachal back to back system was installed prior to establishment of the petitioner’s organisation and no spare smoothing reactor was taken at that time contrary to be practice of procuring spare smoothing reactor in all other HVDC project. Therefore, considering the fact that the availability of power to the beneficiaries concerned would be severely affected, in case of failure of the existing reactor and would lead to non-availability of HVDC system for at least two to three years, in the absence of a spare smoothing reactor as well as at a cost lower than the cost of a new HVDC system, we are inclined to allow the capitalisation of spare smoothing reactor as a special case in exercise of our



“Powers to Relax” under Regulation 54 of the 2014 Tariff Regulations. However, this is not to be considered as precedence in future petitions.

9. The petitioner has also submitted that the useful life of the project would be extended by another 10 years only after the replacement of various connected equipments during 2015-19. As we have allowed capitalisation of the smoothing reactor, the useful life of the spare smoothing reactor is considered as 10 years after completion of useful life of 25 years of existing smoothing reactor w.e.f. June, 2014.”

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

5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or objections have been received from the general public in response to the aforesaid notices published in the newspapers. Madhya Pradesh Power Management Company Limited (MPPMCL), Respondent No. 18, has filed its reply vide affidavit dated 13.2.2020 and has raised the issues of income tax rates for grossing-up of RoE for 2014-19 tariff period and Additional Capital Expenditure (ACE) during 2019-24 tariff period. Uttar Pradesh Power Corporation Limited (UPPCL), Respondent No. 9, has filed its reply vide affidavit dated 19.6.2020 and has raised issues of life of the equipment, cumulative depreciation, Interest on Loan (IoL), Return on Equity (RoE) and Additional Capital Expenditure (ACE) during 2014-19 and 2019-24 periods, license fees, capital spares, mismatch in figures of cumulative depreciation and O&M Expenses. The Petitioner has filed its rejoinders to the replies of MPPMCL and UPPCL vide separate affidavits dated 14.6.2021. The issues raised by UPPCL and MPPMCL and clarifications thereto given by the Petitioner are considered in the relevant portions of this order.



6. This order is issued considering the submissions made by the Petitioner in the petition, reply filed by MPPMCL and UPPCL vide affidavit dated 13.2.2020 and 19.6.2020 respectively, additional information filed by the Petitioner vide affidavits dated 24.8.2020 and 27.11.2020, Petitioner's rejoinder to MPPMCL and UPPCL reply filed vide separate affidavits dated 14.6.2021 and additional information filed by the Petitioner vide affidavit dated 16.6.2021.

7. Hearing in this matter was held on 22.6.2021 through video conference and order was reserved. Having heard the representatives of the Petitioner and MPPMCL and after perusal of the material available on record, we proceed to dispose of the petition.

8. It has been placed before us that MPPMCL has repeatedly been raising the same issue of RoE as has been raised by it in other petitions despite clear findings of the Commission. The contentions of MPPMCL on this issue have been rejected by the Commission in other petitions including in Petition No. 326/TT/2020 vide order dated 21.9.2021. As MPPMCL did not challenge the said findings in higher forum, the same have attained finality. In view of this, the submissions of MPPMCL on the issue of RoE being identical are rejected. The submissions of MPPMCL, Petitioner's clarifications thereto and the Commission's findings on the said issue have not been repeated here to avoid repetition. Further, other issues raised by MPPMCL which are specific to the instant petition and not dealt by the Commission earlier are considered in the relevant portions of this order.

TRUING UP OF ANNUAL FIXED CHARGES FOR 2014-19 TARIFF PERIOD

9. The details of the trued-up transmission charges as claimed by the Petitioner in respect of the transmission asset for 2014-19 tariff period are as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	105.37	214.77	214.77	218.67	430.34
Interest on Loan	70.43	130.65	110.20	91.34	143.17
Return on Equity	1694.54	1765.74	1764.84	1766.63	1855.03
O&M Expenses	579.35	628.40	680.44	737.49	798.54
Interest on Working Capital	75.06	83.31	85.69	88.54	100.01
Total	2524.75	2822.87	2855.94	2902.67	3327.09

10. The details of the trued-up IWC as claimed by the Petitioner in respect of the transmission asset for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M Expenses	48.28	52.37	56.70	61.46	66.55
Working Capital for Maintenance Spares	86.90	94.26	102.07	110.62	119.78
Working Capital for Receivables	420.79	470.48	475.99	483.78	554.52
Total Working Capital	555.97	617.11	634.76	655.86	740.85
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	75.06	83.31	85.69	88.54	100.01

Capital Cost

11. Capital cost of the transmission asset has been calculated in accordance with Regulation 9(3) and Regulation 9(6) of the 2014 Tariff Regulations.

12. The details of capital cost as on 31.3.2014, as on 31.3.2019 along with ACE during 2014-19 tariff period as admitted by the Commission vide order dated 20.9.2016 in Petition No. 543/TT/2014 are as follows:

(₹ in lakh)

Capital cost as on 31.3.2014	ACE allowed in 2014-19 period					Capital cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
17712.57	2188.09	625.13	10323.76	14577.85	2821.64	48249.04

13. The details of capital cost as on 31.3.2014, actual ACE (including de-capitalisation) during 2014-19 tariff period and capital cost as on 31.3.2019 claimed by the Petitioner in the instant petition are as follows:



(₹ in lakh)

Capital cost as on 31.3.2014	ACE 2014-2019					Capital cost as on 31.3.2019	
	2014-15	2014-15 (De-capitalisation)	2015-16	2016-17	2017-18		2018-19
17712.57	2264.77	-76.68	0.00	0.00	60.68	2761.51	22722.85

14. UPPCL has submitted that completion cost is a derivative of capital cost and ACE. The Petitioner has not justified ACE. Therefore, claim for approval of completion cost by the Petitioner is pre-mature.

15. We have considered the submissions of the Petitioner and UPPCL. The capital cost of ₹17712.57 lakh as on 31.3.2014 as approved *vide* order dated 20.9.2016 in Petition No. 543/TT/2014 has been considered as capital cost as on 1.4.2014 for truing-up of transmission tariff for 2014-19 tariff period.

16. Further, our findings pertaining to ACE/ de-capitalisation and capital cost as on 31.3.2019 have been given in the relevant portions of this order.

Additional Capital Expenditure (ACE)

17. The details of ACE admitted by the Commission *vide* order dated 20.9.2016 in Petition No. 543/TT/2014 for 2014-19 tariff period are as follows:

(₹ in lakh)

ACE allowed in 2014-19 period					Total ACE allowed for 2014-19 period
2014-15	2015-16	2016-17	2017-18	2018-19	
2188.09	625.13	10323.76	14577.85	2821.64	30536.47

18. The Commission *vide* order dated 20.9.2016 in Petition No. 543/TT/2014 has allowed the ACE towards BTB HVDC Valve Hall Equipment, Replacement of thyristors per Octuple valves (192 thyristors each) for 03 valves per HVDC Block, Replacement of thyristors control units per Octuple valves (192 thyristors each) for 03 valves per HVDC Block, Replacement of Snubber Capacitor per Octuple valves (192 thyristors each) for 03 valves per HVDC Block, Optical fibres, one set per valve hall



per HVDC Back, Valve cooling system Replacement of valve cooling system with modern type of two circuit system with adiabatic cooler, Replacement of cooling pipes per Octuple valves (192 thyristors each) for 03 valves per HVDC Block, Replacement of Valve Arrestor in HVDC Valve Hall Block-I & Block-II, Electronic unit for DCCT, Valve Hall Ventilation Replacement of ventilation system alongwith introduction of Differential Pressure Sensor for effective monitoring & control, HVDC control & protection including SCADA system, Converter Transformer and smoothing Reactor Bushing, Supply of converter transformer complete, Supply of secondary bushing for converter transformer, Supply of 400 kV bushing, Complete overhauling of OLTC of all converter transformer, Supply of Secondary bushing for smoothing reactor, Refurbishment of 400 kV main CB - Pull rod replacement - Operating mechanism replacement - Supply of spare breaker-1set, 400 kV Filter CB - Pull rod replacement - Operating mechanism replacement - Supply of spare breaker-2 set, Replacement of 400 kV pantograph Isolator Type RP 700, S&S making including earth switches, Replacement of 400 kV HCB Isolator Type RC 500, S&S making including earth switches. The Commission vide order dated 20.9.2016 in Petition No. 543/TT/2014 approved ACE during 2014-19 based on in-principle technical approval of Director (Operations) and directed the Petitioner to submit approval of its Board of Directors at the time of truing-up. The relevant extract of order is as follows:

“56. The additional capital expenditure allowed hereinabove is based on the “In-principle technical approval” of Director (Operations) of the petitioner. The petitioner is directed to submit the approval of its Board of Directors at the time of truing-up. The additional capital expenditure as discussed at para-55 above would be reviewed at the time of truing-up, subject to prudence check and submission of relevant information by the petitioner.”

19. In compliance of above direction of the Commission, the Petitioner has submitted extracts of minutes of 360th meeting of Board of Directors of the Petitioner Company held on 3.1.2019 wherein the following resolution was passed:



“Resolved that ‘Refurbishment of Vindhyachal HVDC system under Additional Capital Expenditure (Part A)’ at an estimated cost of Rs. 297.16 Crore including IDC of Rs. 20.33 Crore based on June, 2018 price level, with commissioning schedule of 32 months from the date of Board approval, be and is hereby approved, as per the memorandum submitted before the Board of Directors.”

20. The Petitioner has submitted copy of the Investment Approval dated 6.11.2017 for Refurbishment of Vindhyachal HVDC System under Additional Capital Expenditure-Part B-Converter Transformer wherein ₹2278 lakh (including IDC of ₹105 lakh) had been approved for supply of 1 (one) number of spare converter transformer at Vindhyachal.

21. The details of ACE claimed by the Petitioner in the instant petition are as follows:

ACE 2014-2019						(₹ in lakh)
2014-15	2014-15 (De-capitalisation)	2015-16	2016-17	2017-18	2018-19	Total ACE claimed in 2014-19 period
2264.77	-76.68	0.00	0.00	60.68	2761.51	5010.28

22. The Petitioner has submitted that ACE and de-capitalisation during 2014-15 is on account of smoothing reactor which has already been admitted by the Commission vide order dated 20.9.2016 in Petition No. 543/TT/2014 and the same is claimed under Regulation 14(3)(vii) and Regulation 14(3) (ix) of the 2014 Tariff Regulations. The Petitioner further submitted that ACE during 2017-18 is on account of replacement of isolators. ACE during 2018-19 is on account of supply of Converter Transformer (CT), overhaul of OLTC of all CTs, refurbishment of Circuit Breakers(CB) and replacement of isolators which has been claimed under Regulation 14(3)(vii) and Regulation 13(3)(ix) of the 2014 Tariff Regulations. Item-wise details of ACE claimed is given in Annexure-I of this order.



23. The Commission vide order dated 20.9.2016 in Petition No. 543/TT/2014 approved net ACE (after de-capitalisation) of ₹30536.47 lakh in 2014-19 tariff period whereas the Petitioner has claimed net ACE of ₹5010.28 lakh during true-up in the instant petition.

24. The Petitioner has submitted that the Commission approved ACE of ₹35902 lakh during 2014-19 for Refurbishment of Vindhaychal HVDC system. However, the work could not be carried out during 2014-19 tariff period and has spilled over to the 2019-24 tariff period. The Petitioner has submitted the following reasons for spill-over of ACE approved during 2014-19 tariff period to 2019-24 tariff period:

(a) Every HVDC is unique in design and has various equipment specific to that project only. As Refurbishment of Vindhyachal HVDC back to back is the first refurbishment project of HVDC back to back in India in which only part of the equipment are to be replaced. The same needs to be integrated with old equipment which involves thorough and in depth technical evaluation by the vendors before participating in the tendering process. Due to this there was substantial delay in getting quotation from prospective bidders for preparation of cost estimates etc. Further, preparation of technical specification for the project also took considerable time being first refurbishment project in India.

(b) Refurbishment work of part of a system involving complex technological integration and intricacies within overall system (originally designed, supplied, installed, tested and commissioned by single original supplier of HVDC Installation) is attempted by the Petitioner for the first time. There are very limited vendors to carry out the said job. This has resulted in delay in finalization of sub-system awarding the work and thus the work.



25. We have considered the submissions of the Petitioner. The Petitioner has obtained two approvals from its Board of Directors i.e. Part-A of ₹29716 lakh including IDC of ₹2033 lakh and for Spare Converter Transformer (Part-B) with an estimated cost of ₹2278 lakh including IDC of ₹105 lakh. However, estimated completion cost for Part-A is 31029 lakh including IDC of 2085 lakh.

26. The Petitioner has offered no explanation with reference to IDC claim of ₹2033 lakh for Part-A and ₹105 lakh for Part-B and as such IDC claim is proportionately reduced from ACE as and when it was incurred/ projected. The Petitioner's claim for IDC may be considered at the time of true-up of 2019-24 tariff period on submission of justifications and details of IDC claim.

27. The Commission vide order dated 20.9.2016 in Petition No. 543/TT/2014 had already allowed ACE for spare smoothing reactor as a special case in exercise of power conferred under Regulation 54 of the 2014 Tariff Regulations under "Powers to Relax"

28. It is observed that in the Board of Directors approval, amount of ₹2264 lakh towards smoothing reactor has not been considered. Considering the importance of smoothing reactor as discussed by the Commission in paragraph 5 to paragraph 9 vide order dated 20.9.2016 in Petition No. 543/TT/2014, we hereby grant one last and final opportunity to the Petitioner to submit revised approval of the Board of Directors including cost of smoothing reactor at the time of trueing up of tariff of 2019-24 period.

29. The COD of existing smoothing reactor was 6.6.1989 and accordingly it has completed 25 years of its useful life on 5.6.2014, which falls in 2014-15. The



Commission has extended useful life by 10 years based on the submission of the Petitioner. However, it is observed that the Petitioner has not incurred ACE as projected. As per the submissions of the Petitioner, out of total projected and allowed ACE of ₹30536.47 lakh, the Petitioner was able to incur ACE of only ₹5010.28 lakh which is about 16% of the approved ACE of 2014-19 tariff period. The Petitioner has not installed the equipment as envisaged and has not incurred ACE towards Valve Hall equipment inclusive of Thyristors & Valve Cooling and Control, Protection & Communication Systems which are required to be replaced and AC Switchyard Equipment, Ventilation System and AC Filters which are required to be partly replaced. Thus, the Petitioner has not installed the above mentioned equipment required for life extension as envisaged to be replaced during 2014-19 tariff period. Therefore, we are of the view that extension of life of the transmission asset for 10 years beyond its useful life up to 5.6.2014 granted by the Commission shall not be applicable and is not required to be considered by the Commission in this petition.

30. The Petitioner has submitted that the Petitioner has not considered ACE approved and consequent AFC for its billing. Thus, the Petitioner on its own has reduced the same from its bills of AFC during 2014-19 tariff period.

31. ACE and de-capitalisation claimed during 2014-19 tariff period are within approved ACE vide order dated 20.9.2016 in Petition No. 543/TT/2014. The ACE claimed by the Petitioner is allowed under Regulation 14(3)(vii) and Regulation 14(3)(ix) of the 2014 Tariff Regulations. The details of ACE allowed in the instant petition are as follows:



(₹ in lakh)

Particulars	ACE 2014-2019					Total ACE allowed in 2014-19 period
	2014-15	2015-16	2016-17	2017-18	2018-19	
ACE (A)	2264.77	0.00	0.00	60.68	2761.51	5080.96
Decapitalisation (B)	76.68	0.00	0.00	0.00	0.00	76.68
IDC disallowed (C)	0.00	0.00	0.00	4.58	155.43	160.01
Net ACE (D)=(A-B-C)	2188.09	0.00	0.00	56.10	2606.08	4850.27

32. Accordingly, the details of the approved capital cost is as follows:

(₹ in lakh)

Capital cost as on 31.3.2014	ACE 2014-2019					Capital cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
17712.57	2188.09	0.00	0.00	56.10	2606.08	22562.84

Debt-Equity Ratio

33. As per Regulation 19(3) of the 2014 Tariff Regulations, debt-equity ratio allowed by the Commission for determination of tariff for the period ending on 31.3.2014 shall be considered. In case of ACE during 2014-19 tariff period, debt-equity ratio is considered as 70:30, whereas de-capitalisation has been carried out in debt-equity prevailing at the time of de-capitalisation as submitted in Form 10B. Accordingly, the details of debt-equity ratio as on 1.4.2014 and 31.3.2019 considering (ACE/ de-capitalisation during 2014-19 tariff period) for the transmission asset are as follows:

Debt-Equity for Capital Cost as on 1.4.2014

Particulars	Amount (₹ in lakh) (A)	(in %)
Debt	9399.70	53.07
Equity	8312.87	46.93
Total	17712.57	100.00

Debt-Equity for ACE and de-capitalisation during 2014-19 period

(₹ in lakh)

Particulars	ACE (B)		De-capitalisation (C)		ACE (D)	ACE (E)	ACE (F)		ACE (G)	
	2014-15	(in %)	2014-15	(in %)*	2015-16	2016-17	2017-18	(in %)	2018-19	(in %)
Debt	1585.34	70.00	40.69	53.06	0.00	0.00	39.27	70.00	1824.26	70.00
Equity	679.43	30.00	35.99	46.94	0.00	0.00	16.83	30.00	781.82	30.00
Total	2264.77	100.00	76.68	100.00	0.00	0.00	56.10	100.00	2606.08	100.00

*as per Form 10B as submitted by the Petitioner



Debt-Equity for Capital Cost as on 31.3.2019

Particulars	Amount (₹ in lakh) (H)=(A+B-C+D+E+F+G)	(in %)
Debt	12807.87*	56.77
Equity	9754.96**	43.23
Total	22562.84	100.00

*Debt as on 1.4.2014 plus debt considered for ACE minus adjustment made in debt on de-capitalisation

** Equity as on 1.4.2014 plus equity considered for ACE minus adjustment made in equity on de-capitalisation

Depreciation

34. UPPCL has submitted that as per order dated 20.9.2016 in Petition No. 543/TT/2014, useful life of the transmission asset is 25 years and useful life as taken by the Petitioner is 35 years in this petition. The Petitioner has also submitted that figures of cumulative depreciation as on 1.4.2014 as admitted by the Commission vide the said order *vis-à-vis* adopted by the Petitioner do not tally.

35. In response, the Petitioner has submitted that life was extended by 10 years vide order dated 20.9.2016 in Petition No. 543/TT/2014. Accordingly, life of 35 years is taken and cumulative depreciation as on 1.4.2014 is in line with the said order.

36. We have considered the submissions of the Petitioner and UPPCL. The transmission asset was put under commercial operation on 6.6.1989 and has already completed its useful life of 25 years. In terms of Regulation 27(3) of the 2014 Tariff Regulations, no further depreciation is allowed in this order on the existing gross block admitted as on 1.4.2014 i.e. ₹17712.57 lakh and there is no need to adjust cumulative depreciation beyond 31.3.2014. However, as discussed in paragraph 29, as the transmission asset has completed its useful life during 2014-15 and the life extension beyond 2014-15 is not being considered, ACE in 2014-19 tariff period is allowed at normative rate of depreciation as specified in the 2014 Tariff Regulations. The Gross Block during 2014-19 tariff period has been depreciated at Weighted Average Rate of



Depreciation (WAROD) and working of WAROD is given at Annexure-II. Thus, the trued-up depreciation is as follows:

(₹ in lakh)

I. Depreciation on Existing Assets						
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Gross Block	17712.57	17635.89	17635.89	17635.89	17635.89
B	ACE	0.00	0.00	0.00	0.00	0.00
C	De-capitalisation	76.68	0.00	0.00	0.00	0.00
D	Closing Gross Block (A+B-C)	17635.89	17635.89	17635.89	17635.89	17635.89
E	Average Gross Block [(A+D)/2]	17674.23	17635.89	17635.89	17635.89	17635.89
F	Rate of Depreciation (in %)	N/A	N/A	N/A	N/A	N/A
G	Balance useful life of the asset (Year)	0	0	0	0	0
H	Elapsed life (Year)	25	25	25	25	25
I	Depreciable value	15872.30	15872.30	15872.30	15872.30	15872.30
J	Depreciation during the year	0.00	0.00	0.00	0.00	0.00
K	Depreciation upto previous year	15941.31	15872.30	15872.30	15872.30	15872.30
L	Depreciation adjustment on account of de-capitalisation	69.01	0.00	0.00	0.00	0.00
M	Net cumulative depreciation after adjustment of de-capitalisation	15872.30	15872.30	15872.30	15872.30	15872.30
N	Remaining depreciable Value (I-M)	0.00	0.00	0.00	0.00	0.00

II. Depreciation on New Assets						
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Gross Block	0.00	2264.77	2264.77	2264.77	2320.87
B	ACE	2264.77	0.00	0.00	56.10	2606.08
C	Closing Gross Block (A+B)	2264.77	2264.77	2264.77	2320.87	4926.95
D	Average Gross Block [(A+D)/2]	1132.39	2264.77	2264.77	2292.82	3623.91
E	Rate of Depreciation (in %)	5.28	5.28	5.28	5.28	5.28
F	Depreciable value	1019.15	2038.29	2038.29	2063.54	3261.52
G	Depreciation during the year	59.79	119.58	119.58	121.06	191.34
H	Depreciation upto previous year	0.00	59.79	179.37	298.95	420.01
I	Cumulative depreciation	59.79	179.37	298.95	420.01	611.35
J	Remaining Depreciable Value (F-I)	959.36	1858.92	1739.34	1643.53	2650.16

(₹ in lakh)

Combined Depreciation						
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
I	Existing Assets	0.00	0.00	0.00	0.00	0.00
II	New Assets	59.79	119.58	119.58	121.06	191.34
III	Depreciation during the year (I+II)	59.79	119.58	119.58	121.06	191.34



37. Depreciation allowed in respect of transmission asset vide order dated 20.9.2016 in Petition No. 543/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	98.46	239.13	855.00	2455.82	3760.78
Claimed by the Petitioner in the instant petition	105.37	214.77	214.77	218.67	430.34
Approved after true-up in this order	59.79	119.58	119.58	121.06	191.34

Interest on Loan (IoL)

38. UPPCL has submitted that cost of smoothing reactor is ₹2188.09 lakh, its COD was in 2014-15 and debt-equity ratio is 70:30. Therefore, increase should be ₹1531.67 lakh in 2014-15 but the Petitioner has claimed ₹1544.65. Depreciation during 2014-15 is ₹105.37 lakh and adjustment of cumulative repayment pertains to decapitalized asset is ₹40.69 lakh. Therefore, average normative loan should be ₹732.46 lakh instead of ₹739.99 lakh and IoL during 2014-15 should be ₹ 69.75 lakh instead of ₹70.43 lakh for 2014-15 as claimed by the Petitioner. In view of above, UPPCL has requested to examine the validity of derivation of WAROI.

39. In response, the Petitioner has submitted that cumulative repayment as on 1.4.2014 is in line with order dated 20.9.2016 in Petition No. 543/TT/2014. The cost of smoothing reactor is ₹2264.77 lakh and debt and equity has been considered as per the 2014 Tariff Regulations. As per the Auditor's Certificate, ACE during 2014-15 is ₹2264.77 lakh and there is de-capitalisation of ₹76.68 lakh. Therefore, net ACE considered for 2014-15 is ₹2188.09 lakh.

40. We have considered the submissions of the Petitioner and UPPCL. Actual loans and notional loans in respect of existing asset have been repaid as on



31.3.2014. Accordingly, IoL has been calculated based on actual interest rate in accordance with Regulation 26 of the 2014 Tariff Regulations. The trued-up IoL allowed in respect of the transmission asset for 2014-19 tariff period is as follows:

(₹ in lakh)

Interest on Loan for New Assets						
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
A	Gross Normative Loan	0.00	1585.34	1585.34	1585.34	1624.61
B	Cumulative Repayments up to Previous Year	0.00	59.79	179.37	298.95	420.01
C	Net Loan-Opening (A-B)	0.00	1525.55	1405.97	1286.39	1204.60
D	Additions	1585.34	0.00	0.00	39.27	1824.26
E	Repayment during the year	59.79	119.58	119.58	121.06	191.34
F	Net Loan-Closing (C+D)	1525.55	1405.97	1286.39	1204.60	2837.51
G	Average Loan [(C+F)/2]	762.78	1465.76	1346.18	1245.49	2021.05
H	Weighted Average Rate of Interest on Loan (in %)	9.5183	9.5182	9.5182	9.4913	8.8070
I	Interest on Loan (G*H)	72.60	139.51	128.13	118.21	177.99

41. IoL allowed for the transmission asset vide order dated 20.9.2016 in Petition No. 543/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	49.52	105.91	332.94	820.88	1026.93
Claimed by the Petitioner in the instant petition	70.43	130.65	110.20	91.34	143.17
Approved after true-up in this order	72.60	139.51	128.13	118.21	177.99

Return on Equity

42. The Petitioner has claimed RoE in respect of the transmission asset in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at Minimum Alternate Tax (MAT) rates and has claimed effective tax rates for 2014-19 tariff period and the same is as follows:

Year	Claimed effective tax rate (in %)	Grossed up RoE (in %) [(Base Rate)/(1-t)]
2014-15	21.018	19.625
2015-16	21.382	19.715
2016-17	21.338	19.705



Year	Claimed effective tax rate (in %)	Grossed up RoE (in %) [(Base Rate)/(1-t)]
2017-18	21.337	19.705
2018-19	21.549	19.758

43. UPPCL has submitted that gross rate of RoE for 2016-17 to 2018-19 is not based on MAT rates approved by the Income Tax Authorities. UPPCL has further submitted that figures of the opening value of equity as per order dated 20.9.2016 in Petition No. 543/TT/2014 *vis-à-vis* mentioned in this petition do not tally.

44. In response, the Petitioner has made identical submissions on RoE as have been made by it with reference to the submissions of MPPMCL. In order to be brief and concise, the same have not been repeated here. The Petitioner has, however, added that opening equity as on 1.4.2014 is ₹8312.87 lakh which is in line with order dated 20.9.2016 in Petition No. 543/TT/2014.

45. We have considered the submissions of the Petitioner and UPPCL. The Commission vide order dated 27.4.2020 in Petition No. 274/TT/2019 had arrived at the effective tax rates for the Petitioner based on the notified MAT rates and the same is as follows:

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

46. MAT rates allowed vide order dated 27.4.2020 in Petition No. 274/TT/2019 for the purpose of grossing up of rate of RoE for truing up of tariff of the 2014-19 period, in terms of the provisions of the 2014 Tariff Regulations, are considered in the instant case which are as follows:



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

47. The Petitioner has claimed RoE for 2014-19 period after grossing up the RoE @ 15.50% with Effective Tax rates (based on MAT rates) each year. RoE is trued-up on the basis of MAT rates applicable in the respective years and is approved for the transmission asset for 2014-19 tariff period and the same is as follows:

Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Equity	8312.87	8956.31	8956.31	8956.31	8973.14
B	Additions	679.43	0.00	0.00	16.83	781.82
C	Decrease due to de-capitalization during the period	35.99	0.00	0.00	0.00	0.00
D	Closing Equity (A+B-C)	8956.31	8956.31	8956.31	8973.14	9754.96
E	Average Equity [(A+D)/2]	8634.59	8956.31	8956.31	8964.72	9364.05
F	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
G	MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549
H	Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758
I	Return on Equity (E*I)	1693.24	1764.84	1764.84	1766.50	1850.15

48. RoE allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014 in respect of the transmission asset, RoE claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	1694.52	1777.27	2099.33	2831.81	3343.62
Claimed by the Petitioner in the instant petition	1694.54	1765.74	1764.84	1766.63	1855.03
Approved after true-up in this order	1693.24	1764.84	1764.84	1766.50	1850.15

Operation & Maintenance Expenses (O&M Expenses)

49. O&M Expenses claimed by the Petitioner in respect of various elements of the transmission asset in this petition are as follows:



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station					
Singrauli-Vindhyachal HVDC Back to Back					
Number of units	1	1	1	1	1
Transmission lines					
400 kV Singrauli-Vindhyachal S/C line					
S/C (Twin/Triple Conductor) (km)	3.340	3.340	3.340	3.340	3.340
Total O&M Expenses (₹ in lakh)	579.35	628.40	680.44	737.49	798.54

50. The norms specified for elements of the transmission asset under Regulation 29(4) of the 2014 Tariff Regulations are as follows:

Element	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
S/C (Twin/Triple Conductor) (km)	0.404	0.418	0.432	0.446	0.461
Singrauli-Vindhyachal HVDC Back to Back (₹lakh/500 MW)	578.00	627.00	679.00	736.00	797.00

51. UPPCL has submitted that O&M Expenses considered by the Petitioner are not consistent with the O&M Expenses worked out by UPPCL. In response, the Petitioner has submitted that O&M Expenses have been computed as per the 2014 Tariff Regulations.

52. We have considered the submissions made by the Petitioner and UPPCL. The O&M Expenses in respect of various elements covered under the transmission asset are allowed under Regulation 29(4) of the 2014 Tariff Regulations and are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
1 Number of Unit Singrauli-Vindhyachal HVDC Back to Back (₹lakh/500 MW)	578.00	627.00	679.00	736.00	797.00
Transmission line S/C (Twin/Triple Conductor) (3.340 km)	1.35	1.40	1.44	1.49	1.54
Total	579.35	628.40	680.44	737.49	798.54

53. O&M Expenses allowed in respect of the transmission asset vide order dated 20.9.2016 in Petition No. 543/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	579.35	628.40	680.44	737.49	798.54
Claimed by the Petitioner in the instant petition	579.35	628.40	680.44	737.49	798.54
Approved after true-up in this order	579.35	628.40	680.44	737.49	798.54

Interest on Working Capital (IWC)

54. IWC has been worked out as per the methodology provided under Regulation 28 of the 2014 Tariff Regulations and the trued-up IWC approved in respect of the transmission asset is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A Working Capital for O&M Expenses (O&M Expenses for one month)	48.28	52.37	56.70	61.46	66.54
B Working Capital for Maintenance Spares (15% of O&M Expenses)	86.90	94.26	102.07	110.62	119.78
C Working Capital for Receivables (Equivalent to two months of annual fixed costs/annual transmission charges)	413.17	455.61	462.82	471.70	518.87
D Total Working Capital (A+B+C)	548.35	602.23	621.59	643.78	705.20
E Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
F Interest on Working Capital (D*E)	74.03	81.30	83.91	86.91	95.20

55. IWC allowed in respect of the transmission asset vide order dated 20.9.2016 in Petition No. 543/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	74.42	83.57	113.26	181.35	231.28
Claimed by the Petitioner in the instant petition	75.06	83.31	85.69	88.54	100.01
Approved after true-up in this order	74.03	81.30	83.91	86.91	95.20



Approved Annual Fixed Charges for 2014-19 Tariff Period

56. The trued-up AFC approved in respect of the transmission asset for 2014-19 tariff period are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	59.79	119.58	119.58	121.06	191.34
Interest on Loan	72.60	139.51	128.13	118.21	177.99
Return on Equity	1693.24	1764.84	1764.84	1766.50	1850.15
O&M Expenses	579.35	628.40	680.44	737.49	798.54
Interest on Working Capital	74.03	81.30	83.91	86.91	95.20
Total	2479.01	2733.63	2776.91	2830.17	3113.23

57. Accordingly, Annual Transmission Charges approved vide order dated 20.9.2016 in Petition No. 543/TT/2014, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 20.9.2016 in Petition No. 543/TT/2014	2496.27	2834.27	4080.97	7027.34	9161.15
Claimed by the Petitioner in the instant petition	2524.75	2822.87	2855.94	2902.67	3327.09
Approved after true-up in this order	2479.01	2733.63	2776.91	2830.17	3113.23

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

58. The Petitioner vide affidavit dated 27.11.2020 has claimed the following transmission charges in respect of the transmission asset for 2019-24 tariff period:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	791.49	2796.79	7498.35	10805.06	11279.74
Interest on Loan	199.56	569.37	956.77	635.72	143.95
Return on Equity	1860.06	2354.88	3046.56	3250.29	3238.87
O&M Expenses	835.96	866.02	896.08	927.14	960.21
Interest on Working Capital	79.30	124.05	212.53	261.99	262.35
Total	3766.37	6711.11	12610.29	15880.20	15885.12

59. The Petitioner vide affidavit dated 27.11.2020 has claimed the following IWC in respect of the transmission asset for 2019-24 tariff period:



Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses	69.66	72.17	74.67	77.26	80.02
Working Capital for Maintenance Spares	125.39	129.90	134.41	139.07	144.03
Working Capital for Receivables	463.08	827.40	1554.69	1957.83	1953.09
Total Working Capital	658.13	1029.47	1763.77	2174.16	2177.14
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	79.30	124.05	212.53	261.99	262.35

Capital Cost

60. Regulation 19 of the 2019 Tariff Regulations provide as follows:

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

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

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



(m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;

(n) Expenditure on account of change in law and force majeure events; and

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

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

(a) Capital cost admitted by the Commission prior to 1.4.2019 duly tried up by excluding liability, if any, as on 1.4.2019;

(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;

(c) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal up to the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and

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

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

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

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

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

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

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

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

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

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



(d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and
(e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.”

61. The Petitioner has claimed capital cost of ₹22722.85 lakh (including ACE and de-capitalisation) as on 31.3.2019 for the transmission asset. The capital cost of ₹22562.84 lakh has been worked out by the Commission as on 31.3.2019 in this order which has been considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (ACE)

62. Regulation 25 of the 2019 Tariff Regulations provide as follows:

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

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

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

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

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

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

(e) Force Majeure events;

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

(g) Raising of ash dyke as a part of ash disposal system.

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

(a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;

(b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;



- (c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and
(d) The replacement of such asset or equipment has otherwise been allowed by the Commission.”

63. The Petitioner vide affidavit dated 6.1.2020 has submitted the following ACE in respect of the transmission asset in 2019-24 tariff period:

Particulars	₹ in lakh	Petitioner's remarks
Capital Cost as on 31.3.2014	22722.85	
Estimated ACE during 2019-20	3201.49	₹3201.49 lakh is spill-over from 2014-19 tariff block.
Estimated Decapitalization during 2019-20	-500	
Estimated ACE during 2020-21	18721.30	₹18608.94 lakh is spill-over from 2014-19 block and ₹112.36 lakh is fresh ACE proposed in 2019-24 tariff block.
Estimated Decapitalization during 2020-21	-3003.58	
Estimated ACE during 2021-22	9244.23	₹9004.47 lakh is spill-over from 2014-19 block and ₹239.76 lakh is fresh additional capitalization proposed in 2019-24 tariff block.
Estimated Decapitalization during 2021-22	-1799.88	
Estimated ACE during 2022-23	0.00	
Estimated ACE during 2023-24	0.00	
Estimated capital cost as on 31.3.2024	48586.41	

64. The Petitioner vide affidavit dated 24.8.2020, has claimed the following ACE during 2019-24 tariff period in respect of the transmission asset:

Particulars	₹ in lakh	Petitioner's remarks
Capital Cost as on 31.3.2014	22722.85	
Estimated ACE during 2019-20	3201.49	₹3201.49 lakh is spill over from 2014-19 block.
Estimated Decapitalization during 2019-20	-500	
Estimated ACE during 2020-21	22699.70	₹18608.94 lakh is spill over from 2014-19 block and ₹4090.76 lakh is fresh ACE proposed during 2019-24 block.
Estimated Decapitalization during 2020-21	-3003.58	
Estimated ACE during 2021-22	9244.23	₹9004.47 lakh is spill over from 2014-19 block and ₹239.76 lakh is fresh add cap proposed in 2019-24 block.
Estimated Decapitalization during 2021-22	-1799.88	
Estimated ACE during 2022-23	0.00	



Particulars	₹ in lakh	Petitioner's remarks
Estimated ACE during 2023-24	0.00	
Estimated capital cost as on 31.3.2024	52564.81	

65. The Petitioner vide affidavit dated 27.11.2020 has claimed the following ACE for 2019-24 tariff period in respect of the transmission asset under Regulation 25(2) of the 2019 Tariff Regulations:

(₹ in lakh)							
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24	Total
A	Spill over of ACE from 2014-19 tariff period	1024.55	11162.84	11543.21	3220.35	108.63	27059.58
B	De-capitalisation pertaining to spill over of ACE from 2014-19 tariff period	226.80	48.37	2626.32	2330.69	56.54	5288.72
C	Fresh ACE claim during 2019-24 tariff period	0.00	5812.35	239.76	0.00	0.00	6052.11
D	De-capitalisation pertaining to fresh ACE claimed in 2019-24 period	0.00	3.57	11.17	0.00	0.00	14.74
E	Net ACE (A-B+C-D)	797.75	16923.25	9145.48	889.66	52.09	27808.23

66. MPPMCL has submitted that ACE claimed by the Petitioner during 2019-24 tariff period has already been considered while granting tariff for 2014-19 period. MPPMCL has further submitted that the Petitioner earlier projected that it would invest the amount towards ACE in the proposed years. MPPMCL has submitted that on the one hand, the Petitioner has failed to infuse this amount to be considered as capital cost and on the other hand, it is again claiming the same to be admitted for next tariff period. MPPCL has prayed that spill over amount may be rejected and ACE may be allowed on actual basis at the time of truing up.

67. UPPCL has submitted that the Petitioner has not given year-wise and item-wise liability flow statement in support of ACE with reference to balance and retention



payment. Therefore, the claim for approval of ACE by the Petitioner is premature. In response, the Petitioner has submitted that reasons for spill over of ACE have already been submitted *vide* affidavit dated 24.8.2020.

68. In the course of hearing the matter on 22.6.2021, the Commission observed as follows:

“4. The Commission observed that the Petitioner’s claim of ACE in instalments with respect to HVDC Back to Back at Vindhyachal at different time periods cannot be entertained. The Commission further observed that the Petitioner’s claim of ACE in 2019-24 tariff period may be considered only on submission of the results of System Operator Studies/ Comprehensive Proposal regarding need and relevance for HVDC Back to Back at Vindhyachal. Accordingly, ACE for the works during 2014-19 tariff period will be considered in the instant petition and the ACE proposed during 2019-24 tariff period will be considered after the receipt of the report. However, the Commission gave the liberty to the Petitioner to approach the Commission for grant of ACE in 2019-24 tariff period with the approved study report of the competent committee.”

69. In the light of above observation of the Commission, the Petitioner is directed to obtain and submit the technical approval and report of CTUIL and POSOCO on the requirement and usefulness of HVDC back to back at Vindhyachal. Further, it is observed that the proposed ACE of ₹6052 lakh in case of HVDC back to back at Vindhyachal is in the nature of Renovation and Modernization (R&M). As such, the Petitioner is directed to follow the procedure specified in Regulation 27 of the 2019 Tariff Regulations and file a petition accordingly. ACE claimed for HVDC back to back at Vindhyachal in 2019-24 period is not considered in the instant petition and the Petitioner is granted liberty to file a separate petition, if required, under the provisions of Regulation 27 of the 2019 Tariff Regulations along with the detailed study and report from CTUIL and POSOCO as stated above.



70. The Petitioner has not submitted item-wise details of ACE projected in 2019-24 tariff period. The Petitioner is directed to submit item-wise break-up/details of ACE in 2019-24 tariff period at the time of truing-up.

71. ACE allowed *vide* order dated 20.9.2016 in Petition No. 543/TT/2014 has not been completely used during 2014-19 tariff period and has spilled over to 2019-24 tariff period. As discussed above, spill over of ACE and its corresponding de-capitalisation is being allowed under Regulation 25(2) of the 2019 Tariff Regulations and it is as follows:

		(₹ in lakh)					
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24	Total
A	Spill over of ACE from 2014-19 tariff period	1024.55	11162.84	11543.21	3220.35	108.63	27059.58
B	De-capitalisation pertaining to spill over of ACE from 2014-19 tariff period	226.80	48.37	2626.32	2330.69	56.54	5288.72
C	IDC disallowed	71.61	843.16	863.76	243.24	8.21	2029.99
D	Net ACE (A-B-C)	726.14	10271.31	8053.13	646.42	43.88	19740.87

72. Accordingly, capital cost considered in respect of the transmission asset for 2019-24 tariff period is as follows:

		(₹ in lakh)					
Capital Cost as on 1.4.2019	2019-20	2020-21	2021-22	2022-23	2023-24	Capital Cost as on 31.3.2024	
22562.84	726.14	10271.31	8053.13	646.42	43.88	42303.71	

Adjustments to Equity

73. Weighted Average Life for the transmission asset was determined as 25 years and it has completed its useful life in 2014-19 tariff period. The first proviso to Regulation 18(3) of the 2019 Tariff Regulations provides that in case of a transmission system including communication system which has completed its useful life on or after 1.4.2019 and if the actual equity deployed is more than 30% of the capital cost, then



the equity shall be restricted to 30% of the total equity deployed. Regulation 18(3) of the 2019 Tariff Regulations provides as follows

“18. Debt-Equity Ratio:

(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;....”

74. Debt-equity ratio as on 31.3.2019 is 56.77:43.23 i.e. equity deployed is more than 30%. Therefore, as per proviso to Regulation 18(3) of the 2019 Tariff Regulations, equity from 1.4.2019 onward has been restricted to 30%. Accordingly, the capital cost allowed for 2019-24 tariff period for the transmission asset is as follows:

		(₹ in lakh)
Particulars		Amount
A	Closing equity as on 31.3.2019*	9754.96
B	Equity in excess of 30% of Capital Cost	2986.11
C	Equity admissible as on 1.4.2019** (C)=(A-B)	6768.85

*Represents 43.23% of Capital Cost of ₹22562.84 lakh

**Represents 30.00% of Capital Cost of ₹22562.84 lakh

Debt-Equity Ratio

75. 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.”*

76. The transmission asset has completed its useful life in 2014-15 and de-capitalisation of elements forming part of the transmission asset has been proposed after completion of useful life. In accordance with Regulation 18 of the 2019 Tariff Regulations, ACE for 2019-24 tariff period is allowed in the ratio of 70:30. As observed above, equity from 2019-20 onwards is restricted to 30%. The details of



debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period is as follows:

Debt-Equity for Capital Cost as on 1.4.2019

Particulars	Amount (₹ in lakh) (A)	(in %)
Debt	12807.87	56.77
Restricted Equity @ 30%	6768.85	30.00
Excess equity	2986.11	
Total	22562.84	86.77

Debt-Equity for ACE and de-capitalisation during the 2019-24 period

(₹ in lakh)

Particulars	ACE [^] (B)		Decapitalization (C)		ACE [^] (D)		Decapitalization (E)		ACE [^] (F)		Decapitalization (G)	
	2019-20	(in %)	2019-20	(in %)	2020-21	(in %)	2020-21	(in %)	2021-22	(in %)	2021-22	(in %)
Debt	667.06	70.00	158.76	70.00	7223.77	70.00	33.86	70.00	7475.61	70.00	1838.42	70.00
Equity	285.88	30.00	68.04	30.00	3095.90	30.00	14.51	30.00	3203.83	30.00	787.90	30.00
Total	952.94	100.00	226.80	100.00	10319.68	100.00	48.37	100.00	10679.45	100.00	2626.32	100.00

[^] Net of IDC dis-allowed

(₹ in lakh)

Particulars	ACE [^] (H)		Decapitalization (I)		ACE [^] (J)		Decapitalization (K)	
	2022-23	(in %)	2022-23	(in %)	2023-24	(in %)	2023-24	(in %)
Debt	2083.97	70.00	1631.48	70.00	70.30	70.00	39.58	70.00
Equity	893.13	30.00	699.21	30.00	30.13	30.00	16.96	30.00
Total	2977.11	100.00	2330.69	100.00	100.42	100.00	56.54	100.00

[^] Net of IDC dis-allowed

Debt-Equity for Capital Cost as on 31.3.2024

77. The transmission asset has completed its useful life during 2014-15, therefore, equity from 2019-20 onwards has been restricted to 30% as per proviso to Regulation 18(3) of the 2019 Tariff Regulations. Accordingly, debt-equity as on 31.3.2024 will be as follows:

Funding	Capital Cost as on 1.4.2019 after equity restriction		ACE/Decapitalization during 2019-20				Capital Cost as on 31.3.2024 after equity restriction	
	₹ in lakh	in %	ACE		Decapitalization		₹ in lakh	in %
			₹ in lakh	in %	₹ in lakh	in %		
Debt	12807.87	56.77	667.06	70.00	158.76	70.00	13316.17	57.18
Restricted Equity @30%	6768.85	30.00	285.88	30.00	68.04	30.00	6986.69	30.00
Excess Equity	2986.11	-	-	-	-	-	2986.11	-
Total	22562.83	86.77	952.94	100.00	226.80	100.00	23288.97	87.18



Funding	Capital Cost as on 1.4.2020 after equity restriction		ACE/Decapitalization during 2020-21				Capital Cost as on 31.3.2021 after equity restriction	
			ACE		Decapitalization			
	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %
Debt	13316.17	57.18	7223.77	70.00	33.86	70.00	20506.08	61.10
Restricted Equity@30%	6986.69	30.00	3095.90	30.00	14.51	30.00	10068.08	30.00
Excess Equity	2986.11	-	-	-	-	-	2986.11	-
Total	23288.97	87.18	10319.68	100.00	48.37	100.00	33560.28	91.10

Funding	Capital Cost as on 1.4.2021 after equity restriction		ACE/Decapitalization during 2021-22				Capital Cost as on 31.3.2022 after equity restriction	
			ACE		Decapitalization			
	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %
Debt	20506.08	61.10	7475.61	70.00	1838.42	70.00	26143.27	62.82
Restricted Equity@30%	10068.08	30.00	3203.83	30.00	787.90	30.00	12484.02	30.00
Excess Equity	2986.11	-	-	-	-	-	2986.11	-
Total	33560.28	91.10	10679.45	100.00	2626.32	100.00	41613.40	92.82

Funding	Capital Cost as on 1.4.2022 after equity restriction		ACE/De-Capitalisation during 2022-23				Capital Cost as on 31.3.2023 after equity restriction	
			ACE		De-Capitalisation			
	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %
Debt	26143.27	62.82	2083.97	70.00	1631.48	70.00	26595.76	62.93
Restricted Equity@30%	12484.02	30.00	893.13	30.00	699.21	30.00	12677.95	30.00
Excess Equity	2986.11	-	-	-	-	-	2986.11	-
Total	41613.40	92.82	2977.11	100.00	2330.69	100.00	42259.82	92.93

Funding	Capital Cost as on 1.4.2023 after equity restriction		ACE/Decapitalization during 2023-24				Capital Cost as on 31.3.2024 after equity restriction	
			ACE		Decapitalization			
	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %	₹ in lakh	in %
Debt	26595.76	62.93	70.30	70.00	39.58	70.00	26626.48	62.94
Restricted Equity@30%	12677.95	30.00	30.13	30.00	16.96	30.00	12691.11*	30.00
Excess Equity	2986.11	-	-	-	-	-	2986.11	-
Total	42259.82	92.93	100.42	100.00	56.54	100.00	42303.71	92.94

*Equity to be serviced as on 31.3.2024 is ₹12691.11 lakh (Equity in excess of 30% reduced as discussed above)



Depreciation

78. 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.”

79. ACE claimed in 2019-24 period relating to smoothing reactor introduced in 2014-19 tariff period is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations. The working of WAROD is placed at Annexure-III. The depreciation allowed in respect of the transmission asset for 2019-24 period is as follows:

(₹ in lakh)

I. Depreciation on Existing Assets						
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	17635.89	17409.09	17360.72	14734.40	12403.71
B	ACE	0	0	0	0	0
C	Decapitalization	226.80	48.37	2626.32	2330.69	56.54



I. Depreciation on Existing Assets						
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
D	Closing Gross Block (A+B-C)	17409.09	17360.72	14734.40	12403.71	12347.17
E	Average Gross Block [(A+D)/2]	17522.49	17384.91	16047.56	13569.06	12375.44
F	Rate of Depreciation (in %)	N/A	N/A	N/A	N/A	N/A
G	Balance useful life of the asset (Year)	0	0	0	0	0
H	Elapsed life (Year)	25	25	25	25	25
I	Depreciable value	15668.18	15624.65	13260.96	11163.34	11112.45
J	Depreciation during the year	0	0	0	0	0
K	Cumulative depreciation upto previous year before adjustment for decapitalization	15872.30	15668.18	15624.65	13260.96	11163.34
L	Depreciation adjustment on account of decapitalization	204.12	43.533	2363.69	2097.62	50.89
M	Net cumulative depreciation after adjustment for decapitalization	15668.18	15624.65	13260.96	11163.34	11112.45
N	Cumulative depreciation	15668.18	15624.65	13260.96	11163.34	11112.45
O	Remaining depreciable Value (I-N)	0.00	0.00	0.00	0.00	0.00

(₹ in lakh)

II. Depreciation on New Assets						
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	4926.95	5879.88	16199.56	26879.01	29856.12
B	ACE	952.94	10319.68	10679.45	2977.11	100.42
C	Closing Gross Block (A+B)	5879.88	16199.56	26879.01	29856.12	29956.54
D	Average Gross Block [(A+C)/2]	5403.41	11039.72	21539.28	28367.56	29906.33
E	Weighted Average Rate of Depreciation (in %)	5.28	5.28	5.28	5.28	5.28
F	Aggregate Depreciable Value	4863.07	9935.75	19385.36	25530.81	26915.69
G	Depreciation upto previous year	611.35	896.65	1479.55	2616.82	4114.63
H	Depreciation during the year	285.30	582.90	1137.27	1497.81	1579.05
I	Cumulative depreciation	896.65	1479.55	2616.82	4114.63	5693.69
J	Remaining depreciable value at the end of the year (F-I)	3966.42	8456.20	16768.53	21416.17	21222.01



(₹ in lakh)

III. Combined depreciation						
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
I	Existing Assets	0.00	0.00	0.00	0.00	0.00
II	New Assets	285.30	582.90	1137.27	1497.81	1579.05
III	Depreciation during the year (A+B)	285.30	582.90	1137.27	1497.81	1579.05

Interest on Loan (IoL)

80. 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.”*

81. UPPCL has submitted that figures of cumulative depreciation of the transmission asset utilized for arriving at IoL for 2019-20 is different as per the Petitioner’s submissions and as such there is discrepancy in the figures of IoL. UPPCL has further submitted that validity of Weighted Average Rates of Interest on Loans (WAROI) may be examined by the Commission. In response, the Petitioner has submitted that tariff components have been calculated as per applicable Tariff Regulations and there is no discrepancy in it.

82. We have considered the submissions of the Petitioner and UPPCL. WAROI on loan has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period will be adjusted. Accordingly, floating rate of interest, if any, shall be considered at the time of truing up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL approved in respect of the transmission asset for 2019-24 tariff period is as follows:

(₹ in lakh)

Interest on Loan for New Assets						
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
A	Gross Normative Loan	3448.86	4115.92	11339.69	18815.31	20899.28
B	Cumulative repayments up to Previous Year	611.35	896.65	1479.55	2616.82	4114.63
C	Net Loan-Opening (A-B)	2837.51	3219.27	9860.14	16198.48	16784.65
D	Additions	667.06	7223.77	7475.61	2083.97	70.30
E	Repayment during the year	285.30	582.90	1137.27	1497.81	1579.05
F	Net Loan-Closing (C+D-E)	3219.27	9860.14	16198.48	16784.65	15275.89
G	Average Loan [(C+F)/2]	3028.39	6539.70	13029.31	16491.57	16030.27
H	Weighted Average Rate of Interest on Loan (in %)	8.5289	8.3173	8.1335	8.0851	8.0255
I	Interest on Loan (G*I)	258.29	543.93	1059.74	1333.35	1286.50



Return on Equity (RoE)

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

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

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

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope, excluding additional capitalization on account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.

Provided further that:

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

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

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

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:

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

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



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

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

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

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

Illustration-

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

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

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

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

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

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

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

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



84. The Petitioner has submitted that it is liable to pay Income Tax at MAT rates applicable to it.

85. UPPCL has submitted that opening value of equity considered by the Petitioner does not match with the computations made by UPPCL and as such figures of RoE have to be revised. UPPCL has further submitted that the grossed up rate of RoE for the entire period per year is the same as that of the rate ending in 2019-20 which is not based on MAT rates approved by the Income Tax Authorities.

86. In response, the Petitioner has submitted that there is change in MAT rate applicable for the year 2019-20 on account of Taxation Laws (Amendment) Ordinance 2019 published in the Gazette dated 20.9.2019 and made the following submissions:

a. RoE has been calculated at the rate of 18.782% after grossing up of RoE with MAT rate of 17.472% (Base Rate 15% + Surcharge 12% + Cess 4%) based on the formula given in Regulation 31(2) of the 2019 Tariff Regulations.

b. As per Regulation 31(3) of the 2019 Tariff Regulations, grossed up rate of RoE at the end of every financial year should be trued up 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 IT 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 transmission licensee.

87. We have considered the submissions of the Petitioner and UPPCL. 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 asset for 2019-24 tariff period is as follows:

		(₹ in lakh)				
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
A	Closing equity as on 31.3.2019	9754.96	0.00	0.00	0.00	0.00
B	Equity in excess of 30% of capital cost	2986.11	0.00	0.00	0.00	0.00
C	Opening equity (A-B)	6768.85	6986.69	10068.08	12484.02	12677.95
D	Additions	285.88	3095.90	3203.83	893.13	30.13
E	Decrease due to decapitalization during the period	68.04	14.51	787.90	699.21	16.96
F	Closing Equity (C+D-E)	6986.69	10068.08	12484.02	12677.95	12691.11
G	Average Equity [(C+F)/2]	6877.77	8527.39	11276.05	12580.99	12684.53
H	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
I	MAT rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
J	Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
K	Return on Equity (G*J)	1291.78	1601.61	2117.87	2362.96	2382.41

Operation & Maintenance Expenses

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

“35. Operation and Maintenance Expenses: (3) Transmission system: (a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
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-	0.755	0.781	0.809	0.837	0.867



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
conductors)					
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.

“35(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.”

89. O&M Expenses claimed by the Petitioner for various elements covered under the transmission asset for 2019-24 tariff period are as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station					
Singrauli-Vindhyachal HVDC Back-2-Back					
Number of units	1	1	1	1	1
Transmission lines					
Singrauli-Vindhyachal					
S/C (Twin/Triple Conductor) (km)	3.340	3.340	3.340	3.340	3.340
PLCC					
2% of ₹13.85 lakh					
Total O&M Expenses (₹ in lakh)	835.96	866.02	896.08	927.14	960.21

90. We have considered the submissions of the Petitioner. The Petitioner has claimed O&M Expenses separately for PLCC under Regulation 35(4) of the 2019 tariff Regulations @2% of its original project cost in the instant petition. The Petitioner has made similar claim in other petitions as well. Though PLCC is a communication



system, it has been considered as part of the sub-station in the 2014 Tariff Regulations and the 2019 Tariff Regulations and norms for sub-station have been specified accordingly. Accordingly, the Commission vide order dated 24.1.2021 in Petition No. 126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations even though PLCC is a communication system. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

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

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Singrauli-Vindhyachal HVDC Back-2-Back station	834.00	864.00	894	925.00	958
Transmission line S/C (Twin/Triple Conductor) (3.340 km)	1.68	1.74	1.80	1.86	1.93
Total	835.68	865.74	895.80	926.86	959.93

Interest on Working Capita (IWC)

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

“34. Interest on Working Capital: (1) The working capital shall cover:

.....

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

- (i) Receivables equivalent to 45 days of annual fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and
- (iii) Operation and maintenance expenses, including security expenses for one month.”

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

Provided that in case of truing-up, the rate of interest on working capital shall be



considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.”

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

“3. Definitions

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

93. The Petitioner has submitted that it has computed IWC for 2019-24 period considering SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and from 2021-22 onwards it has been considered as 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points).

94. We have considered the submissions of the Petitioner. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations and components of the working capital and interest allowed thereon in respect of the transmission asset for 2019-24 tariff period are as follows:

		(₹ in lakh)				
Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for 1 month)	69.64	72.15	74.65	77.24	79.99
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	125.35	129.86	134.37	139.03	143.99
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed costs/annual transmission charges)	336.28	452.19	653.58	767.38	776.18



Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
D	Total Working Capital (A+B+C)	531.27	654.20	862.60	983.64	1000.16
E	Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
F	Interest on Working Capital (D*E)	64.02	73.60	90.57	103.28	105.02

Annual Fixed Charges of the 2019-24 Tariff Period

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

Particulars		2019-20	2020-21	2021-22	2022-23	2023-24
(₹ in lakh)						
	Depreciation	285.30	582.90	1137.27	1497.81	1579.05
	Interest on Loan	258.29	543.93	1059.74	1333.35	1286.50
	Return on Equity	1291.78	1601.61	2117.87	2362.96	2382.41
	O&M Expenses	835.68	865.74	895.80	926.86	959.93
	Interest on Working Capital	64.02	73.60	90.57	103.28	105.02
	Total	2735.07	3667.77	5301.26	6224.27	6312.91

Filing Fee and Publication Expenses

96. 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

97. The Petitioner has claimed licence fee and RLDC fee. UPPCL has submitted that license fee is onus of the Petitioner. In response, the Petitioner has submitted that licence fee may be allowed to be recovered separately from the Respondents in terms of Regulation 70 of the 2019 Tariff Regulations. The fees and charges to be paid by the Petitioner as ISTS licensee (deemed ISTS licensee) under the Central Electricity Regulatory Commission (Fees and Charges of RLDC and other matters) Regulations



as amended from time to time shall also be recoverable from DICs as provided under Regulation 70(3) of 2019 Tariff Regulations.

98. We have considered the submissions of the Petitioner and UPPCL. 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 Regulation 70(3) of the 2019 Tariff Regulations for 2019-24 tariff period.

Goods and Services Tax

99. 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.

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

Security Expenses

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

102. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for 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 Commission vide order dated 3.8.2021 in Petition No. 260/MP/2020 approved security expenses from 1.4.2019 to 31.3.2024. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Accordingly, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming overall security expenses and consequential IWC has become infructuous.

Capital Spares

103. 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

104. With effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the provisions of the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of the transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and Sharing Regulations and shall be recovered from the concerned DICs through Bills under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection and disbursement of the transmission charges for subsequent period shall be governed in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

105. **To summarise:**

- a) The trued-up AFC approved in respect of the transmission asset for 2014-19 tariff period are as follows:



(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2479.01	2733.63	2776.91	2830.17	3113.23

b) AFC approved in respect of the transmission asset for 2019-24 tariff period in this order are as follows:

(₹ in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
2735.07	3667.77	5301.26	6224.27	6312.91

106. Annexure-I, Annexure-II and Annexure-III given hereinafter form part of the order.

107. This order disposes of Petition No. 121/TT/2020 in terms of above discussions and findings.

sd/-
(P. K. Singh)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson



Annexure-I

(₹ in lakh)

Equipment to be Replaced / Refurbished	ACE approved vide order dated 20.9.2016 in Petition No. 543/TT/2014	ACE Claim in 2014-19					ACE projected in 2019-24					Total ACE	Decapitalisation							
		2014-15	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2015-16	2019-20		2020-21	2021-22	2022-23	2023-24				
BTB HVDC Valve Hall Equipment	A	23492.50	0.00	0.00	0.00	0.00	10600.00	9837.76	1900.00	0.00	22337.76	0.00	0.00	0.00	2305.65	1135.48	0.00			
Replacement of thyristors per Octuple valves (192 thyristors each) for 03 valves HVDC block		4500.00	0.00	0.00	0.00	0.00	10600.00	9837.76	1900.00	0.00	22337.76	0.00	0.00	0.00	513.56	256.77	0.00			
Replacement of thyristors control units per Octuple valves (192 thyristors each) for 03 valves per HVDC Block		3258.02	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	371.82	185.91	0.00
Replacement of sunbber capcitor per ocatuple value (192) thyristors each-for 03 valves per HVDC Block		2658.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	303.34	151.67	0.00
Optical fibres, one set per valve hall per HVDC Block		828.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	70.87	70.87	0.00
Valve cooling system-Replacement of valve cooling system with modern type of two circuit system with adicabatic coolers		2000.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	147.22	147.22	0.00
Replacement of cooling pipes per Octuple valves (192 thyristors each) for 03 valves as per HVDC Block		1068.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	121.88	60.94	0.00
Replacement of valves arrestor in HVDC valves Hall Block-I & Block-II		960.48	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	49.85	16.62	0.00
Electronic unit for DOCCT		740.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	722.44	240.81	0.00
Valve Hall Ventilation-Replacement of ventilation system alongwith introduction of Differential Pressure Sensor for effective monitoring & control		680.00	0.00	0.00	0.00	0.00				0.00		0.00	0.00	0.00	0.00	0.00	0.00	4.67	4.67	0.00
HVDC control & protection including SCADA system	B	6800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	921.15	0.00				



Equipment to be Replaced / Refurbished		ACE approved vide order dated 20.9.2016 in Petition No. 543/TT/2014	ACE Claim in 2014-19			ACE projected in 2019-24					Total ACE	Decapitalisation					
			2014-15	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		2015-16	2019-20	2020-21	2021-22	2022-23	2023-24
Converter transformer and smothing reactor bushing	C	6521.99	0.00	0.00	2024.86	196.14	0.00	1694.24	342.64	0.00	4257.88	0.00	0.00	0.00	320.67	117.45	0.00
Supply of converter transformer complete		3500.00	0.00	0.00	1805.54	196.14	0.00	276.32	0.00	0.00	2278.00	0.00	0.00	0.00	92.70	0.00	0.00
Supply of Secondary bushing for smoothing reactor type: GEKTI 450/75-AC 3150		1430.00	0.00	0.00	0.00	0.00	0.00	813.49	203.37	0.00	1016.86	0.00	0.00	0.00	153.47	46.04	0.00
Supply of 400 kV bushing Type: GOE 1800;1360-2500-0.6-ABL		700.00	0.00	0.00	0.00	0.00	0.00	557.10	139.27	0.00	696.37	0.00	0.00	0.00	68.31	68.31	0.00
Complete overhauling of OLTC of all converter transformer		891.99	0.00	0.00	219.32	0.00	0.00	47.33	0.00	0.00	266.65	0.00	0.00	0.00	6.19	3.10	0.00
Smoothing Reactor	D	275.00	0.00	0.00	0.00	0.00	0.00	0.00	233.64	25.96	259.60	0.00	0.00	0.00	0.00	40.75	10.19
Supply of Secondary bushing for smoothing reactor type: GEKTI 450/75-DC 3700		275.00	0.00	0.00	0.00	0.00	0.00	0.00	233.64	25.96	269.60	0.00	0.00	0.00	0.00	40.75	10.19
Switchyard Equipment	E	3348.04		60.68	736.65	828.41	562.84	11.21	744.07	82.67	3026.53	0.00	226.80	48.37	0.00	115.86	46.35
Refurbishment of 400 kV CB		770.00	0.00	0.00	0.00	0.00	0.00	0.00	744.07	82.67	826.74	0.00	0.00	0.00	0.00	115.86	46.35
Refurbishment of 400 kV Filter CB		1400.00	0.00	0.00	341.19	828.41	433.61	11.21	0.00	0.00	1614.42	0.00	214.12	35.69	0.00	0.00	0.00
Replacement of 400 kv pantograph isolator Type: RP 700,S&S make including earth switches		912.60	0.00						0.00	0.00		0.00			0.00	0.00	0.00
Replacement of 400 kv HCB isolator Type: RP 500,S&S make including earth switches		265.44	0.00	60.68	395.46	0.00	129.23	0.00	0.00	0.00	585.37	0.00	12.68	12.68	0.00	0.00	0.00
SUB TOTAL	F	33637.53	0.00	60.68	2761.51	1024.55	11162.84	11543.21	3220.35	108.63	29881.77	0.00	226.80	48.37	2626.32	1409.54	56.54
Smoothing Reactor		2264.77	2264.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2264.77	76.68	0.00	0.00	0.00	0.00	0.00
TOTAL (G)=(A+B+C+D+E+F)	G	35902.30	2264.77	60.68	2761.51	1024.55	11162.84	11543.21	3220.35	108.63	32146.54	76.68	226.80	48.37	2626.32	2330.69	56.54



(₹ in lakh)

New ACE projected in 2019-24		ACE Claim in 2014-19			ACE projected in 2019-24					Total ACE	Decapitalisation					
		2014-15	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		2015-16	2019-20	2020-21	2021-22	2022-23	2023-24
New ACE	H	0.00	0.00	0.00	0.00	5812.35	239.76	0.00	0.00	6052.11	0.00	0.00	3.57	11.17	0.00	0.00
Supply of converter transformer complete		0.00	0.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Replacement of Cts		0.00	0.00	0.00	0.00	73.67	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.00
Replacement of CVTs		0.00	0.00	0.00	0.00	21.67	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00
Replacement of Las		0.00	0.00	0.00	0.00	17.01	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00
Replacement of CBs		0.00	0.00	0.00	0.00	0.00	196.64	0.00	0.00	0.00	0.00	0.00	0.00	11.17	0.00	0.00
Replacement of isolator		0.00	0.00	0.00	0.00	0.00	43.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL (I-H)	I	0.00	0.00	0.00	0.00	5812.35	239.76	0.00	0.00	6052.11	0.00	0.00	3.57	11.17	0.00	0.00
GRAND TOTAL (J=G+I)	J	2264.77	60.68	2761.51	1024.55	16975.19	11782.97	3220.35	108.63	38198.65	76.68	226.80	51.94	2637.49	2330.69	56.54



Annexure-II (New Assets)

2014-19		ACE (₹ in lakh)							Annual Depreciation as per Regulations (Post completion of 12 years of useful life)					
Capital Cost	Capital Cost as on 1.4.2014/ COD (₹ in lakh)	2014-15	2015-16	2016-17	2017-18	2018-19	Allowed ACE (₹ in lakh)	Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station	0.00	2264.77	0.00	0.00	56.10	2606.08	4926.95	4926.95	5.28%	59.79	119.58	119.58	121.06	191.34
Total	0.00	2264.77	0.00	0.00	56.10	2606.08	4926.95	4926.95	Total (A)	59.79	119.58	119.58	121.06	191.34
Average Gross Block (₹ in lakh) (B)										1132.39	2264.77	2264.77	2292.82	3623.91
Weighted Average Rate of Depreciation (C)=(A/B)										5.28%	5.28%	5.28%	5.28%	5.28%



Annexure-III

2019-24		ACE (₹ in lakh)					Annual Depreciation as per the 2019 Tariff Regulations							
Capital Cost	Capital Cost as on 1.4.2019 (₹ in lakh)	2019-20	2020-21	2021-22	2022-23	2023-24	Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation	2019-20	2020-21	2021-22	2022-23	2023-24	
Sub-station	4926.95	952.94	10319.68	10679.45	2977.11	100.42	29956.54	5.28%	285.30	582.90	1137.27	1497.81	1579.05	
Total	4926.95	952.94	10319.68	10679.45	2977.11	100.42	29956.54	Total (A)	285.30	582.90	1137.27	1497.81	1579.05	
Average Gross Block (₹ in lakh) (B)									5403.42	11039.73	21539.30	28367.57	29906.34	
Weighted Average Rate of Depreciation (C)=(A/B)									5.28%	5.28%	5.28%	5.28%	5.28%	

