

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 52/TT/2020

Coram:

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

Date of Order : 04.06.2020

In the Matter of:

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999 and truing up of transmission tariff of 2014-19 period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2019 of transmission assets associated under System Strengthening-IV in Eastern Region consisting of **Asset-A:** 400 kV, 125 MVAR Bus Reactor along with associated bays at Patna Sub-station; **Asset B:** 400 kV, 125 MVAR Bus Reactor along with associated bays at Ranchi; **Asset C:** 160 MVA Transformer (1st) and associated bays at Malda Sub-station; **Asset D:** 160MVA Transformer (2nd) and associated bays at Malda Sub-station; **Asset E:** 01 no. 400 kV bay at Malda Sub-station; **Asset F:** 160 MVA Transformer and associated bays at 220/132 kV Birpara Sub-station; **Asset G:** 160 MVA Transformer and associated bays at 220/132 kV Siliguri Sub-station under ERSS-IV project in Eastern Region.

And in the Matter of:

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

.....Petitioner

Versus

1. Bihar State Power (holding) Company Ltd
(formerly Bihar State Electricity Board -BSEB)
Vidyut Bhavan, Bailey Road, Patna – 800 001
2. West Bengal State Electricity Distribution Company Limited
Bidyut Bhawan, Bidhan Nagar
Block DJ, Sector-II, Salt Lake city
Calcutta - 700 091



3. Grid Corporation of Orissa Ltd.
Shahid Nagar, Bhubaneswar - 751 007
4. Jharkhand State Electricity Board
in front of Main Secretariat
Doranda, Ranchi - 834002
5. Damodar Valley Corporation
DVC Tower, Maniktala
Civic Centre, VIP road, Calcutta - 700 054
6. Power Department
Government of Sikkim,
Gangtok - 737 101

....Respondent(s)

Parties present:

For Petitioner: Shri A.K. Verma, PGCIL
Shri Amit Yadav, PGCIL

For Respondent: Shri Abhishek Vikas, Advocate, BSPHCL
Shri Navin Prakash, Advocate, BSPHCL
Shri Umang Anand, BSPHCL
Shri J.B. Nidhi, BSPHCL

ORDER

The present petition has been filed by Power Grid Corporation of India Limited (hereinafter referred to as “the Petitioner”), a deemed transmission licensee, for truing up of capital expenditure of the period from 1.4.2014 to 31.3.2019 under Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) and for determination of tariff under Regulation 8 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for the period from 1.4.2019 to 31.3.2024 in respect of **Asset-A:** 400 kV, 125 MVAR Bus Reactor along with associated bays at Patna Sub-station; **Asset B:** 400 kV, 125 MVAR Bus Reactor along with associated bays at Ranchi; **Asset C:** 160 MVA Transformer (1st) and associated bays at Malda Sub-



station; **Asset D:** 160MVA Transformer (2nd) and associated bays at Malda Sub-station; **Asset E:** 01 no. 400 kV bay at Malda Sub-station,; **Asset F:** 160 MVA Transformer and associated bays at 220/132 kV Birpara Sub-station; **Asset G:** 160 MVA Transformer and associated bays at 220/132 kV Siliguri Sub-station (hereinafter collectively referred to as "the transmission assets/Combined Asset") under System Strengthening - IV in Eastern Region (hereinafter referred to as "the transmission project").

2. The Petitioner has made the following prayers:

"i. Approve the trued-up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition.

ii. Approve the Completion cost and additional capitalization incurred during 2014-19.

iii. Allow the Petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2014 and Tariff regulations 2019 for respective block.

iv. 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.

v. 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.

vi. 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.

vii. Allow the Petitioner to claim the capital spares at the end of tariff block as per actual.

viii. Allow the Petitioner to claimed initial spares project as whole.



ix. Allow the Petitioner to file a separate petition before Commission for claiming the overall security expenses and consequential IOWC on that security expenses.

x. Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.

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

Background

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

a. The investment approval for the transmission project was accorded by the Board of Directors of the Petitioner company vide letter dated 13.7.2011 for ₹6036 lakh including IDC of ₹245 lakh (based on 2nd Quarter, 2011 price level). The scope of work covered broadly includes:

Sub-station

- i. Patna Bay (400 kV)
- ii. Ranchi Bay (400 kV)
- iii. Malda ICT-I (132 kV)
- iv. Malda ICT-II (132 kV)
- v. Siliguri ICT (220 kV)
- vi. Siliguri ICT (132 kV)
- vii. Malda ICT I-160 MVA (220 kV)
- viii. Malda ICT II-160 MVA (220 kV)
- ix. Birpara ICT-160 MVA (220 kV)
- x. Siliguri ICT-160 MVA (220 kV)

b. The details of commercial operation of the assets covered in the instant petition are as follows:

Asset	Previously covered under	Nomenclature in previous order	SCOD	COD	Time over-run	Time over-run condoned
Asset A	Petition No. 102/TT/2015 order dated 20.2.2016	Asset I	1.5.2013	1.4.2013	No	NA
Asset B		Asset II	1.5.2013	1.3.2013	No	NA



Asset	Previously covered under	Nomenclature in previous order	SCOD	COD	Time over-run	Time over-run condoned
Asset C	Petition No. 113/TT/2017 order dated 9.10.2018	Asset I	1.5.2013	1.3.2013	No	NA
Asset D		Asset II	1.5.2013	1.2.2013	No	NA
Asset E		Asset III	1.5.2013	1.11.2013	6 months	6 months
Asset F		Asset IV	1.5.2013	1.2.2013	No	NA
Asset G		Asset V	1.5.2013	1.1.2013	No	NA
Combined Asset C to G		-	-	-	6.3.2013 (Effective)	-

- c. Asset A and Asset B were covered under Petition No. 40/TT/2013 wherein the Commission determined tariff vide order dated 15.10.2014 for 2009-14 period.
- d. Assets C to G were covered under Petition No. 206/TT/2012 wherein the Commission determined tariff vide order dated 6.1.2015 for 2009-14 period.
- e. The transmission tariff for 2014-19 period was allowed for Asset A and Asset B vide order dated 20.2.2016 in Petition No. 102/TT/2015 and for Assets C-G vide order dated 9.10.2018 in Petition No. 113/TT/2017.
- f. The Petitioner has submitted information sought in the Technical Validation letter dated 18.2.2020 vide affidavit dated 25.2.2020. The trued up tariff claimed by the Petitioner for the 2014-19 period is as follows:

(₹ in lakh)						
Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-A	AFC approved	196.94	203.16	201.46	199.89	198.43
	Revised AFC claimed based on truing up	189.20	192.63	194.15	193.82	192.51
Asset-B	AFC approved	192.39	197.01	195.38	193.88	192.45
	Revised AFC claimed based on truing up	187.57	191.59	191.30	189.59	188.28
Combined Asset C to G	AFC approved	580.76	591.90	611.68	628.61	619.24
	Revised AFC claimed based on truing up	570.00	580.79	600.91	627.03	629.41



4. The instant petition is filed for truing up of transmission tariff of the 2014-19 period under Regulation 8 of the 2014 Tariff Regulations and determination of transmission tariff of 2019-24 period under Regulation 8 of the 2019 Tariff Regulations for the transmission assets.

5. The respondents are distribution licensees and Power Departments, who are procuring transmission service from the Petitioner, mainly beneficiaries of the Eastern Region.

6. The Petitioner has served the petition on the respondents and notice has been published in newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments/objections have been received from the public in response to the notice in newspaper. None of the respondents have filed reply to the petition.

7. The hearing in this matter was held on 26.2.2020 and the order was reserved. The Petitioner was directed to submit certain information and the same was filed by the Petitioner vide affidavit dated 12.3.2020.

8. This order is issued considering the submissions made by the Petitioner in the petition dated 28.10.2019 and Petitioner's affidavits dated 25.2.2020 and 12.3.2020

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

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

10. The details of the trued up transmission charges claimed by the Petitioner are as under:-



(₹ in lakh)

Asset-A					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	40.45	41.85	42.80	43.20	43.20
Interest on Loan	37.19	35.30	32.66	29.28	25.60
Return on Equity	45.10	46.88	47.92	48.37	48.50
Interest on working capital	6.16	6.30	6.40	6.48	6.50
O & M Expenses	60.30	62.30	64.37	66.51	68.71
Total	189.20	192.63	194.15	193.82	192.51

(₹ in lakh)

Asset-B					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	39.44	41.02	41.45	41.45	41.45
Interest on Loan	37.46	36.05	32.74	28.86	25.19
Return on Equity	43.97	45.95	46.41	46.41	46.53
Interest on working capital	6.12	6.27	6.33	6.36	6.40
O & M Expenses	60.30	62.30	64.37	66.51	68.71
Total	187.57	191.59	191.30	189.59	188.28

(₹ in lakh)

Combined Asset-C to G					
Particulars	2014-15 (Pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	136.34	141.75	150.56	161.61	165.17
Interest on Loan	131.97	125.81	122.20	119.46	108.72
Return on Equity	152.03	158.78	168.57	180.94	185.42
Interest on working capital	17.00	17.39	17.98	18.72	18.92
O & M Expenses	132.66	137.06	141.60	146.30	151.18
Total	570.00	580.79	600.91	627.03	629.41

11. The details of the trued up interest on working capital claimed by the

Petitioner for the instant assets are as under:-

(₹ in lakh)

Asset-A					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	9.05	9.35	9.66	9.98	10.31
O&M expenses	5.03	5.19	5.36	5.54	5.73
Receivables	31.53	32.10	32.36	32.30	32.09
Total	45.61	46.64	47.38	47.82	48.13
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	6.16	6.30	6.40	6.46	6.50



(₹ in lakh)

Asset-B					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	9.05	9.35	9.66	9.98	10.31
O&M expenses	5.03	5.19	5.36	5.54	5.73
Receivables	31.26	31.93	31.88	31.60	31.38
Total	45.34	46.47	46.90	47.12	47.42
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	6.12	6.27	6.33	6.36	6.40

(₹ in lakh)

Combined Asset-C to G						
Particulars	2014-15 (Pro-rata)	2015-16	2016-17	2017-18	2018-19	
Maintenance Spares		19.90	20.56	21.24	21.95	22.68
O&M expenses		11.06	11.42	11.80	12.19	12.60
Receivables		95.00	96.80	100.15	104.51	104.90
Total		125.96	128.78	133.19	138.65	140.18
Rate of Interest (%)		13.50	13.50	13.50	13.50	13.50
Interest on Working Capital		17.00	17.39	17.98	18.72	18.92

12. The Petitioner has submitted the information as required under the 2014 Tariff Regulations for truing up of annual fixed charges for 2014-19 period. The tariff for 2014-19 period has been trued up as discussed in the subsequent paragraphs.

Capital Cost as on 1.4.2014

13. The capital cost of the existing project has been calculated in accordance with Regulation 9(3) and Regulation 9(6) of the 2014 Tariff Regulations.

14. The Commission vide order dated 20.2.2016 in Petition No. 102/TT/2015 and order dated 9.10.2018 in Petition No. 113/TT/2017 had allowed capital cost of ₹3941.90 lakh as opening capital cost as on 1.4.2014 and projected additional capital expenditure of ₹662.81 lakh for determination of tariff for 2014-19 period for assets covered under the instant petition. The details are as follows:



(₹ in lakh)

Assets	Apportioned approved cost as per FR / RCE	Expenditure up to 31.3.2014	Additional Capital Expenditure 2014-2019		Total capital cost as on 31.3.2019
			2014-15	2015-19	
Asset-A	993.30 / 912.06	746.37*	90.00	0.00	836.37
Asset-B	944.20 / 832.77	720.47#	70.00	0.00	790.47
Combined Asset C to G	4098.50 / 3320.17	2475.06^	186.71	316.10	2977.87
Total	6036.00/ 5065.00	3941.90	346.71	316.10	4604.71

*Initial spares (under sub-station head) amounting to ₹3.62 lakh corresponding to Asset-A were disallowed.

#Initial spares (under sub-station head) amounting to ₹4.58 lakh corresponding to Asset-B were disallowed.

^De-cap amounting to ₹55.56 lakh, IDC and IEDC amounting to ₹63.95 lakh and initial spares (under sub-station head) amounting to ₹5.48 corresponding to Combined Asset-C to G was disallowed.

Initial Spares

15. The Petitioner has claimed the following Initial Spares for sub-station only and has further requested to revise the Initial Spares allowed earlier for the instant assets in order dated 20.2.2016 in Petition No. 102/TT/2015 and order dated 9.10.2018 in Petition No. 113/TT/2017 taking into consideration the judgement of the Appellate Tribunal for Electricity (APTEL) dated 14.9.2019 in Appeal No.74 of 2017.

(₹ in lakh)

Assets	Asset Type	Estimated Completion Cost (A)	Initial Spares Claimed originally (B)	Allowed in Petition No. 102/TT/2015 and 113/TT/2017	Initial Spares Worked out at Ceiling limit 2.5%
					$C = [(A-B) * 2.5 / (100-2.5)]$
Asset-A	Conventional Sub-station	818.27	24.53	20.91	20.35
Asset-B	Conventional Sub-station	785.02	24.34	19.76	19.50
Asset-C	Conventional Sub-station	682.58	10.14	10.14	17.24
Asset-D	Conventional Sub-station	674.2	10.14	10.14	17.03
Asset-E	Conventional Sub-station	432.68	5.64	5.64	10.95
Asset-F	Conventional Sub-station	703.25	20.27	14.79	17.51
Asset-G	Conventional Sub-station	651.71	20.27	13.12	16.19
Total		4747.71	115.33	94.50	118.78



16. Initial Spares are allowed for the instant assets as per the APTEL's directions in judgement dated 14.9.2019. As per the APTEL's judgement dated 14.9.2019 in Appeal No. 74 of 2017, the Initial Spares are to be allowed as a percentage of the project cost as a whole as on the cut-off date. Regulation 3(29) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as the "2009 Tariff Regulations") defines "project cost" as under:

"(29) 'original project cost' means the capital expenditure incurred by the generating company or the transmission licensee, as the case may be, within the original scope of the project up to the cut-off date as admitted by the Commission;"

17. The instant assets were put into commercial operation in the 2009-14 period. Accordingly, the 2009 Tariff Regulations are applicable for the instant assets. Regulation 8(iv) of the 2009 Tariff Regulations specifies the norms for the Initial Spares for the transmission systems as under:

"(iv) Transmission system

(a) Transmission line - 0.75%

(b) Transmission Sub-station - 2.5%

(c) Series Compensation devices and HVDC Station - 3.5%

(d) Gas Insulated Sub-station (GIS) - 3.5%"

18. It is observed that the Petitioner has claimed the Initial Spares for the instant assets, which were put into commercial operation during the 2009-14 tariff period, at estimated completion costs as provided in the Auditor certificates. The Initial Spares are allowed for the instant assets as a percentage of the capital expenditure as on the cut-off date, as specified in Regulation 3(29) of the 2009 Tariff Regulations, as follows:-



Asset	Total Capital Cost admitted as on 31.3.2014 (₹ in lakh)	Capital cost as on cut-off date considered for computing Initial Spares # (₹ in lakh)	Initial Spares claimed (₹ in lakh)	Norms as per 2009 Tariff Regulations (in %)	Initial Spares allowable as per Norms and APTEL judgement dated 14.9.2019 (₹ in lakh)	Allowed in Petition No. 102/TT/2015 and 113/TT/2017 (₹ in lakh)	Balance Initial Spares allowed (₹ in lakh)
		A	B	C	D=(A-B)*C/(100-C)	E	D-E
		Conventional Sub-station					
Asset-A	746.37	803.06*	24.53	2.50%	19.96	20.91	12.30
Asset-B	720.47	785.02*	24.34	2.50%	19.50	19.76	
Asset-C	510.93	543.72	10.14	2.50%	13.68	10.14	
Asset-D	522.66	535.45	10.14	2.50%	13.47	10.14	
Asset-E	312.63	400.46	5.64	2.50%	10.12	5.64	
Asset-F	596.9	617.69*	20.27	2.50%	15.32	14.79	
Asset-G	531.95	595.05*	20.27	2.50%	14.74	13.12	
Total	3941.91	4280.45	115.33		106.80	94.50	

*Disallowed excess initial spares added back to the capital cost for computation of initial spares

#Cost as per Auditor certificate upto cut-off date i.e. 31.3.2016

Out of the balance Initial Spares of ₹12.30 lakh, ₹3.62 lakh is added to Asset A, ₹4.58 lakh is added to Asset B and balance ₹4.10 lakh is added to Asset C-G respectively.

The capital cost considered as on 1.4.2014 is as under:

(₹ in lakh)

Asset Details	Admitted Capital Cost as on 31.3.2014 in order dated 25.2.2016	Balance Initial Spares allowable as per Norms and APTEL judgment dated 14.9.2019	Capital Cost considered after allowing balance Initial Spares as on 1.4.2014
Asset-A	746.37	3.62	749.99
Asset-B	720.47	4.58	725.05
Combined Asset C to G	2475.06	4.10	2479.16
Total	3941.90	12.30	3954.20



Additional Capital Expenditure (ACE)

19. The Commission had allowed ACE of ₹662.81 lakh for the instant assets in 2014-19 towards balance and retention payments vide order dated 20.2.2016 in Petition No. 102/TT/2015 and vide order dated 9.10.2018 in Petition No. 113/TT/2017.

20. The Petitioner has claimed ACE as follows:

a) ACE incurred till cut-off date (31.3.2016) of ₹262.53 lakh during 2014-15 and ₹55.18 lakh during 2015-16 under Regulation 14(1)(i) and Regulation 14(1)(ii) of the 2014 Tariff Regulations.

b) ACE incurred after cut-off date i.e. ₹331.11 lakh for 2016-17, ₹102.51 lakh for 2017-18, and ₹32.41 lakh for 2018-19 on account of any undischarged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date under Regulation 14(3)(v) of the 2014 Tariff Regulations. The justification for ACE claimed beyond the cut-off date provided by the Petitioner is given below:

(₹ in lakh)

Asset Name	Party Name	Package	Balance & retention amount		
			2016-17	2017-18	2018-19
A	Sterlingwilson	Sub-station	14.01	0.00	0.00
	CGL		1.20	0.00	0.00
B	Sterlingwilson		0.00	0.00	0.00
	CGL		0.00	0.00	0.00
Combined Asset C to G	Sterlingwilson		315.90	102.51	32.41
	BHEL		0.00	0.00	0.00
TOTAL			331.11	102.51	32.41

21. The ACE claimed within cut-off date is allowed under Regulation 14(1)(i) and Regulation 14(1)(ii) of the 2014 Tariff Regulations. The ACE claimed beyond cut-off date is on account of any undischarged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date under Regulation 14(3)(v) of the 2014 Tariff Regulations. The ACE claimed is within



the ACE of ₹662.81 lakh approved vide orders dated 20.2.2016 and 9.10.2018, and therefore, the ACE claimed by the Petitioner has been allowed.

22. The details of the capital cost and ACE approved upto 31.3.2019 of the assets covered under instant petition are as follows: -

(₹ in lakh)

Asset Details	Expenditure up to 31.3.2014 (as per admitted)	Expenditure up to 31.3.2014 (after adding back the deducted spares)	ACE 2014-2019					Estimated completion cost considered as on 31.3.2019
			(as per Auditor certificates)					
			2014-15	2015-16	2016-17	2017-18	2018-19	
Asset-A	746.37	749.99	32.16	20.91	15.21	0.00	0.00	818.27
Asset-B	720.47	725.05	43.66	16.31	0.00	0.00	0.00	785.02
Combined Asset C to G	2475.06	2479.16	186.71	17.96	315.90	102.51	32.41	3134.65
Total	3941.90	3954.20	262.53	55.18	331.11	102.51	32.41	4737.94

Debt-Equity ratio

23. The debt-equity ratio has been considered in accordance with Regulation 19 (1), (3) and (5) of the 2014 Tariff Regulations. The debt and equity allowed for individual assets for determination of tariff for the period ending 31.3.2014 has been considered as opening debt and equity of the project as on 1.4.2014. The debt and equity ratio of 70:30 has been considered for the ACE allowed during 2014-19 in accordance to Regulation 19(3) of the 2014 Tariff Regulations.

24. The details of the debt and equity as on 1.4.2014 and 31.3.2019 for Asset A, Asset B and Combined Asset C to G are considered for the purpose of tariff for the 2014-19 tariff period is as follows:



For Asset A

Funding	Capital cost as on 1.4.2014 (₹ in lakh)	(%)	ACE during 2014-19 (₹ in lakh)	(%)	Total capital cost as on 31.3.2019 (₹ in lakh)	(%)
Debt	524.99	70.00	47.80	70.00	572.79	70.00
Equity	225.00	30.00	20.48	30.00	245.48	30.00
Total	749.99	100.00	68.28	100.00	818.27	100.00

For Asset B

(₹ in lakh)

Funding	Capital cost as on 1.4.2014 (₹ in lakh)	(%)	ACE during 2014-19 (₹ in lakh)	(%)	Total Capital cost as on 31.3.2019 (₹ in lakh)	(%)
Debt	507.54	70.00	41.98	70.00	549.51	70.00
Equity	217.52	30.00	17.99	30.00	235.51	30.00
Total	725.05	100.00	59.97	100.00	785.02	100.00

For Assets C to G

Funding	Capital cost as on 1.4.2014 (₹ in lakh)	(%)	ACE during 2014-19 (₹ in lakh)	(%)	Total Capital cost as on 31.3.2019 (₹ in lakh)	(%)
Debt	1735.41	70.00	458.84	70.00	2194.25	70.00
Equity	743.75	30.00	196.65	30.00	940.39	30.00
Total	2479.16	100.00	655.49	100.00	3134.65	100.00

Interest on Loan (IoL)

25. The Petitioner has claimed the weighted average rate of IoL, based on its actual loan portfolio and rate of interest. Accordingly, the IoL has been calculated based on actual interest rate submitted by the Petitioner, in accordance with the Regulation 26 of the 2014 Tariff Regulations. The details of weighted average rate of interest are placed in Annexure-1. The IoL worked out is as follows: -

For Asset A

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Loan					
Gross Normative Loan	524.99	547.51	562.14	572.79	572.79
Cumulative Repayments up to Previous Year	37.10	77.55	119.40	162.20	205.41
Net Loan-Opening	487.89	469.96	442.74	410.59	367.38



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Additions	22.51	14.64	10.65	0.00	0.00
Repayment during the year	40.45	41.85	42.80	43.20	43.20
Net Loan-Closing	469.96	442.74	410.59	367.38	324.18
Average Loan	478.92	456.35	426.67	388.99	345.78
Weighted Average Rate of Interest on Loan (%)	8.5074	8.5143	8.4851	8.4332	8.4212
Interest on Loan	40.74	38.86	36.20	32.80	29.12

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	41.97	40.96	37.17	33.42	29.72
Claimed by Petitioner	37.19	35.30	32.66	29.28	25.60
Allowed after true-up in this order	40.74	38.86	36.20	32.80	29.12

The difference in the approved IoL and that allowed after truing up is on account of lower ACE, spread of ACE over 2014-19 period, and change in the weighted average rate of interest which is computed based on actual loan portfolio and rate of interest.

For Asset B

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Loan					
Gross Normative Loan	507.54	538.10	549.51	549.51	549.51
Cumulative Repayments up to Previous Year	35.98	75.42	116.43	157.88	199.33
Net Loan-Opening	471.56	462.68	433.08	391.63	350.18
Additions	30.56	11.42	0.00	0.00	0.00
Repayment during the year	39.44	41.02	41.45	41.45	41.45
Net Loan-Closing	462.68	433.08	391.63	350.18	308.73
Average Loan	467.12	447.88	412.36	370.91	329.46
Weighted Average Rate of Interest on Loan (%)	8.8347	8.8356	8.7896	8.7189	8.6982
Interest on Loan	41.27	39.57	36.24	32.34	28.66

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	41.53	40.07	36.35	32.67	29.01
Claimed by Petitioner	37.74	36.05	32.74	28.86	25.19
Allowed after true-up in this order	41.27	39.57	36.24	32.34	28.66

The difference in the approved IoL and that allowed after truing up is on account of lower ACE, spread of ACE over 2014-15 and 2015-16, and change in the weighted average rate of interest which is computed based on actual loan portfolio and rate of interest.



For Assets C to G

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Loan					
Gross Normative Loan	1735.41	1866.11	1878.68	2099.81	2171.57
Cumulative Repayments up to Previous Year	125.92	261.75	402.98	553.03	714.12
Net Loan-Opening	1609.49	1604.36	1475.70	1546.78	1457.45
Additions	130.70	12.57	221.13	71.76	22.69
Repayment during the year	135.83	141.23	150.05	161.09	164.65
Net Loan-Closing	1604.36	1475.70	1546.78	1457.45	1315.48
Average Loan	1606.92	1540.03	1511.24	1502.12	1386.46
Weighted Average Rate of Interest on Loan (%)	8.9297	8.9199	8.8475	8.7098	8.6603
Interest on Loan	143.49	137.37	133.71	130.83	120.07

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 9.10.2018	144.14	138.68	135.59	131.13	116.95
Claimed by Petitioner	131.97	125.81	122.20	119.46	108.72
Allowed after true-up in this order	143.49	137.37	133.71	130.83	120.07

The difference in the approved IoL and that allowed after truing up is on account of ACE in 2017-18 and 2018-19 and change in the weighted average rate of interest which is computed based on actual loan portfolio and rate of interest.

Return on Equity (“ROE”)

26. The Petitioner is entitled for RoE for the instant assets in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that they are liable to pay income tax at MAT rates and has claimed the following effective tax rates for the 2014-19 tariff period:

Year	Claimed effective tax rate (in %)	Grossed up ROE (Base Rate/1-t) (in %)
2014-15	21.018	19.624
2015-16	21.382	19.715
2016-17	21.338	19.704
2017-18	21.337	19.704
2018-19	21.549	19.757



27. The Commission in order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate based on the notified MAT rates for the Petitioner and the same is given in the table below. The same MAT rates are considered for the purpose of grossing up of rate of RoE for trueing up of the tariff of the 2014-19 tariff period in terms of the provisions of the 2014 Tariff Regulations.

Year	Notified MAT rates (inclusive of surcharge & cess) (in %)	Base rate of RoE (in %)	Grossed up ROE (Base Rate/1-t) (in %)
2014-15	20.9605	15.50	19.611
2015-16	21.3416	15.50	19.705
2016-17	21.3416	15.50	19.705
2017-18	21.3416	15.50	19.705
2018-19	21.5488	15.50	19.758

The Petitioner has claimed ROE for the 2014-19 period after grossing up the ROE of 15.50% with Effective Tax rates (based on MAT rates) each year as per the above said Regulation. The ROE is trueed up on the basis of the MAT rate applicable in the respective years and is allowed as follows:-

For Asset A

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity					
Opening Equity	225.00	234.65	240.92	245.48	245.48
Additions	9.65	6.27	4.56	0.00	0.00
Closing Equity	234.65	240.92	245.48	245.48	245.48
Average Equity	229.82	237.78	243.20	245.48	245.48
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705	19.758
Return on Equity	45.07	46.86	47.92	48.37	48.50

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	46.56	49.20	49.20	49.20	49.20
Claimed by Petitioner	45.10	46.88	47.92	48.37	48.50
Allowed after true-up in this order	45.07	46.86	47.92	48.37	48.50

The RoE allowed in the instant order is less than the RoE allowed vide order dated 20.2.2016 due to decrease in equity on account of lower ACE, spread of ACE over



2014-19 period, and change in the applicable MAT rate for the purpose of grossing up of base rate of RoE.

For Asset B

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity					
Opening Equity	217.52	230.61	235.51	235.51	235.51
Additions	13.10	4.89	0.00	0.00	0.00
Closing Equity	230.61	235.51	235.51	235.51	235.51
Average Equity	224.06	233.06	235.51	235.51	235.51
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705	19.758
Return on Equity	43.94	45.93	46.41	46.41	46.53

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	44.45	46.50	46.50	46.50	46.50
Claimed by Petitioner	43.97	45.95	46.41	46.41	46.53
Allowed after true-up in this order	43.94	45.93	46.41	46.41	46.53

The RoE allowed in the instant order is less than the RoE allowed vide order dated 20.2.2016 due to decrease in equity on account of lower additional capitalisation and change in the applicable MAT rate for the purpose of grossing up of base rate of RoE.

For Assets C to G

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity					
Opening Equity	743.75	799.76	805.15	899.92	930.67
Additions	56.01	5.39	94.77	30.75	9.72
Closing Equity	799.76	805.15	899.92	930.67	940.39
Average Equity	771.75	802.45	852.53	915.29	935.53
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705	19.758
Return on Equity	151.34	158.13	168.00	180.36	184.84

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 9.10.2018	151.10	157.12	166.42	175.19	175.19
Claimed by Petitioner	152.03	158.78	168.57	180.94	185.42
Allowed after true-up in this order	151.34	158.13	168.00	180.36	184.84



The RoE allowed in the instant order is greater than the RoE allowed vide order dated 9.10.2018 due to increase in equity on account of higher additional capitalisation and change in the applicable MAT rate for the purpose of grossing up of base rate of RoE.

Depreciation

28. The depreciation has been worked out as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. The depreciation allowed is as follows:-

For Asset A

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	749.99	782.15	803.06	818.27	818.27
Additional Capitalisation	32.16	20.91	15.21	0.00	0.00
Closing Gross Block	782.15	803.06	818.27	818.27	818.27
Average Gross Block	766.07	792.61	810.67	818.27	818.27
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	689.46	713.34	729.60	736.44	736.44
Balance useful life of the asset	24.00	23.00	22.00	21.00	20.00
Elapsed life	1.00	2.00	3.00	4.00	5.00
Remaining Depreciable Value	570.13	593.95	567.40	531.04	487.83
Depreciation during the year	40.45	41.85	42.80	43.20	43.20
Cumulative depreciation (incl. of AAD)	77.55	119.40	162.20	205.41	248.61

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	41.78	44.16	44.16	44.16	44.16
Claimed by Petitioner	40.45	41.85	42.80	43.20	43.20
Allowed after true-up in this order	40.45	41.85	42.80	43.20	43.20

The depreciation allowed in the instant order is lower than the depreciation allowed vide order dated 20.2.2016 as the actual additional capitalisation is lower than the projected ACE.



For Asset B

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	725.05	768.71	785.02	785.02	785.02
Additional Capitalisation	43.66	16.31	0.00	0.00	0.00
Closing Gross Block	768.71	785.02	785.02	785.02	785.02
Average Gross Block	746.88	776.87	785.02	785.02	785.02
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	672.19	699.18	706.52	706.52	706.52
Balance useful life of the asset	24.00	23.00	22.00	21.00	20.00
Elapsed life	1.00	2.00	3.00	4.00	5.00
Remaining Depreciable Value	596.78	582.74	548.64	507.19	465.74
Depreciation during the year	39.44	41.02	41.45	41.45	41.45
Cumulative depreciation (incl. of AAD)	75.42	116.43	157.88	199.33	240.78

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	39.89	41.74	41.74	41.74	41.74
Claimed by Petitioner	39.44	41.02	41.45	41.45	41.45
Allowed after true-up in this order	39.44	41.02	41.45	41.45	41.45

The depreciation allowed in the instant order is lower than the depreciation allowed vide order dated 20.2.2016 as the actual additional capitalisation is lower than the projected ACE.

For Assets C to G

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	2479.16	2665.87	2683.83	2999.73	3102.24
Additional Capitalisation	186.71	17.96	315.90	102.51	32.41
Closing Gross Block	2665.87	2683.83	2999.73	3102.24	3134.65
Average Gross Block	2572.51	2674.85	2841.78	3050.98	3118.44
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	2315.26	2407.36	2557.60	2745.88	2806.60
Balance useful life of the asset	24.00	23.00	22.00	21.00	20.00
Elapsed life	1.00	2.00	3.00	4.00	5.00
Remaining Depreciable Value	2053.51	2004.38	2004.57	2031.77	1927.83
Depreciation during the year	135.83	141.23	150.05	161.09	164.65
Cumulative depreciation (incl. of AAD)	261.75	402.98	553.03	714.12	878.77



(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 9.10.2018	135.61	141.02	149.36	157.23	157.23
Claimed by Petitioner	136.34	141.75	150.56	161.61	165.17
Allowed after true-up in this order	135.83	141.23	150.05	161.09	164.65

The depreciation allowed in the instant order is higher than the depreciation allowed vide order dated 9.10.2018 due to increase in capital cost as on 1.4.2014 pursuant to add-back of differential initial spares as per the APTEL's judgment in Appeal No. 74 of 2017 and higher ACE.

Operation & Maintenance Expenses (O&M Expenses)

29. Regulation 29(3) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. Accordingly, the total allowable O&M Expenses for the instant assets have been worked out based on norms of O&M Expenses and the details are as follows:-

For Asset A

(₹ in lakh)

O&M Expenses					
400 kV Conventional					
No. of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	60.3	62.3	64.37	66.51	68.71
Total O&M Expense (₹ in lakh)	60.30	62.30	64.37	66.51	68.71

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	60.30	62.30	64.37	66.51	68.71
Claimed by Petitioner	60.30	62.30	64.37	66.51	68.71
Allowed after true-up in this order	60.30	62.30	64.37	66.51	68.71

The O&M Expenses claimed by the Petitioner in this Petition are as per the norms specified in the 2014 Tariff Regulations and hence, they are allowed as claimed.



For Asset B

(₹ in lakh)

O&M Expenses					
400 kV Conventional					
No. of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	60.3	62.3	64.37	66.51	68.71
Total O&M Expense (₹ in lakh)	60.30	62.30	64.37	66.51	68.71

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	60.30	62.30	64.37	66.51	68.71
Claimed by Petitioner	60.30	62.30	64.37	66.51	68.71
Allowed after true-up in this order	60.30	62.30	64.37	66.51	68.71

The O&M Expenses claimed by the Petitioner in this Petition are as per the norms specified in the 2014 Tariff Regulations and hence, they are allowed as claimed.

For Assets C to G

(₹ in lakh)

O&M Expenses					
220 kV Conventional					
No. of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	42.21	43.61	45.06	46.55	48.1
132 kV & below Conventional					
No. of bays	3	3	3	3	3
Norms (₹ lakh/Bay)	30.15	31.15	32.18	33.25	34.36
Total O&M Expense (₹ in lakh)	132.66	137.06	141.60	146.30	151.18

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 9.10.2018	132.66	137.06	141.60	146.30	151.18
Claimed by Petitioner	132.66	137.06	141.60	146.30	151.18
Allowed after true-up in this order	132.66	137.06	141.60	146.30	151.18

The O&M Expenses claimed by the Petitioner in this Petition are as per the norms specified in the 2014 Tariff Regulations and hence, they are allowed as claimed.

Interest on Working Capital (IWC)

30. The IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and allowed as under:-



For Asset A

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital					
O & M Expenses	5.03	5.19	5.36	5.54	5.73
Maintenance Spares	9.05	9.35	9.66	9.98	10.31
Receivables	32.13	32.71	32.96	32.90	32.69
Total Working Capital	46.20	47.24	47.98	48.42	48.72
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest of working capital	6.24	6.38	6.48	6.54	6.58

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	6.33	6.53	6.56	6.59	6.63
Claimed by Petitioner	6.16	6.30	6.40	6.46	6.50
Allowed after true-up in this order	6.24	6.38	6.48	6.54	6.58

The IWC has decreased on account of decrease in receivables due to decrease in RoE and Depreciation on account of lower ACE, spread of capital expenditure over 2014-19 period, and variation in ROE on account of applicable MAT rate during the 2009-14 tariff period.

For Asset B

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital					
O & M Expenses	5.03	5.19	5.36	5.54	5.73
Maintenance Spares	9.05	9.35	9.66	9.98	10.31
Receivables	31.86	32.53	32.48	32.19	31.97
Total Working Capital	45.93	47.07	47.50	47.71	48.00
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest of working capital	6.20	6.35	6.41	6.44	6.48

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 20.2.2016	6.23	6.39	6.42	6.46	6.49
Claimed by Petitioner	6.12	6.27	6.33	6.36	6.40
Allowed after true-up in this order	6.20	6.35	6.41	6.44	6.48

The IWC has decreased on account of decrease in receivables due to decrease in RoE and Depreciation on account of lower ACE and variation in ROE on account of applicable MAT rate during the 2009-14 tariff period.



For Assets C to G

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital					
O & M Expenses	11.06	11.42	11.80	12.19	12.60
Maintenance Spares	19.90	20.56	21.24	21.95	22.68
Receivables	96.76	98.57	101.93	106.26	106.65
Total Working Capital	127.72	130.55	134.97	140.39	141.93
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest of working capital	17.24	17.62	18.22	18.95	19.16

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 9.10.2018	17.25	17.63	18.21	18.75	18.70
Claimed by Petitioner	17.00	17.39	17.98	18.72	18.92
Allowed after true-up in this order	17.24	17.62	18.22	18.95	19.16

The variation in IWC is on account of variation in receivables and variation in ROE on account of applicable MAT rate during the 2009-14 tariff period.

APPROVED ANNUAL FIXED CHARGES FOR 2014-19 TARIFF PERIOD

31. The trued up annual fixed charges allowed for the instant transmission assets for the tariff period 2014-19 are summarised below:-

For Asset A

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	40.45	41.85	42.80	43.20	43.20
Interest on Loan	40.74	38.86	36.20	32.80	29.12
Return on Equity	45.07	46.86	47.92	48.37	48.50
Interest on Working Capital	6.24	6.38	6.48	6.54	6.58
O & M Expenses	60.30	62.30	64.37	66.51	68.71
Total	192.80	196.24	197.78	197.43	196.11

For Asset B

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	39.44	41.02	41.45	41.45	41.45
Interest on Loan	41.27	39.57	36.24	32.34	28.66
Return on Equity	43.94	45.93	46.41	46.41	46.53
Interest on Working Capital	6.20	6.35	6.41	6.44	6.48
O & M Expenses	60.30	62.30	64.37	66.51	68.71
Total	191.14	195.17	194.88	193.15	191.83



For Assets C to G

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	135.83	141.23	150.05	161.09	164.65
Interest on Loan	143.49	137.37	133.71	130.83	120.07
Return on Equity	151.34	158.13	168.00	180.36	184.84
Interest on Working Capital	17.24	17.62	18.22	18.95	19.16
O & M Expenses	132.66	137.06	141.60	146.30	151.18
Total	580.57	591.41	611.57	637.54	639.90

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

32. The Petitioner has claimed the following transmission charges for the instant assets for 2019-24 tariff period:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	250.68	250.68	250.68	250.68	250.68
Interest on Loan	139.19	117.57	95.96	73.73	50.86
Return on Equity	267.51	267.51	267.51	267.51	267.51
Interest on Working Capital	22.60	22.78	22.92	23.05	23.18
O&M Expenses	291.85	302.34	313.03	323.85	335.52
Total	971.83	960.88	950.10	938.82	927.75

33. The Petitioner has claimed the following 'Interest on Working Capital' for the instant assets for the 2019-24 tariff period:-

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses	24.32	25.20	26.09	26.99	27.96
Maintenance Spares	43.78	45.35	46.95	48.58	50.33
Receivables	119.49	118.46	117.13	115.75	114.07
Total	187.59	189.01	190.17	191.32	192.36
Rate of Interest (%)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	22.60	22.78	22.92	23.05	23.18

The tariff for 2019-24 tariff period is allowed as discussed in the subsequent paragraphs.



Capital Cost

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

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

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

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

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



- (a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;
- (b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
- (c) Capital expenditure on account of 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.”



35. The Petitioner has revised the capital cost computations pursuant to APTEL judgment in Appeal No. 74 of 2017 as discussed in paragraphs 15 and 18 above and has claimed capital cost of ₹4747.71 lakh as on 31.3.2019 for Combined Asset vide Auditor Certificate dated 18.7.2019 (for Assets A & B) and dated 13.7.2019 (for Assets C to G). Capital cost of ₹4737.94 lakh as on 31.3.2019 for Combined Asset has been worked out by the Commission and the same has been considered as opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Effective Date of Commercial Operation (E-COD)

36. The petitioner has stated that effective COD of the combined asset is considered as 10.3.2013. However, based on the trued up capital cost and actual COD of the individual assets, the E-COD has been worked out as 9.3.2013 and is shown below:-

Asset Name	COD considered for tariff purpose	No of days between the COD of the asset considered for tariff and the COD of the Project	True Up Capital Cost as on 31.3.2019 (₹ in lakh)	Weight of the Cost of an asset	Weighted Days
Asset A	1.4.2013	31	818.27	17%	5.35
Asset B	1.3.2013	0	785.02	17%	-
Asset C to G	6.3.2013	26	3134.65	66%	17.20
Total			4737.94		22.56
Effective COD	9.3.2013				

Weighted Average Life of the Assets

37. The Weighted Average Life (WAL) has been determined based on the admitted capital cost of individual elements as on 31.3.2019 and their respective life as



stipulated in the 2019 Tariff Regulations. Accordingly, the Weighted Average Life (WAL) of all the assets has been worked out as 25 years as shown below:-

Particulars	Combined Asset (₹ in lakh)	Life (in years)	Combined Cost (₹ in lakh)	Weighted Cost (₹ in lakh)
Building Civil Works & Colony	-	25	-	-
Transmission Line	-	35	-	-
Sub Station	4737.94	25	4737.94	118448.50
PLCC	-	15	-	-
IT Equipment (Incl. Software)	-	6	-	-
Total	4737.94		4737.94	118448.50
		Avg. Life of Asset		25

Additional Capital Expenditure (ACE)

38. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as under:-

“24. Additional Capitalisation within the original scope and upto the cut-off date

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

- (a) Undischarged liabilities recognized to be payable at a future date;*
- (b) Works deferred for execution;*
- (c) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;*
- (d) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law;*
- (e) Change in law or compliance of any existing law; and*
- (f) Force Majeure events:*

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

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

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



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

- (a) *Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
- (b) *Change in law or compliance of any existing law;*
- (c) *Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (d) *Liability for works executed prior to the cut-off date;*
- (e) *Force Majeure events;*
- (f) *Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and*
- (g) *Raising of ash dyke as a part of ash disposal system.*

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

- (a) *The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;*
- (b) *The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;*
- (c) *The replacement of such asset or equipment is necessary on account of obsolescence of technology; and*
- (d) *The replacement of such asset or equipment has otherwise been allowed by the Commission.”*

39. The Petitioner has not claimed any additional capital expenditure for the instant assets during the 2019-24 period. The Petitioner has claimed the following capital cost as on 31.3.2024:

(₹ in lakh)			
AppORTIONED Approved Capital Cost (FR)	Capital Cost admitted as on 31.3.2019 in the instant order	Projected ACE for	Total Capital Cost admitted as on 31.3.2024
		2019-24	
5065.00	4737.94	0	4737.94

40. The Petitioner has also submitted that no “previously recognised liabilities” remain to be discharged as on date. Accordingly, the capital cost as on 31.3.2024 is considered as ₹4737.94 lakh.



Debt-Equity ratio

41. Regulation 18 of the 2019 Tariff Regulations provides as under:-

“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.*

(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.”



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

Particulars	Capital cost as on 1.4.2019 (₹ in lakh)	%	ACE for 2019-24 (₹ in lakh)	%	Capital cost as on 31.3.2024 (₹ in lakh)	%
Debt	3316.56	70.00	0.00	70.00	3316.56	70.00
Equity	1421.38	30.00	0.00	30.00	1421.38	30.00
Total	4737.94	100.00	0.00	100.00	4737.94	100.00

Return on Equity (ROE)

43. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations specify as under:-

“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.

(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.”

44. The Petitioner has submitted that MAT rate is applicable to the Petitioner's company. Accordingly, the 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. The ROE allowed for the instant assets is as follows:-



(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	1421.38	1421.38	1421.38	1421.38	1421.38
Additions	0.00	0.00	0.00	0.00	0.00
Closing Equity	1421.38	1421.38	1421.38	1421.38	1421.38
Average Equity	1421.38	1421.38	1421.38	1421.38	1421.38
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (%)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
Return on Equity	266.96	266.96	266.96	266.96	266.96

Interest on Loan (IoL)

45. Regulation 32 of the 2019 Tariff Regulations provides as under:-

“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.

(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.”

46. The weighted average rate of IoL has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period will be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of true up. Therefore, the IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. The details of weighted average rate of interest for 2019-24 tariff period are placed in Annexure-2 and the IoL has been allowed as follows:-

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	3316.56	3316.56	3316.56	3316.56	3316.56
Cumulative Repayments upto Previous Year	1368.17	1618.33	1868.49	2118.66	2368.82
Net Loan-Opening	1948.39	1698.23	1448.07	1197.90	947.74
Additions	0.00	0.00	0.00	0.00	0.00
Repayment during the year	250.16	250.16	250.16	250.16	250.16
Net Loan-Closing	1698.23	1448.07	1197.90	947.74	697.58
Average Loan	1823.31	1573.15	1322.98	1072.82	822.66
Weighted Average Rate of Interest on Loan (%)	8.6453	8.6487	8.6549	8.5936	8.3746
Interest on Loan	157.63	136.06	114.50	92.19	68.89

Depreciation

47. Regulation 33 of the 2019 Tariff Regulations provides as under:-

"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 there of 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 decapitalized asset during its useful services.”

48. 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 detailed calculations for depreciation for the transmission assets are worked out and allowed as follows:-

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation					
Opening Gross Block	4737.94	4737.94	4737.94	4737.94	4737.94
Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	4737.94	4737.94	4737.94	4737.94	4737.94
Average Gross Block (90% depreciable assets)	4737.94	4737.94	4737.94	4737.94	4737.94
Average Gross Block (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
Freehold Land	0.00	0.00	0.00	0.00	0.00
Rate of Depreciation (%)	5.28%	5.28%	5.28%	5.28%	5.28%
Balance useful life of the asset	19	18	17	16	15
Elapsed life	6	7	8	9	10
Depreciable Value (excluding IT equipment and software)	4264.15	4264.15	4264.15	4264.15	4264.15
Depreciable value of IT equipment and software	0.00	0.00	0.00	0.00	0.00
Depreciation during the year	250.16	250.16	250.16	250.16	250.16
Cumulative Depreciation upto previous year	1368.17	1618.33	1868.49	2118.66	2368.82
Total Cumulative Depreciation					
Remaining Depreciable Value Total	1618.33	1868.49	2118.66	2368.82	2618.98

Operation & Maintenance Expenses (O&M Expenses)

49. Regulation 35(3)(a) of the 2019 Tariff Regulations provides as under:

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



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more	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
Single Circuit (Twin & Triple	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or	2.319	2.401	2.485	2.572	2.662
Multi Circuit (Twin & Triple	1.544	1.598	1.654	1.713	1.773
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath-Agra HVDC bipole	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes



commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;

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

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

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

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

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

50. The Petitioner has claimed the following O&M Expenses for the instant assets for the 2019-24 tariff period:

(₹ in lakh)

O&M Expenses					
400 kV Conventional					
No. of bays	2	2	2	2	2
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
220 kV Conventional					



O&M Expenses					
No. of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	22.51	23.3	24.12	24.96	25.84
132 kV and below Conventional					
No. of bays	3	3	3	3	3
Norms (₹ lakh/Bay)	16.08	16.64	17.23	17.83	18.46
400 kV Transformer					
Transformers (MVA)	640	640	640	640	640
Norms (₹ lakh/MVA)	0.245	0.254	0.263	0.272	0.282
Total O&M expense (₹ in lakh)	291.85	302.34	313.03	323.85	335.52

The O&M Expenses claimed by the Petitioner are as per the norms specified in the 2019 Tariff Regulations and hence, they are allowed as claimed.

Interest on Working Capital (IWC)

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

“34. Interest on Working Capital

(1) ...

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

- i. Receivables equivalent to 45 days of 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;"

52. The Petitioner has submitted that it has computed interest on working capital for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of interest on working capital as 12.05%. The interest on working capital is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The rate of interest on working capital considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points). The components of the working capital and interest thereon have been worked as follows:-

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	24.32	25.20	26.09	26.99	27.96
Maintenance Spares	43.78	45.35	46.95	48.58	50.33
Receivables	121.66	120.64	119.32	117.92	116.18
Total Working Capital	189.75	191.19	192.36	193.49	194.47
Rate of Interest (%)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	22.87	23.04	23.18	23.32	23.43

ANNUAL FIXED CHARGES FOR THE 2019-24 TARIFF PERIOD

53. The transmission charges allowed for the instant transmission assets for the 2019-24 tariff period are summarised below: -

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	250.16	250.16	250.16	250.16	250.16
Interest on Loan	157.63	136.06	114.50	92.19	68.89
Return on Equity	266.96	266.96	266.96	266.96	266.96
Interest on Working Capital	22.87	23.04	23.18	23.32	23.43
O & M Expenses	291.85	302.34	313.03	323.85	335.52
Total	989.47	978.56	967.83	956.48	944.97

Filing Fee and the Publication Expenses

54. 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

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

Security Expenses

56. The Petitioner has submitted that security expenses for the instant assets are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential Interest on Working Capital. The Petitioner has requested to consider the actual security expenses incurred during 2018-19 for claiming estimated security expenses for 2019-20 which shall be subject to true up at the end of the year based on the actuals. The Petitioner has submitted that similar petition for security expenses for 2020-21, 2021-22, 2022-23 and 2023-24 shall be filed on a yearly basis on the basis of the actual expenses of previous year subject to true up at the end of the year on actual expenses. The Petitioner has submitted that the difference, if any, between the estimated security expenses and actual security expenses as per the audited accounts may be allowed to be recovered from the beneficiaries on a yearly basis.



57. We have considered the submissions of the Petitioner. Any application filed by the Petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2019 Tariff Regulations.

Goods and Services Tax

58. 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 & 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

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

Capital Spares

60. The Petitioner has sought reimbursement of capital spares at the end of tariff block. The Petitioner's claim, if any, shall be dealt with in accordance with the provisions of the 2019 Tariff Regulations.

Sharing of Transmission Charges

61. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time as provided in Regulation 43 of 2014 Tariff Regulations for



the 2014-19 tariff period and Regulation 57 of the 2019 Tariff Regulations for the 2019-24 tariff period.

63. This order disposes of Petition No. 52/TT/2020

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson



ANNEXURE-1**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO FOR 2014-19 (Asset A)**

(₹ in lakh)

S. No.	Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Repayment	Total
1	BOND XXXVII -DOCO FUNDING	9.25%	110.00	0.00	36.67	110.00
2	SBI (21.03.2012) -ADD CAP FOR 2014-15	10.25%	0.00	22.52	6.14	22.52
3	SBI (21.03.2012) -ADD CAP FOR 2016-17	10.25%	0.00	10.65	2.90	10.65
4	SBI (21.03.2012) -DOCO LOAN	10.25%	2.54	0.00	0.69	2.54
5	BOND - XLII -DOCO FUNDING	8.80%	152.20	0.00	0.00	152.20
6	BOND - XLIII -DOCO XLIII	7.93%	260.26	0.00	43.38	260.26
7	BOND L -ADD CAP FOR 2015-16	8.40%	0.00	14.64	0.00	14.64
	Total		525.00	47.81	89.78	572.81

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD (Asset A)

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	525.00	547.52	562.16	572.81	572.81
Cumulative repayments of loans up to previous year	0.00	0.00	9.17	21.58	55.68
Net loans opening	525.00	547.52	552.99	551.23	517.13
Add: drawl(s) during the year	22.52	14.64	10.65	0.00	0.00
Less: repayment(s) of loan during the year	0.00	9.17	12.41	34.10	34.10
Net closing loan	547.52	552.99	551.23	517.13	483.03
Average net loan	536.26	550.26	552.11	534.18	500.08
Rate of interest on loan	8.5074%	8.5143%	8.4851%	8.4332%	8.4212%
Interest on loan	45.62	46.85	46.85	45.05	42.11



DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO FOR 2014-19 (Asset B)

(₹ in lakh)

S. No.	Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Repayment	Total
1	BOND XXXVII -DOCO FUNDING	9.25	172.20	0.00	57.40	172.20
2	SBI (21.03.2012) -DOCO LOAN	10.25	3.21	0.00	0.87	3.21
3	BOND - XLII -DOCO XLII	8.80	233.06	0.00	0.00	233.06
4	BOND - XLIII -DOCO LOAN	7.93	99.06	0.00	16.52	99.06
5	SBI (2014-15) -ADD CAP FOR 2014-15	10.25	0.00	30.56	0.00	30.56
6	BOND L -ADD CAP FOR 2015-16	8.40	0.00	7.36	0.00	7.36
7	BOND LI -ADD CAP FOR 2015-16	8.40	0.00	4.06	0.00	4.06
	Total		507.53	41.98	74.79	549.51

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD (Asset B)

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	507.53	538.09	549.51	549.51	549.51
Cumulative repayments of loans up to previous year	0.00	0.00	14.35	28.99	51.89
Net loans opening	507.53	538.09	535.16	520.52	497.62
Add: drawl(s) during the year	30.56	11.42	0.00	0.00	0.00
Less: repayment(s) of loan during the year	0.00	14.35	14.64	22.90	22.90
Net closing loan	538.09	535.16	520.52	497.62	474.72
Average net loan	522.81	536.63	527.84	509.07	486.17
Rate of interest on loan	8.8347%	8.8356%	8.7896%	8.7189%	8.6982%
Interest on loan	46.19	47.41	46.40	44.39	42.29



DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO FOR 2014-19 (Asset C to G)

(₹ in lakh)

S. No.	Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Repayment	Total
1	BOND XXXVII -DOCO LOAN	9.25	59.80	0.00	19.92	59.80
2	SBI (21.03.2012) - DOCO LOAN 5	10.25	90.32	0.00	24.63	90.32
3	BOND XL -DOCO LOAN 4	9.30	63.00	0.00	15.75	63.00
4	BOND - XLI -DOCO LOAN 1	8.85	108.00	0.00	27.00	108.00
5	BOND - XLII -DOCO LOAN 2	8.80	1304.74	0.00	0.00	1304.74
6	BOND - XLIII -DOCO LOAN 3	7.93	41.89	0.00	6.98	41.89
7	SBI (2014-15) -ADD CAP FOR 2016-17	10.25	0.00	40.85	0.00	40.85
8	SBI (2014-15) -ADD CAP FOR 2017-18	10.25	0.00	29.21	0.00	29.21
9	SBI (2014-15) - ADDCAP FOR 2014-2015	10.25	0.00	71.04	0.00	71.04
10	SBI (2014-15) - ADDCAP FOR 2015-2016	10.25	0.00	4.97	0.00	4.97
11	BOND XLVI -ADDCAP FOR 2014-2015	9.30	0.00	59.65	0.00	59.65
12	BOND L -ADD CAP FOR 2015-16	8.40	0.00	7.60	0.00	7.60
13	BOND L -ADD CAP FOR 2016-17	8.40	0.00	104.67	0.00	104.67
14	BOND LIII -ADD CAP FOR 2016-17	8.13	0.00	10.00	0.00	10.00
15	BOND 58 -ADD CAP FOR 2016-17	7.89	0.00	65.60	0.00	65.60
16	BOND 58 -ADD CAP FOR 2017-18	7.89	0.00	21.70	0.00	21.70
17	BOND60 (LX) -ADD CAP FOR 2017-18	7.20	0.00	20.85	0.00	20.85
18	SBI-04 -ADD CAP FOR 2018-19	8.35	0.00	22.69	0.00	22.69
	Total		1,667.75	458.83	94.28	2,126.58



**WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD
(Asset C to G)**

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	1,667.75	1,798.44	1,811.01	2,032.13	2,103.89
Cumulative repayments of loans up to previous year	0.00	0.00	4.98	32.43	63.36
Net loans opening	1,667.75	1,798.44	1,806.03	1,999.70	2,040.53
Add: drawl(s) during the year	130.69	12.57	221.12	71.76	22.69
Less: repayment(s) of loan during the year	0.00	4.98	27.44	30.93	30.93
Net closing loan	1,798.44	1,806.03	1,999.71	2,040.53	2,032.29
Average net loan	1,733.10	1,802.24	1,902.87	2,020.12	2,036.41
Rate of interest on loan	8.9297%	8.9199%	8.8475%	8.7098%	8.6603%
Interest on loan	154.76	160.76	168.36	175.95	176.36



ANNEXURE-2**DETAILS OF LOAN PORTFOLIO FOR 2019-24****(₹ in lakh)**

S. No.	Particulars	Interest Rate (%)	Loan deployed as on 1.4.2019	Additions during the tariff period	Repayment	Total
1	BOND XXXVII -DOCO FUNDING	9.25	110.00	0.00	45.85	110.00
2	BOND XXXVII -DOCO LOAN	9.25	59.80	0.00	24.90	59.80
3	BOND XXXVII -DODO FUNDING	9.25	172.20	0.00	71.75	172.20
4	SBI (21.03.2012) -ADD CAP FOR 2014-15	8.25	22.52	0.00	10.25	22.52
5	SBI (21.03.2012) -ADD CAP FOR 2016-17	8.25	10.65	0.00	4.85	10.65
6	SBI (21.03.2012) -DOCO LOAN	8.25	2.54	0.00	1.15	2.54
7	SBI (21.03.2012) -DOCO LOAN	8.25	3.21	0.00	1.45	3.21
8	SBI (21.03.2012) -DOCO LOAN 5	8.25	90.32	0.00	41.05	90.32
9	BOND XL -DOCO LOAN 4	9.30	63.00	0.00	26.25	63.00
10	BOND - XLI -DOCO LOAN 1	8.85	108.00	0.00	45.00	108.00
11	BOND - XLII -DOCO XLII	8.80	233.06	0.00	233.06	233.06
12	BOND - XLII -DOCO FUNDING	8.80	152.20	0.00	152.20	152.20
13	BOND - XLII -DOCO LOAN 2	8.80	1304.74	0.00	1304.74	1,304.74
14	BOND - XLIII -DOCO LOAN	7.93	99.06	0.00	41.30	99.06
15	BOND - XLIII -DOCO LOAN 3	7.93	41.89	0.00	17.45	41.89
16	BOND - XLIII -DOCO XLIII	7.93	260.26	0.00	108.45	260.26
17	SBI (2014-15) -ADD CAP FOR 2014-15	8.25	30.56	0.00	15.30	30.56
18	SBI (2014-15) -ADD CAP FOR 2016-17	8.25	40.85	0.00	20.45	40.85
19	SBI (2014-15) -ADD CAP FOR 2017-18	8.25	29.21	0.00	14.60	29.21
20	SBI (2014-15) - ADDCAP FOR 2015-2016	8.25	4.97	0.00	2.50	4.97
21	BOND XLVI -ADDCAP FOR 2014-2015	9.30	59.65	0.00	19.88	59.65
22	BOND L -ADD CAP FOR 2015-16	8.40	14.64	0.00	6.10	14.64



S. No.	Particulars	Interest Rate (%)	Loan deployed as on 1.4.2019	Additions during the tariff period	Repayment	Total
23	BOND L -ADD CAP FOR 2015-16	8.40	7.36	0.00	3.05	7.36
24	BOND L -ADD CAP FOR 2015-16	8.40	7.60	0.00	3.15	7.60
25	BOND L -ADD CAP FOR 2016-17	8.40	104.67	0.00	43.60	104.67
26	BOND LI -ADD CAP FOR 2015-16	8.40	4.06	0.00	1.70	4.06
27	BOND LIII -ADD CAP FOR 2016-17	8.13	10.00	0.00	3.32	10.00
28	BOND 58 -ADD CAP FOR 2016-17	7.89	65.60	0.00	0.00	65.60
29	BOND 58 -ADD CAP FOR 2017-18	7.89	21.70	0.00	0.00	21.70
30	BOND60 (LX) -ADD CAP FOR 2017-18	7.20	20.85	0.00	0.00	20.85
31	SBI-04 -ADD CAP FOR 2018-19	8.35	22.69	0.00	1.13	22.69
32	BOND - XLIII -DOCO LOAN	8.25	71.04	0.00	35.50	71.04
	Total		3,248.90	-	2,299.98	3,248.90

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2019-24 TARIFF PERIOD

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	3248.90	3248.90	3248.90	3248.90	3248.90
Cumulative repayments of loans up to previous year	258.86	395.87	513.82	631.80	2439.74
Net loans opening	2990.04	2853.03	2735.08	2617.10	809.16
Add: drawl(s) during the year	0.00	0.00	0.00	0.00	0.00
Less: repayment(s) of loan during the year	137.01	117.96	117.96	1807.96	119.09
Net closing loan	2853.03	2735.07	2617.12	809.14	690.07
Average net loan	2921.54	2794.05	2676.10	1713.12	749.61
Rate of interest on loan	8.6453%	8.6487%	8.6549%	8.5936%	8.3746%
Interest on loan	252.57	241.65	231.61	147.22	62.78

