

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 351/TT/2020

Coram:

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

Date of Order: 17.10.2021

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 the 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of the 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for **Asset-I:** LILO of 400 kV D/C Baspa-Nathpa Jhakri Transmission Line at Wangtoo and **Asset-II:** 400 kV D/C Karcham-Wangtoo-Abdullapur Transmission Line (Quad Conductor) in Northern Region.

And in the matter of:

Jaypee Powergrid Limited,
'JA House', 63, Basant Lok, Vasant Vihar,
New Delhi-110057.

.....Petitioner

Versus

1. U. P. Power Corporation Limited,
Import Export & Payment Circle,
14th Floor, Shakti Bhawan Extension Building, 14, Ashok Marg,
Lucknow-226001.
2. AD Hydro Power Limited,
Bhilwara Towers, A-12, Sector-1, Noida-201301,
Uttar Pradesh.
3. Haryana Power Purchase Centre,
Shakti Bhawan, Energy Exchange,
Room No. 446, Top Floor, Sector-06,
Punchkula-134109.
4. Punjab State Power Corporation Limited,



Thermal Sheds, T 1-A, Thermal design, Near 22 No. Phatak,
Patiala-147001.

5. Himachal Sorang Power Private Limited,
901 B, 9th Floor, Time Tower, M.G. Road,
Gurgaon-122009.
6. Adani Power Limited,
3rd Floor, Achalaraj, Opp Mayor Bunglow, Law Garden,
Ahemdabad-380006.
7. Rajasthan Discoms Power Procurement Centre,
Shed No. 5/4, Vidyut Bhawan, Janpath, Jyoti Nagar,
Jaipur-302005.
8. Jaipur Vidyut Vitran Nigam Limited,
Vidyut Bhawan, Janpath, Jyoti Nagar,
Jaipur-302005.
9. Ajmer Vidyut Vitran Nigam Limited,
Vidyut Bhawan, Panchsheel Nagar, Makarwali Road,
Ajmer-305004.
10. Jodhpur Vidyut Vitran Nigam Limited,
New Power House, Industrial Area,
Jodhpur-342003.
11. Lanco Anpara Power Limited,
Plot No. 397, Udyog Vihar Phase-3,
Gurgaon-122016.
12. Lanco Green Power Private Limited,
Plot No. 397, Udyog Vihar Phase-III,
Gurgaon-122016.
13. Power Development Department,
Govt. of J&K, Srinagar.
SLDC Building, 1st Floor, Gladani Power House, Narwal,
Jammu.
14. North Central Railway,
DRM Office, Nawab Yusuf Road, Subedarganj,
Allahabad-211001.
15. Himachal Baspa Power Company Limited,
Sholtu Colony, P.O. Tapri-172104,
District Kinnaur (Himachal Pradesh).



16. BSES Yamuna Power Limited,
2nd Floor, B Block, Shakti Kiran Building, (Near Karkadooma Court),
New Delhi-110092.
 17. BSES Rajdhani Power Limited,
2nd Floor, B-Block, Behind Nehru Place Bus Terminal, Nehru Place,
New Delhi-110019.
 18. Tata Power Delhi Distribution Limited,
NDLP House, Hudson Lane, Kingsway Camp,
New Delhi-110009.
 19. New Delhi Municipal Corporation,
NDMC, Palika Kendra, Sansad Marg,
New Delhi-110001.
 20. Electricity Wing of Engineering Department,
Union Territory of Chandigarh, Electricity OP Circle,
Chandigarh-160011.
 21. PTC (Budhil), PTC India Limited,
2nd Floor, NBCC Tower, 15, Bhikaji Cama Place,
New Delhi-110066.
 22. PTC (Everest), PTC India Limited,
2nd Floor, NBCC Tower, 15 Bhikaji Cama Place,
New Delhi-110066.
 23. Uttrakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road, Near Balli Wali Chowk,
Dehradun-248001.
 24. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building-II,
Shimla-171004.
 25. Power Grid Corporation of India Limited,
HVDC Dadri & HVDC Rihand,
"Saudamini" Plot No-2, Sector-29,
Gurgaon-122001(Haryana).
-Respondent(s)**

For Petitioner : Shri Abhinav Mishra, Advocate, JPL

For Respondents : None



ORDER

The Petitioner, Jaypee Powergrid Limited (JPL), a transmission licensee, has filed the present petition for trueing up of transmission tariff of the 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 the period from 1.4.2019 to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of the following assets (hereinafter referred to as “the transmission assets”) under the Transmission System associated with evacuation of power from Karcham Wangtoo Hydro Electric Project (HEP) located in the State of Himachal Pradesh to Central Transmission Utility’s (CTU/ PGCIL) Abdullapur Sub-station located in the State of Haryana (hereinafter referred to as “the transmission system”)for **Asset-I:** LILO of 400 kV D/C Baspa-Nathpa Jhakri Transmission Line at Wangtoo and **Asset-II:** 400 kV D/C Karcham Wangtoo-Abdullapur Transmission Line (Quad Conductor).

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

“a) That this Hon’ble Commission may be pleased to admit the petition and true-up the transmission tariff of LILO of 400 KV D/C Baspa-Nathpa Jhakri transmission line at Wangtoo (Asset-I) and 400 KV D/C Karcham-Wangtoo Abdullapur transmission line (Asset-II) for the period 01.04.2014 to 31.03.2019 which forms part of the Inter-State Transmission System , taking into account the submissions made herein above, in the forms and annexures filed herewith; and

b) That this Hon’ble Commission may be pleased to admit the petition and determine the Transmission Tariff of LILO of 400 KV D/C Baspa-Nathpa Jhakri transmission line at Wangtoo (Asset-I) and 400 KV D/C Karcham-Wangtoo Abdullapur transmission line (Asset-II) of the Petitioner for the Tariff Block FY 2019-24 which forms part of the Inter-State Transmission System , taking into account the submissions made herein above, in the forms and annexures filed herewith; and



c) That this Hon'ble Commission may be pleased to allow the Petitioner to recover filing fees of this Petition, license fees, charges for publication in newspapers, charges of RLDC and legal fees as more fully stated in the Petition; and

d) allow additions / alterations / changes / modifications to the Petition at a future date; and

e) pass such further order or orders as this Hon'ble Commission may deem fit and proper in the circumstances of the case.”

3. **Backdrop of the case**

a) The Petitioner is a joint venture company promoted by Jaiprakash Power Ventures Limited (74%) and Power Grid Corporation of India Limited (PGCIL) [26%] incorporated under the Companies Act, 1956 and was granted an *inter-State* transmission license by the Commission vide order dated 1.10.2007 in Petition No. 44/2007 for construction and maintenance of the transmission lines and facilities with respect to the transmission system.

b) The schedule attached to the afore-mentioned License No. 3/Transmission/CERC provided the details of transmission lines as follows:

- i. LILO of 400 kV D/C Baspa-Nathpa Jhakri Transmission Line at Wangtoo (**Asset-I** in this petition);
- ii. 400 kV D/C Karcham Wangtoo-Abdullapur Transmission Line (Quad conductor) [**Asset-II** in this petition]; and
- iii. 400/200 kV sub-station (Extension) (CTU) at Abdullapur.

c) The Feasibility *cum* Detailed Project Report for the transmission system was prepared by PGCIL during May 2007 followed by its approval by the Petitioner's company in its Board meeting held on 18.2.2008. The total estimated cost of the transmission system was ₹88198.00 lakh, including IDC of ₹8930.00 lakh (based on 4th Quarter 2006 price level) and the total estimated completion cost was ₹98100.00 lakh, including IDC of ₹9585.00 lakh.

d) The scope of work covered under the transmission system is broadly as follows:



Transmission Line:

- i. Karcham Wangtoo HEP-Abdullapur 400 kV D/C Transmissio Line (Quad Conductor): 230 kms (Snow Portion: 165 kms and Non-Snow Portion: 65 kms);
- ii. LILO of both circuit of Baspa-Nathpa Jhakri 400 kV D/C line (Triple Snow bird) at Karcham Wangtoo HEP: 4 kms

Sub-station:

- i. Abdullapur Sub-station (Ext.) (PG) 400 kV with 02 Numbers of 400 kV bays;
- ii. Karcham Wangtoo generation switchyard (Ext.) JKHCL with 02 Numbers of 80 MVAR Line Reactors.

e) The details of nomenclature of the transmission assets in previous orders are as follows:

Sr. No.	Nomenclature in order dated 14.6.2012 in Petition No. 37/TT/2011	Nomenclature in order dated 7.5.2015 in Petition No. 37/TT/2011	Nomenclature in order dated 22.5.2019 in Petition No. 217/TT/2017	Asset Combined vide order dated 25.5.2019 in Petition No. 217/TT/2017
1	LILO of 400 kV DC Baspa-Nathpa Jhakri transmission line	LILO of both circuit of Baspa-Nathpa Jhakri 400 kV DC line (Triple Snowbird) at Karcham Wangtoo HEP : 4 km as "Asset-I	Asset-I	Combined Asset (for determination of tariff 2014-19 tariff period)
2	Karcham Wangtoo Abdullapur 400 kV DC Quad transmission line (except LILO)	Karcham Wangtoo HEP-Abdullapur 400 kV DC T/L (Quad Conductor) along with associated bays at Abdullapur Sub-station: 230 km (Snow Portion 165 km and non-snow portion 65km) as "Asset-II"	Asset-II	

f) The scheduled Date of Commercial Operation (COD) of the transmission assets was 1.9.2011 against which Asset-I and Asset-II were put under commercial operation on 1.6.2011 and 1.4.2012 respectively. The time over-run of 7 months in Asset-II was condoned by the Commission vide order dated 7.5.2015 in Petition No. 37/TT/2011.

g) The transmission tariff of Asset-I and Asset-II for the period from their respective COD to 31.3.2014 was allowed vide order dated 7.5.2015 in Petition No. 37/TT/2011 whereby the Commission dis-allowed capital cost amounting to



₹876.64 lakh for Asset-I and ₹5976.91 lakh for Asset-II, totaling to ₹6853.55 lakh.

h) Aggrieved by the dis-allowance of capital cost by the Commission, the Petitioner had filed Review Petition No. 17/RP/2015 for review of the dis-allowance of capital costs, which was disposed of by the Commission vide order dated 24.2.2017 with observation that the said claim of the Petitioner will be considered at the time of truing up subject to submission of detailed justification along with supporting documents.

i) The tariff of Asset-I and Asset-II for the period from their respective COD to 31.3.2014 was trued-up [based on Additional Capital Expenditure (ACE) during the 2014-19 period] by the Commission vide order dated 22.5.2019 in Petition No. 217/TT/2017 in accordance with the 2009 Tariff Regulations.

j) Considering the submissions of the Petitioner as to the completion of the entire scope of work under the transmission system and further to the tariff forms submitted combining Asset-I and Asset-II into single asset, the transmission tariff for Combined Asset comprising of Asset-I and Asset-II for the 2014-19 tariff period was allowed by the Commission vide order dated 22.5.2019 in Petition No. 217/TT/2017.

k) Aggrieved by findings of the Commission in order dated 22.5.2019 pertaining to dis-allowance of certain amounts, the Petitioner has filed an appeal before the Appellate Tribunal for Electricity which is pending adjudication, as submitted by the Petitioner. The instant order will be subject to outcome of the said appeal filed by the Petitioner.

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



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

6. The hearing in this matter was held on 27.4.2021 through video conference and the order was reserved.

7. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 16.10.2019.

8. Having heard the learned counsel of the Petitioner and after perusal of the materials on record, we proceed to dispose of the petition.

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

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

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	5264.37	5313.21	5313.34	5313.37	5313.37
Interest on Loan	6930.75	6157.31	5407.94	4800.24	4052.27
Return on Equity	5869.48	5952.56	5952.71	5952.74	5968.47
Interest on Working Capital	435.52	421.41	404.84	391.55	375.42
O&M Expenses	356.86	368.64	380.79	393.53	406.60
Total	18856.98	18213.12	17459.62	16851.44	16116.13

10. The details of trued-up Interest on Working Capital (IWC) claimed by the Petitioner in respect of Combined Asset for the 2014-19 tariff period are as follows:

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	53.53	55.30	57.12	59.03	60.99



O&M expenses	29.74	30.72	31.73	32.79	33.88
Receivables	3142.83	3035.52	2909.54	2808.57	2686.02
Total Working Capital	3226.10	3121.54	2998.39	2900.39	2780.89
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	435.52	421.41	404.78	391.55	375.42

Capital Cost as on 1.4.2014

11. The Commission vide order dated 22.5.2019 in Petition No. 217/TT/2017 had allowed capital cost as on 31.3.2014 of ₹98845.63 lakh and capital cost as on 31.3.2019 of ₹100695.33 lakh including projected ACE during 2014-19 tariff period for determination of transmission tariff of the 2014-19 tariff period. The capital cost of Combined Asset has been calculated in accordance with Regulations 9(3) and 9(6) of 2014 Tariff Regulations and it is as follows:

Admitted Capital cost as on 31.3.2014	Admitted ACE during 2014-19					Admitted Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
98845.63	1844.54	4.03	1.13	0.00	0.00	100695.33

Additional Capital Expenditure

12. The Commission had allowed ACE during 2014-15 in respect of Asset-II vide order dated 22.5.2019 in Petition No. 217/TT/2017. ACE already allowed along with ACE incurred during 2015-16 and 2016-17 in respect of Combined Asset has been claimed by the Petitioner vide Auditor's Certificate as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Balance and Retention liabilities for works executed prior to cut-off date	1844.54	4.03	1.13	0.00	0.00

13. We have considered the submissions of the Petitioner. The cut-off date in respect of Combined Asset works out to be 31.3.2015. The Petitioner has claimed ACE on account of balance and retention payments towards liabilities for works



executed prior to cut-off date. Accordingly, ACE has been allowed for Combined Asset under Regulations 14(1)(i) and 14(3)(v) of the 2014 Tariff Regulations as follows:

(₹ in lakh)			
Particulars	Year	ACE	2014 Tariff Regulations
Balance and Retention Payments within cut-off date	2014-15	1844.54	14(1)(i)
Balance and Retention Payments beyond cut-off date for works executed prior to cut-off date	2015-16	4.03	14(3)(v)
	2016-17	1.13	
Total ACE allowed for the 2014-19 period		1849.70	

Capital Cost Considered as on 31.3.2019

14. In view of the above, the details of the approved capital cost for Combined Asset are as follows:

(₹ in lakh)		
Capital Cost (as on 31.3.2014)	ACE (2014-19)	Capital Cost (as on 31.3.2019)
98845.63	1849.70	100695.33*

*This is within Revised Cost Estimates of ₹101101.00 lakh as submitted by the Petitioner

15. The details of capital cost as on 31.3.2019 allowed for Combined Asset vide order dated 22.5.2019 in Petition No. 217/TT/2017, claimed by the Petitioner in the instant petition and trued up-in the instant order are as follows:

(₹ in lakh)			
Particulars	Capital cost (as on 1.4.2014)	ACE	Total Capital cost including ACE (as on 31.3.2019)
		2014-19	
Allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017	98845.63	1849.70	100695.33
Claimed by the Petitioner in the instant petition	98845.63	1849.70	100695.33
Approved after truing up in this order	98845.63	1849.70	100695.33



Debt-Equity Ratio

16. The debt-equity ratio of 70:30 as on COD and for ACE was admitted by the Commission vide order dated 22.5.2019 in Petition No. 217/TT/2017. The Petitioner has claimed debt-equity ratio of 70:30 as on 1.4.2014. Further, for the purpose of ACE, debt-equity ratio has been considered in accordance with Regulation 19(3) of the 2014 Tariff Regulations. The details of debt-equity ratio in respect of Combined Asset as on 1.4.2014 and 31.3.2019 are as follows:

Funding	Capital Cost (as on 1.4.2014)		Capital Cost (as on 31.3.2019)	
	Amount (₹ in lakh)	(in %)	Amount (₹ in lakh)	(in %)
Debt	69191.94	70.00	70486.73	70.00
Equity	29653.69	30.00	30208.60	30.00
Total	98845.63	100.00	100695.33	100.00

Depreciation

17. The depreciation has been allowed as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. Combined Asset will complete 12 years during 2024-25 and, thus, the depreciation has been calculated annually based on Straight Line Method at the rates specified in 2014 Tariff Regulations.

18. Depreciation has been allowed considering capital expenditure as on 1.4.2014 and approved ACE during the 2014-19 tariff period. The Gross Block during the 2014-19 tariff period has been depreciated at Weighted Average Rate of Depreciation (WAROD). WAROD at Annexure-I has been worked out after taking into account the depreciation rates of the assets as specified in the 2014 Tariff Regulations and the trued-up depreciation allowed for the 2014-19 tariff period is as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	98845.63	100690.17	100694.20	100695.33	100695.33
Additional Capitalisation	1844.54	4.03	1.13	0.00	0.00
Closing Gross Block	100690.17	100694.20	100695.33	100695.33	100695.33
Average Gross Block	99767.90	100692.19	100694.77	100695.33	100695.33
Weighted Average Rate of Depreciation (WAROD) (in %)	5.2743	5.2743	5.2743	5.2743	5.2743
Balance useful life of the asset at the beginning of the year (Year)	33	32	31	30	29
Lapsed life of the asset at the beginning of the year (Year)	2	3	4	5	6
Aggregated Depreciable Value	89734.17	90566.02	90568.35	90568.85	90568.85
Depreciation during the year	5262.00	5310.81	5310.94	5310.97	5310.97
Cumulative Depreciation at the end of the year	15449.75	20760.56	26071.50	31382.48	36693.45
Remaining Aggregated Depreciable Value at the beginning of the Year	79546.42	75116.27	69807.78	64497.35	59186.38

19. The details of depreciation in respect of Combined Asset as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 22.5.2019 in Petition No. 217/TT/2017	5262.00	5310.81	5310.94	5310.97	5310.97
Claimed by the Petitioner in the instant petition	5264.37	5313.21	5313.34	5313.37	5313.37
Approved after true-up in this order	5262.00	5310.81	5310.94	5310.97	5310.97

Interest on Loan (IoL)

20. IoL has been worked out as per the provisions of Regulation 26 of the 2014 Tariff Regulations as follows:

- a) Gross amount of loan, repayment of instalments and rate of interest on actual average loan have been considered; and



- b) The yearly repayment for the 2014-19 tariff period has been considered to be equal to the depreciation allowed for that period.

21. The Weighted Average Rate of Interest on actual loan has been submitted by the Petitioner and claimed for change in interest rates prevailing as on 1.4.2019 for respective loans. The change in interest rate is due to floating rate of interest applicable to be claimed/ adjusted over a period of 05 years directly from the beneficiaries. The Petitioner has also submitted calculation of IoL on normative loan.

22. We have considered the submissions of the Petitioner and accordingly IoL has been calculated in accordance with Regulation 26 of the 2014 Tariff Regulations.

The trued-up IoL allowed in respect of Combined Asset is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	69191.94	70483.12	70485.94	70486.73	70486.73
Cumulative Repayments up to Previous Year	10187.75	15449.75	20760.56	26071.50	31382.48
Net Loan-Opening	59004.19	55033.36	49725.38	44415.23	39104.25
Addition due to Additional Capitalization	1291.18	2.82	0.79	0.00	0.00
Repayment during the year	5262.00	5310.81	5310.94	5310.97	5310.97
Net Loan-Closing	55033.36	49725.38	44415.23	39104.25	33793.28
Average Loan	57018.78	52379.37	47070.30	41759.74	36448.77
Weighted Average Rate of Interest on Loan (in %)	12.1585	11.7580	11.4895	11.5002	11.1198
Interest on Loan	6932.63	6158.75	5408.14	4802.44	4053.02

23. The details of IoL in respect of Combined Asset as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 22.5.2019 in Petition No. 217/TT/2017	6932.63	6158.75	5408.14	4718.85	4118.71
Claimed by the Petitioner in the instant petition	6930.75	6157.31	5407.94	4800.24	4052.27



Approved after true-up in this order	6932.63	6158.75	5408.14	4802.44	4053.02
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Return on Equity (RoE)

24. As per Form-3, the Petitioner has submitted MAT rates applicable during the 2014-19 period. RoE has been worked out by considering year wise MAT rate as submitted by the Petitioner in accordance with the 2014 Tariff Regulations. The Petitioner has claimed differential tariff on account of the trued-up RoE based on effective rate calculated on completion of Income tax assessment/ re-assessment for 2014-15, 2015-16, 2016-17, 2017-18 and 2018-19 on receipt of respective assessment orders, directly from the beneficiaries, on year-to-year basis as provided under the 2014 Tariff Regulations.

25. Accordingly, RoE allowed for Combined Asset is as follows:

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	29653.69	30207.05	30208.26	30208.60	30208.60
Addition due to Additional Capitalization	553.36	1.21	0.34	0.00	0.00
Closing Equity	30207.05	30208.26	30208.60	30208.60	30208.60
Average Equity	29930.37	30207.66	30208.43	30208.60	30208.60
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
Tax Rate applicable (in %)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (Pre-tax) (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity (Pre-tax)	5869.35	5952.42	5952.57	5952.60	5968.62

26. The details of RoE in respect of Combined Asset as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 22.5.2019 in Petition No.	5869.35	5923.72	5923.87	5923.91	5923.91



217/TT/2017					
Claimed by the Petitioner in the instant petition	5869.48	5952.56	5952.71	5952.74	5968.47
Approved after true-up in this order	5869.35	5952.42	5952.57	5952.60	5968.62

Operation & Maintenance Expenses (O&M Expenses)

27. The details of the O&M Expenses claimed by the Petitioner for the transmission system is as per provisions of Regulation 29(4)(a) of the 2014 Tariff Regulations and the same have been allowed for the purpose of tariff computation as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses Calculation (Transmission Lines)					
Asset-I: LILO of 400 kV D/C Baspa-Nathpa Jhakri transmission line (D/C Twin and Triple Conductor)					
Line Length (km)	4.00	4.00	4.00	4.00	4.00
Norms (₹ lakh/km)	0.707	0.731	0.755	0.780	0.806
Sub-total (A) (₹ in lakh)	2.828	2.924	3.020	3.120	3.224
Asset-II: Karcham Wangtoo-Abdullapur 400 kV D/C Quad transmission line (Double Circuit Bundled conductor with four or more sub-conductors)					
Line Length (km)	219.80	219.80	219.80	219.80	219.80
Norms (₹ lakh/km)	1.062	1.097	1.133	1.171	1.210
Sub-total (B) (₹ in lakh)	233.428	241.121	249.033	257.386	265.958
O&M Expenses Calculation (Sub-stations)					
400 kV Abdullapur Sub-station					
Number of Bays	2	2	2	2	2
Norms (₹ lakh/bay)	60.30	62.30	64.37	66.51	68.71
Sub-total (C) (₹ in lakh)	120.60	124.60	128.74	133.02	137.42
Total (A+B+C) (₹ in lakh)	356.86	368.65	380.79	393.53	406.60

28. The details of O&M Expenses in respect of the transmission system as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 22.5.2019 in Petition No. 217/TT/2017	356.86	368.64	380.79	393.53	406.60
Claimed by the Petitioner in the instant petition	356.86	368.64	380.79	393.53	406.60
Approved after true-up in this order	356.86	368.64	380.79	393.53	406.60

Interest on Working Capital

29. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and the trued-up IWC allowed for Combined Asset for the 2014-19 tariff period is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
WC for Maintenance Spares (15% of annual O&M expenses)	53.53	55.30	57.12	59.03	60.99
WC for O&M Expenses (equivalent to 1 month's O&M expenses)	29.74	30.72	31.73	32.79	33.88
WC for Receivables (Equivalent to 2 months of annual fixed cost/ annual transmission charges)	3142.72	3035.33	2909.54	2808.52	2685.77
Total Working Capital	3225.99	3121.35	2998.39	2900.34	2780.64
Rate of Interest on Working Capital (in %)	13.50	13.50	13.50	13.50	13.50
Interest of Working Capital	435.51	421.38	404.78	391.55	375.39

30. The details of IWC in respect of Combined Asset as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 22.5.2019 in Petition No. 217/TT/2017	435.51	420.72	404.12	388.96	375.87
Claimed by the Petitioner in the instant petition	435.52	421.41	404.84	391.55	375.42
Approved after true-up in this order	435.51	421.38	404.78	391.55	375.39



Approved Annual Fixed Charges for the 2014-19 Tariff Period

31. The trued-up Annual Fixed Charges (AFC) allowed for Combined Asset for the 2014-19 tariff period are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	5262.00	5310.81	5310.94	5310.97	5310.97
Interest on Loan	6932.63	6158.75	5408.14	4802.44	4053.02
Return on Equity	5869.35	5952.42	5952.57	5952.60	5968.62
O&M expenses	356.86	368.64	380.79	393.53	406.60
Interest on Working Capital	435.51	421.38	404.78	391.55	375.39
Total	18856.34	18212.00	17457.23	16851.10	16114.59

32. Accordingly, AFC in respect of Combined Asset as allowed vide order dated 22.5.2019 in Petition No. 217/TT/2017, 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 3.11.2017 in Petition No. 217/TT/2017	18856.34	18182.64	17427.87	16736.22	16136.06
Claimed by the Petitioner in the instant petition	18856.98	18213.12	17459.62	16851.44	16116.13
Approved after true-up in this order	18856.34	18212.00	17457.23	16851.10	16114.59

DETERMINATION OF ANNUAL FIXED CHARGES FOR THE 2019-24 TARIFF PERIOD

33. The Petitioner has claimed the transmission charges for Combined Asset for the 2019-24 tariff period as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	5313.55	5313.73	5313.73	5313.73	5313.73
Interest on Loan	3463.02	2872.75	2282.23	1691.92	1101.24
Return on Equity	5968.67	5968.87	5968.87	5968.87	5968.87
Interest on Working Capital	251.38	242.55	233.73	224.94	216.16



O&M Expenses	358.40	370.89	383.91	397.45	411.30
Total	15355.02	14768.79	14182.47	13596.91	13011.30

34. The Petitioner has claimed IWC for Combined Asset for the 2019-24 tariff period as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Maintenance Spares (15% of O&M Expenses)	53.76	55.63	57.59	59.62	61.70
O&M Expenses (O&M Expenses for 1 month)	29.87	30.91	31.99	33.12	34.28
Receivables (Equivalent to 45 days of annual fixed cost)	1919.38	1846.10	1772.81	1699.61	1626.41
Total Working Capital	2003.01	1932.64	1862.39	1792.35	1722.39
Rate of Interest (in %)	12.55	12.55	12.55	12.55	12.55
Interest on Working Capital	251.38	242.55	233.73	224.94	216.16

Capital Cost

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

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

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

- (a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*
- (d) *Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*
- (e) *Capitalised initial spares subject to the ceiling rates in accordance with these regulations;*
- (f) *Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*
- (g) *Adjustment of revenue due to sale of infirm power in excess of fuel cost*



prior to the date of commercial operation as specified under Regulation 7 of these regulations;

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

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

- (a) Capital cost admitted by the Commission prior to 1.4.2019 duly tried up by excluding liability, if any, as on 1.4.2019;
- (b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
- (c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;
- (d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and
- (f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

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

- (a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and
- (b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Viduyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.



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

- (a) *The assets forming part of the project, but not in use, as declared in the tariff petition;*
- (b) *De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:*

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

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

- (c) *In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;*
- (d) *Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and*
- (e) *Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.”*

36. The trued-up capital cost of ₹100695.33 lakh as on 31.3.2019 as admitted in this order is considered as opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

37. The Petitioner has not projected any ACE during the 2019-24 tariff period. However, the remaining un-discharged liability of ₹6.75 lakh after cut-off date has been considered as discharged during 2019-20 under Regulation 25(1)(d) of the 2019 Tariff Regulations. Accordingly, ACE of ₹6.75 lakh is allowed during the 2019-24 tariff period, which is subject to truing-up. Accordingly, the capital cost of Combined Asset considered for the 2019-24 tariff period, subject to truing-up, is as follows:



(₹ in lakh)

Capital Cost (as on 1.4.2019)	ACE (2019-24)	Capital Cost (as on 31.3.2024)
100695.33	6.75	100702.08

Debt-Equity Ratio

38. Regulations 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.”

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

Funding	Capital Cost (as on 1.4.2019) (₹ in lakh)	(in %)	Capital Cost (as on 31.3.2024) (₹ in lakh)	(in %)
Debt	70486.73	70.00	70491.46	70.00
Equity	30208.60	30.00	30210.62	30.00
Total	100695.33	100.00	100702.08	100.00

Depreciation

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

“33. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.



(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-I to these regulations for the asset of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the asset.

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

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

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

41. Depreciation has been dealt with in accordance with Regulation 33 of the 2019 Tariff Regulations. E-COD of the Combined Asset was 24.3.2012. Accordingly, it will complete 12 years during 2024-25. Depreciation has been calculated annually based on Straight Line Method on the admitted capital expenditure up to 31.3.2024.



42. The calculation of WAROD for the 2019-24 period is at Annexure-II. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. The depreciation allowed for Combined Asset for the 2019-24 tariff period is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	100695.33	100702.08	100702.08	100702.08	100702.08
Additional Capitalisation	6.75	0.00	0.00	0.00	0.00
Closing Gross Block	100702.08	100702.08	100702.08	100702.08	100702.08
Average Gross Block	100698.71	100702.08	100702.08	100702.08	100702.08
Weighted Average Rate of Depreciation (WAROD) (in %)	5.2743	5.2743	5.2743	5.2743	5.2743
Balance useful life of the asset at the beginning of the year (Year)	28	27	26	25	24
Lapsed life of the asset at the beginning of the year (Year)	7	8	9	10	11
Aggregated Depreciable Value	90628.83	90631.87	90631.87	90631.87	90631.87
Depreciation during the year	5311.15	5311.33	5311.33	5311.33	5311.33
Cumulative Depreciation at the end of the year	42004.60	47315.93	52627.26	57938.59	63249.92
Remaining Aggregated Depreciable Value at the beginning of the Year	53935.39	48627.27	43315.94	38004.61	32693.28

Interest on Loan

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

“32. Interest on loan capital: (1) *The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

(2) *The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.*

(3) *The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of asset, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered*



from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(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”.

44. IoL is allowed on the basis of the rate prevailing as on 1.4.2019. IoL is allowed considering all the loans submitted in Form 9C. The details of IoL allowed for Combined Asset are as follows:

	(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	70486.73	70491.46	70491.46	70491.46	70491.46
Cumulative Repayments up to Previous Year	36693.45	42004.60	47315.93	52627.26	57938.59
Net Loan-Opening	33793.28	28486.86	23175.53	17864.20	12552.87
ACE	4.73	0.00	0.00	0.00	0.00
Repayment during the year	5311.15	5311.33	5311.33	5311.33	5311.33
Net Loan-Closing	28486.86	23175.53	17864.20	12552.87	7241.54
Average Loan	31140.07	25831.19	20519.86	15208.53	9897.20
Weighted Average Rate of Interest on Loan (in %)	11.121	11.123	11.125	11.131	11.139
Interest on Loan	3463.14	2873.13	2282.88	1692.84	1102.42

Return on Equity

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

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

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



hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:

Provided that return on equity in respect of Additional Capitalization after cut-off date beyond the original scope excluding Additional Capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

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

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

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

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

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

“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.”

46. Regulations 30 and 31 of the 2019 Tariff Regulations provide for the grossing up of RoE with the effective tax rate for the purpose of RoE. Accordingly, MAT rate of 21.55% applicable during 2018-19 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. Accordingly, RoE allowed for Combined Asset for the 2019-24 tariff period is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	30208.60	30210.62	30210.62	30210.62	30210.62
ACE	2.03	0.00	0.00	0.00	0.00
Closing Equity	30210.62	30210.62	30210.62	30210.62	30210.62
Average Equity	30209.61	30210.62	30210.62	30210.62	30210.62



Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (Pre-tax)	18.782	18.782	18.782	18.782	18.782
Return on Equity (Pre-tax)	5673.97	5674.16	5674.16	5674.16	5674.16

Operation & Maintenance Expenses

47. Regulation 35(3)(a) of the 2019 Tariff Regulations provides as follows:

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
<i>Norms for sub-station Bays (₹ Lakh per bay)</i>					
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
<i>Norms for Transformers (₹ Lakh per MVA)</i>					
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
<i>Norms for AC and HVDC lines (₹ Lakh per km)</i>					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more)	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



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
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	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh)	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;*
- ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;*
- iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);*
- iv. the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and*
- vi. the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.*



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

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

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

48. The O&M Expenses claimed by the Petitioner for the transmission system are in accordance with Regulation 35(3) of the 2019 Tariff Regulations. Accordingly, the O&M Expenses allowed for the transmission system are as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses Calculation (Transmission Lines)					
Asset-I: LILO of 400 kV D/C Baspa-Nathpa Jhakri transmission line (D/C Twin and Triple Conductor)					
Line Length (km)	4.00	4.00	4.00	4.00	4.00
Norms (₹ lakh/km)	0.881	0.912	0.944	0.977	1.011
Sub-total (A) (₹ in lakh)	3.524	3.648	3.776	3.908	4.044
Asset-II: Karcham Wangtoo-Abdullapur 400 kV D/C Quad transmission line (Double Circuit Bundled conductor with four or more sub-conductors)					
Line Length (km)	219.80	219.80	219.80	219.80	219.80
Norms (₹ lakh/km)	1.322	1.368	1.416	1.466	1.517
Sub-total (B) (₹ in lakh)	290.576	300.686	311.237	322.227	333.437
O&M Expenses Calculation (Sub-stations)					
400 kV Abdullapur substation					
Number of Bays	2	2	2	2	2
Norms (₹ lakh/bay)	32.15	33.28	34.45	35.66	36.91
Sub-total (C) (₹ in lakh)	64.30	66.56	68.90	71.32	73.82
Total (A+B+C) (₹ in lakh)	358.40	370.89	383.91	397.45	411.30

Interest on Working Capital

49. Regulation 34(1)(c), 34(3), 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;”

50. The Petitioner has submitted that it has computed IWC for the 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.55%. 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 2020-2021 and from 2021-22 onwards as 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon are as follows:



Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
WC for Maintenance Spares (Equivalent to 15% of annual O&M Expenses)	53.76	55.63	57.59	59.62	61.70
WC for O&M Expenses (Equivalent to 1 month's O&M expenses)	29.87	30.91	31.99	33.12	34.28
WC for Receivables (Equivalent to 45 days of annual fixed cost)	1849.13	1780.21	1706.41	1634.44	1558.14
Total Working Capital	1932.75	1866.76	1795.99	1727.18	1654.11
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	232.90	210.01	188.58	181.35	173.68

Annual Fixed Charges for the 2019-24 Tariff Period

51. The transmission charges allowed for Combined Asset for the 2019-24 tariff period are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	5311.15	5311.33	5311.33	5311.33	5311.33
Interest on Loan	3463.14	2873.13	2282.88	1692.84	1102.42
Return on Equity	5673.97	5674.16	5674.16	5674.16	5674.16
O&M Expenses	358.40	370.89	383.91	397.45	411.30
Interest on Working Capital	232.90	210.01	188.58	181.35	173.68
Total	15039.56	14439.52	13840.86	13257.13	12672.89

Filing Fee and Publication Expenses

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



Licence Fee and RLDC Fees and Charges

53. The Petitioner shall be entitled for reimbursement of license fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for the 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.

Sharing of Transmission Charges

54. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission system were governed by the 2010 Sharing Regulations. With effect from 1.11.2020, sharing of transmission charges are governed by the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and 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 transmission charges for subsequent period shall be recovered in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

55. To summarise:

- a) The trued-up AFC approved for Combined Asset for the 2014-19 tariff period are as follows:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
18856.34	18212.00	17457.23	16851.10	16114.59

- b) AFC allowed for Combined Asset for the 2019-24 tariff period in this order are as follows:

(₹ in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
15039.56	14439.52	13840.86	13257.13	12672.89



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

57. This order disposes of Petition No. 351/TT/2020 in terms of the above discussions and findings.

sd/-
(P.K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson



Annexure-I

2014-19 Capital Expenditure	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE ** (₹ in lakh)			Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
		2014-15	2015-16	2016-17			2014-15 (₹ in lakh)	2015-16 (₹ in lakh)	2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)
Freehold Land	63.27	-	-	-	63.27	-	-	-	-	-	-
Leasehold Land	0.00	-	-	-	0.00	3.34%	0.00	0.00	0.00	0.00	0.00
Building & Other Civil Works	191.98	-	-	-	191.98	3.34%	6.41	6.41	6.41	6.41	6.41
Transmission Line	97077.83	1844.54	4.03	1.13	98927.53	5.28%	5174.41	5223.21	5223.34	5223.37	5223.37
Sub-Station Equipment	1386.42	-	-	-	1386.42	5.28%	73.20	73.20	73.20	73.20	73.20
PLCC	126.13	-	-	-	126.13	6.33%	7.98	7.98	7.98	7.98	7.98
TOTAL	98845.63	1844.54	4.03	1.13	100695.33		5262.00	5310.81	5310.94	5310.97	5310.97
** No ACE during 2017-18 and 2018-19						Average Gross Block (₹ in lakh)	99767.90	100692.19	100694.77	100695.33	100695.33
						Weighted Average Rate of Depreciation (WAROD)	5.2743%	5.2743%	5.2743%	5.2743%	5.2743%



Annexure-II

2019-24 Capital Expenditure	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	ACE (₹ in lakh)		Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
		2019-20	2020-24			2014-15 (₹ in lakh)	2015-16 (₹ in lakh)	2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)
Freehold Land	63.27	-	-	63.27	-	-	-	-	-	-
Leasehold Land	0.00	-	-	0.00	3.34%	0.00	0.00	0.00	0.00	0.00
Building & Other Civil Works	191.98	-	-	191.98	3.34%	6.41	6.41	6.41	6.41	6.41
Transmission Line	98927.53	6.75	-	98927.53	5.28%	5223.55	5223.73	5223.73	5223.73	5223.73
Sub-Station Equipment	1386.42	-	-	1386.42	5.28%	73.20	73.20	73.20	73.20	73.20
PLCC	126.13	-	-	126.13	6.33%	7.98	7.98	7.98	7.98	7.98
TOTAL	100695.33	6.75	-	100702.08		5311.15	5311.33	5311.33	5311.33	5311.33
Average Gross Block (₹ in lakh)						100698.71	100702.08	100702.08	100702.08	100702.08
Weighted Average Rate of Depreciation (WAROD)						5.2743%	5.2743%	5.2743%	5.2743%	5.2743%

