

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 78/TT/2020

Coram:

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

Date of Order: 12.10.2021

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 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for transmission assets under "System Strengthening-XXIII" in Southern Region.

And in the matter of:

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

....Petitioner

Vs.

1. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan, Bangalore – 560 009.
2. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha, Hyderabad – 500 082.
3. Kerala State Electricity Board,
Vaidyuthi Bhavanam,
Pattom, Thiruvananthapuram – 695 004.
4. Tamil Nadu Generation and Distribution Corporation Limited,
(Formerly Tamil Nadu Electricity Board -TNEB),
NPKRR Maaligai, 800, Anna Salai, Chennai – 600 002.



5. Electricity Department,
Government of Pondicherry,
Pondicherry – 605001.
6. Eastern Power Distribution Company of Andhra Pradesh Limited,
APEPDCL, P&T Colony,
Seethmmadhara, Vishakhapatnam, Andhra Pradesh.
7. Southern Power Distribution Company of Andhra Pradesh Limited,
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta, Tirupati – 517 501,
Chittoor District, Andhra Pradesh.
8. Central Power Distribution Company of Andhra Pradesh Limited,
Corporate Office, Mint Compound,
Hyderabad – 500 063, Telangana.
9. Northern Power Distribution Company of Andhra Pradesh Limited,
Opp. NIT Petrol Pump, Chaitanyapuri, Kazipet,
Warangal – 506 004, Telangana.
10. Bangalore Electricity Supply Company Limited,
Corporate Office, K.R.Circle,
Bangalore – 560 001, Karnataka.
11. Gulbarga Electricity Supply Company Limited,
Station Main Road, Gulbarga, Karnataka.
12. Hubli Electricity Supply Company Limited,
Navanagar, PB Road, Hubli, Karnataka.
13. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore – 575 001, Karnataka.
14. Chamundeswari Electricity Supply Corporation Limited,
927, L J Avenue,
Ground Floor, New Kantharaj Urs Road,
Saraswatipuram, Mysore – 570 009, Karnataka.
15. Electricity Department,
Government of Goa,
Vidyuti Bhawan, Panaji, Goa – 403 001.
16. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad – 500 082.



17. Tamil Nadu Transmission Corporation,
NPKRR Maaligai, 800, Anna Salai,
Chennai – 600 002.

...Respondents

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

For Respondents : None

ORDER

The instant petition has been filed by the Petitioner, Power Grid Corporation of India Limited, a deemed transmission licensee, for truing-up of transmission tariff for the period from 1.4.2014 to 31.3.2019 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 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 transmission assets under “System Strengthening – XXIII” (hereinafter referred to as “the transmission project”) in Southern Region as follows:

Asset-1: 1x125 MVAR 400 kV Bus Reactor at Hassan along with associated Bays and equipment;

Asset-2: 400/220 kV, 1x500 MVA transformer at Madurai Sub-station along with associated bays and equipment;

Asset-3: 1x125 MVAR 400 kV Bus Reactor at Trivandrum along with associated bays and equipment;

Asset-4: 1x125 MVAR 400 kV Bus Reactor at Narendra (New) along with associated bays and equipment; and



Asset-5: 1x125 MVAR 400 kV Bus Reactor at Gooty, Khammam, Nellore (existing) and Nagarjunasagar along with associated bays and equipment and 1x63 MVAR Switchable Line Reactors at Nellore Pooling Station on each Ckt of Nellore Pooling station-Gooty 400 kV Quad D/C Line.

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

- 1) *“Approve the trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition, as per para 10.2 and 11.0 above.*
- 2) *Approve the Completion cost and additional capitalization incurred during 2014-19 and also projected additional capitalization during 2019-24 tariff block.*
- 3) *Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2014 and Tariff regulations 2019 as per para 10.2 and 11.0 above for respective block.*
- 4) *Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.*
- 5) *Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.*
- 6) *Allow the Initial spares claimed as project as a whole.*
- 7) *Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the respondents.*
- 8) *Allow the petitioner to file a separate petition before Hon’ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses as mentioned at para 11.6 above.*
- 9) *Allow the petitioner to claim the capital spares at the end of tariff block as per actual.*
- 10) *Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is 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 Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice."

Background

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

a) The Investment Approval (IA) for the transmission project was accorded by the Board of Directors of the Petitioner Company vide Memorandum Ref. No. C/CP/SRSS-XXIII dated 3.2.2015 at an estimate cost of ₹20328 lakh including IDC of ₹1246 lakh based on October, 2014 price level. Further the cost of the transmission project was revised and the Revised Cost Estimate (RCE) was approved by the Board of Directors of the Petitioner Company vide Memorandum Ref. No.C/CP/PA1617-03-0X-RCE-012 dated 31.3.2017 at an estimated cost of ₹26003 lakh including IDC of ₹1330 lakh based on August, 2016 price level.

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

Sub Station

a. Extension of 400/220 kV Sub-station at Madurai

- i. Provision of 400/220 kV, 1x500 MVA transformer
- ii. 1 number 400 kV transformer bay for 1x500 MVA transformer
- iii. 1 number 230 kV transformer bay for 1x500 MVA transformer

b. Extension of 400/220 kV Sub-station at Somanhalli

Replacement of 7 x167 MVA, 400/220 kV ICTs with 2x500 MVA ICTs
(The replaced ICTs shall be maintained as a regional spare)

c. Procurement of 2 numbers 500 MVA, 765/400 kV Regional spare ICTs

Reactive Compensation

a. Bus Reactors (400 kV)



- 1x125 MVAR 400 kV Bus reactor at Gooty, Hassan, Khammam, Trivandrum, Nellore (existing), Narendra (New) and Nagarjunasagar Sub-station
- 2x63 MVAR bus reactors at Yelahanka Sub-station
- Replacement of 1x50 MVAR bus reactor with 1x125 MVAR bus reactor at 400/220 kV Narendra Sub-station (The replaced bus reactor shall be maintained as a regional spare) Line Reactors (400 kV)
- 1x63 MVAR Switchable line reactors at Nellore pooling station on each Ckt of Nellore pooling Station – Gooty 400 kV Quad D/c line.

c) The scope of work under the transmission project is not complete and separate petitions have been filed in respect of the remaining transmission assets. The details of the transmission assets covered in various petitions are as follows:

Assets	COD	Covered Under
Asset-1: 1x125 MVAR 400 kV Bus Reactor at Hassan along with associated bays and equipment.	18.12.2016	Current Petition No: 78/TT/2020 (True up of Petition No. 58/TT/2017 filed for 2014-19 period)
Asset-2: 400/220 kV, 1x500 MVA transformer at Madurai Sub-station alongwith associated bays and equipment.	31.12.2016	
Asset-3: 1x125 MVAR 400 kV Bus Reactor at Trivandrum along with associated bays and equipment.	26.1.2017	
Asset-4: 1x125 MVAR 400 kV Bus Reactor at Narendra (New) along with associated bays and equipment.	30.12.2016	
Asset-5: 1x125 MVAR 400 kV Bus Reactor at Gooty, Khammam, Nellore (existing) & Nagarjunasagar along with associated bays and equipment and 1x63 MVAR Switchable Line Reactors at Nellore Pooling Station on each Ckt of Nellore pooling station-Gooty 400 kV Quad D/C Line.	28.3.2017	



Replacement of 3x167 MVA, 400/220 kV ICTs with 1x500 MVA ICT at Somanhalli Sub-station*	16.3.2017	(Petition No: 505/TT/2020 i.e. Separate petition filed for 2014-19 tariff period). The transmission assets were initially covered in Petition No. 58/TT/2017 wherein their nomenclature was "Asset-V(a), Asset-V(b), Asset-VI, Asset-XIII and Asset-XII") and tariff in respect of them was claimed for 2014-19 period. The Commission vide its order dated 5.7.2018 in Petition No. 58/TT/2017 excluded the instant transmission assets from the said petition and directed the Petitioner for filing a separate petition.)
Replacement of 4x167 MVA, 400/220 kV ICTs with 1x500 MVA ICT at Somanhalli Sub-station*	31.3.2017	
Replacement of 1x50MVAR Bus reactor with 1x125 MVAR Bus reactor at 400/220 kV Narendra Sub-station*	25.1.2017	
01 Number 500 MVA, 765/400 kV Regional Spare ICTs at Thiruvallur Sub-station	28.3.2017	
01 Number 500 MVA, 765/400 kV Regional Spare ICTs at Raichur Sub-station	6.2.2019	
1x63 MVAR 400 kV Bus Reactor-I along with associated bays and equipment at Yelahanka GIS #	2.1.2020	
1x63 MVAR 400 kV Bus Reactor-II along with associated bays and equipment at Yelahanka GIS #	13.1.2020	Petition vide Diary No. 664/2020 has been filed for determination of tariff as per 2019 Tariff Regulations.

d) As per IA dated 29.1.2015, transmission assets under the transmission project were scheduled to be put under commercial operation within 30 months from the date of IA. The nomenclature of transmission assets, their scheduled commercial operation date (SCOD), date of commercial operation (COD) and time over-run are as follows:

Assets nomenclature in the instant Petition	SCOD	COD	Time Over-run
Asset-1	29.7.2017	18.12.2016	No Time over run
Asset-2		31.12.2016	
Asset-3		26.1.2017	
Asset-4		30.12.2016	
Asset-5		28.3.2017	

e) The tariff for 2014-19 period in respect of the transmission assets covered in the instant petition was allowed by the Commission vide order dated 5.7.2018 in Petition No. 58/TT/2017.



f) Annual Fixed Charges (AFC) approved by the Commission and the trued-up tariff claimed by the Petitioner in respect of the transmission assets for 2014-19 tariff period are as follows:

(₹ in lakh)				
Asset	Particulars	2016-17	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	64.15	256.69	276.75
	Claimed by the Petitioner	65.12	261.42	281.40
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	112.30	505.96	545.62
	Claimed by the Petitioner	112.44	507.70	546.93
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	42.91	287.47	322.05
	Claimed by the Petitioner	42.97	283.66	312.97
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	44.90	195.04	210.29
	Claimed by the Petitioner	45.49	193.93	204.49
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	13.31	1401.42	1573.91
	Claimed by the Petitioner	13.42	1360.13	1495.59

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

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



6. The hearing in this matter was held on 22.6.2021 through video conference and order was reserved.

7. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 24.12.2019 and vide affidavit dated 29.9.2020.

8. Having heard the representatives of the Petitioner and after perusal of material on record, we proceed to dispose of the petition.

Truing-up of Annual Fixed Charges for 2014-19 tariff period

9. The details of the trued-up transmission charges claimed by the Petitioner in respect of the transmission assets are as follows:

(₹ in lakh)

Asset-1			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 104 days)		
Depreciation	14.80	62.69	69.97
Interest on Loan	14.46	58.21	60.10
Return on Equity	15.58	66.45	74.56
O&M Expenses	18.34	66.51	68.71
Interest on Working Capital	1.94	7.56	8.06
Total	65.12	261.42	281.40

(₹ in lakh)

Asset-2			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 91 days)		
Depreciation	26.03	122.90	137.23
Interest on Loan	26.78	119.93	123.67
Return on Equity	29.14	137.60	154.06
O&M Expenses	27.28	113.06	116.81
Interest on Working Capital	3.21	14.21	15.16
Total	112.44	507.70	546.93



(₹ in lakh)

Asset-3			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 65 days)		
Depreciation	9.72	68.07	78.26
Interest on Loan	9.65	64.83	69.41
Return on Equity	10.88	76.21	87.86
O&M Expenses	11.46	66.51	68.71
Interest on Working Capital	1.26	8.04	8.73
Total	42.97	283.66	312.97

(₹ in lakh)

Asset-4			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 92 days)		
Depreciation	10.05	44.27	48.16
Interest on Loan	9.54	39.92	40.08
Return on Equity	10.65	47.06	51.40
O&M Expenses	13.87	56.84	58.73
Interest on Working Capital	1.38	5.84	6.12
Total	45.49	193.93	204.49

(₹ in lakh)

Asset-5			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 4 days)		
Depreciation	2.83	301.77	348.34
Interest on Loan	2.86	289.03	308.35
Return on Equity	3.07	329.33	382.42
O&M Expenses	4.25	399.06	412.26
Interest on Working Capital	0.41	40.94	44.22
Total	13.42	1360.13	1495.59

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

(₹ in lakh)

Asset-1			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 104 days)		
O&M Expenses	5.36	5.54	5.73
Maintenance Spares	9.66	9.98	10.31
Receivables	38.09	43.57	46.90



Total	53.11	59.09	62.94
Rate of Interest (in %)	12.80%	12.80%	12.80%
Interest on Working Capital	1.94	7.56	8.06

(₹ in lakh)

Asset-2			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 91 days)		
O&M Expenses	9.12	9.42	9.73
Maintenance Spares	16.41	16.96	17.52
Receivables	75.17	84.62	91.16
Total	100.70	111.00	118.41
Rate of Interest (in %)	12.80%	12.80%	12.80%
Interest on Working Capital	3.21	14.21	15.16

(₹ in lakh)

Asset-3			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 65 days)		
O&M Expenses	5.36	5.54	5.73
Maintenance Spares	9.66	9.98	10.31
Receivables	40.22	47.28	52.16
Total	55.24	62.80	68.20
Rate of Interest (%)	12.80%	12.80%	12.80%
Interest on Working Capital	1.26	8.04	8.73

(₹ in lakh)

Asset-4			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 92 days)		
O&M Expenses	4.59	4.74	4.89
Maintenance Spares	8.25	8.53	8.81
Receivables	30.08	32.32	34.08
Total	42.92	45.59	47.78
Rate of Interest (in %)	12.80%	12.80%	12.80%
Interest on Working Capital	1.38	5.84	6.12

(₹ in lakh)

Asset-5			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata 4 days)		
O&M Expenses	32.19	33.26	34.36
Maintenance Spares	57.93	59.86	61.84
Receivables	203.87	226.69	249.27



Total	293.99	319.81	345.47
Rate of Interest (in %)	12.80%	12.80%	12.80%
Interest on Working Capital	0.41	40.94	44.22

Capital Cost

11. The capital cost and Admitted Capital Expenditure (ACE) approved by the Commission in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017 are as follows:

Asset	Actual Capital Cost as on COD	ACE	Total Capital Cost as on 31.3.2019
Asset-1	847.97	422.07	1270.04
Asset-2	1883.82	729.49	2613.31
Asset-3	960.93	598.24	1559.17
Asset-4	696.09	237.48	933.57
Asset-5	4746.1	2190.8	6936.9
Total	9134.91	4178.08	13312.99

12. The Petitioner has claimed capital cost of ₹12758.45 lakh in respect of the transmission assets as on 31.3.2019. The Petitioner vide Auditor's Certificate dated 30.7.2019 has submitted the capital cost up to COD along with ACE up to 31.3.2019. The details of the approved apportioned capital cost, capital cost as on COD and ACE incurred up to 31.3.2019 as claimed by the Petitioner in the instant petition in respect of the transmission assets are as follows:

Asset	Apportioned approved cost as per FR	Apportioned approved cost as per RCE	Expenditure up to COD	ACE			Cost as on 31.3.2019
				2016-17	2017-18	2018-19	
Asset-1	975.12	1472.38	869.08	154.32	222.44	24.2	1270.04
Asset-2	1955.26	2885.65	1920.22	186.85	477.69	28.55	2613.31
Asset-3	1343.4	1818.09	976.36	144.72	351.67	18.93	1491.68
Asset-4	844.65	1059.57	707.56	37.78	112.97	17.63	875.94
Asset-5	5784.13	7940.88	4830.89	0	1565.07	111.52	6507.48
Total	10902.56	15176.57	9304.11	523.67	2729.84	200.83	12758.45



Cost Over-Run

13. The completion cost claimed by Petitioner including ACE in respect of the transmission assets is ₹12758.45 lakh which is within the approved apportioned cost as per RCE of ₹15176.57 lakh. Therefore, there is no cost over-run in respect of the transmission assets.

Time Over-run

14. The details with regard to SCOD and actual COD of the transmission assets are as follows:

Asset	SCOD	COD	Time Over-run
Asset-1	29.7.2017	18.12.2016	Nil
Asset-2		31.12.2016	
Asset-3		26.1.2017	
Asset-4		30.12.2016	
Asset-5		28.3.2017	

15. Accordingly, there is no time over-run in respect of the transmission assets.

Interest During Construction (IDC)

16. The Petitioner has claimed IDC in respect of the transmission assets and has submitted the Auditor's Certificates in support of the same. The Petitioner has submitted computation of IDC along with year-wise details of IDC discharged.

17. The allowable IDC has been worked out considering the information submitted by the Petitioner for individual asset separately on cash basis. The loan details submitted in Form-9C for 2014-19 tariff period and IDC computation sheet have been considered for the purpose of IDC calculation on cash and accrued basis. It is observed that loan amount as indicated in Form-9C and the details as submitted for IDC computation are not matching. Accordingly, we have adjusted the IDC loan



amount to the extent indicated in Form-9C. The undischarged IDC as on COD has been considered as ACE during the year in which it has been discharged.

18. Accordingly, based on the information furnished by the Petitioner, IDC allowed is as follows:

(₹ in lakh)

Asset	IDC claimed by Petitioner (as per Auditor's Certificate)	Entitled IDC up to SCOD	IDC disallowed as on SCOD due to computational difference	Undischarged portion of entitled IDC as on SCOD	IDC allowed on cash basis as on SCOD
	A	B	C=A-B	D	E=B-D
Asset-1	27.36	27.18	0.18	20.93	6.25
Asset-2	44.78	44.74	0.04	36.36	8.38
Asset-3	22.73	22.64	0.09	15.34	7.30
Asset-4	16.01	15.89	0.12	11.35	4.54
Asset-5	119.95	119.75	0.20	84.59	35.16

Incidental Expenditure During Construction (IEDC)

19. The Petitioner has submitted that entire IEDC claimed in the Auditor's certificate is on cash basis and has been paid up to COD of the transmission assets. Hence, the entire amount of IEDC has been considered. The details of IEDC claimed and allowed are as follows:

(₹ in lakh)

Asset	IEDC claimed as per Auditor's Certificate	IEDC allowed as on COD
	1	2
Asset-1	67.87	67.87
Asset-2	149.96	149.96
Asset-3	38.87	38.87
Asset-4	53.51	53.51
Asset-5	22.81	22.81

Initial Spares

20. The Petitioner has claimed the following Initial Spares in respect of the transmission assets and prayed to revise the Initial Spares allowed earlier in the light



of judgement of the Appellate Tribunal for Electricity (APTEL) dated 14.9.2019 in Appeal No. 74 of 2017. Initial Spares claimed by the Petitioner are as follows:

Asset	Particulars	Estimated Completion Cost (₹ in lakh)	Initial Spares Claimed (₹ in lakh)	Ceiling as per Regulations (Brown Field) (in %)
Asset-1	Sub-station	1174.81	66.25	6.0
Asset-2	Sub-station	2418.57	102.99	6.0
Asset-3	Sub-station	1430.08	68.25	6.0
Asset-4	Sub-station	806.42	42.26	6.0
Asset-5	Sub-station	6371.02	333.04	6.0
Total		12200.9	612.79	

21. The Petitioner has submitted the discharge of Initial Spares as follows:

Asset	Initial Spares claimed for Sub-station	Expenditure on Initial Spares up to COD as per Auditor's certificate	Actual Expenditure on initial spares (₹ in lakh)	
			Actual Expenditure on Initial Spares in 2016-17 (Additional Capitalization)	Actual Expenditure on initial spares in 2017-18 (Additional Capitalization)
Asset-1	66.25	50.93	0.00	15.32
Asset-2	102.99	77.25	12.87	12.87
Asset-3	68.25	51.18	0.00	17.07
Asset-4	42.26	31.70	10.56	0.00
Asset-5	333.04	238.84	0.00	94.20

22. We have considered the submissions of the Petitioner. As per APTEL's judgment dated 14.9.2019 in Appeal No. 74 of 2017, Initial Spares are to be allowed as per the ceiling on overall project cost. However, in the present case, the entire scope of the transmission project has not been completed as on 31.3.2019. The remaining scope of the work of the transmission project as follows:

Replacement of 3x167 MVA, 400/220 kV ICTs with 1x500 MVA ICT at Somanhalli Sub-station*	16.3.2017	The Petitioner has submitted that a separate petition is being filed for determination of transmission tariff for 2014-19 period.
Replacement of 4x167 MVA, 400/220 kV ICTs with 1x500 MVA ICT at Somanhalli Sub-station*	31. 3.2017	
Replacement of 1x50 MVAR Bus reactor with 1x125 MVAR Bus reactor at 400/220 kV Narendra Sub-station*	25.1.2017	
01 Number 500 MVA, 765/400 kV Regional Spare ICTs at Thiruvallam Sub-station*	28.3.2017	
01 Number 500 MVA, 765/400 kV Regional Spare	6.2.2019	



ICTs at Raichur Sub-station*	
2x63 MVAR bus reactors at Yelahanka Sub-station	The Petitioner has submitted that the transmission asset is under implementation and shall be commissioned during 2019-24 tariff period.

23. Overall project cost of the transmission assets can be ascertained only when all the transmission assets are combined. Therefore, Initial Spares are allowed on the basis of cost of the individual asset during 2014-19 tariff period and excess Initial Spares are not allowed. However, the claim for excess initial spares shall be considered when all the transmission assets are combined and entire scope of work of the transmission project is completed.

24. Accordingly, the details of Initial Spares allowed in respect of the transmission assets for 2014-19 tariff period are as follows:

Asset	Plant & machinery cost up to cut-off date (excluding IDC and IEDC as per Auditor's certificate) (A) (₹ in lakh)	Initial Spares claimed (B) (₹ in lakh)	Ceiling (in %) (C)	Allowable Initial Spares worked out	Excess Initial Spares (₹ in lakh)	Initial Spares allowed (₹ in lakh)
				$D = \frac{[(A-B)*C]}{100-C}$		
Asset-1	1174.81	66.25	6	70.76	0.00	66.25
Asset-2	2418.57	102.99	6	147.80	0.00	102.99
Asset-3	1430.08	68.25	6	86.93	0.00	68.25
Asset-4	806.42	42.26	6	40.22	2.04	40.22
Asset-5	6371.02	333.04	6	385.40	0.00	333.04

25. The year wise discharge of Initial Spares are as follows:

Asset	Initial Spares claimed for Sub-station	Expenditure on initial spares up to COD as per Auditor's certificate	Expenditure on Initial Spares in 2016-17	Expenditure on initial spares in 2017-18	Expenditure on initial spares in 2019-20	(₹ in lakh)
						Initial Spares allowed (₹ in lakh)
Asset-1	66.25	50.93	0.00	15.32	0.00	66.25
Asset-2	102.99	77.25	12.87	12.87	0.00	102.99
Asset-3	68.25	51.18	0.00	17.07	0.00	68.25



Asset-4	42.26	31.70	8.52	0.00	2.04	40.22*
Asset-5	333.04	238.84	0.00	94.20	0.00	333.04

*Initial spares restricted

Capital cost as on COD

26. Accordingly, capital cost allowed as on COD is as follows:

Asset	Capital cost as on COD as per Auditor's Certificate*	Less: IDC as on COD due to		Less: IEDC disallowed as on COD	Excess Initial Spares	Capital cost considered as on COD
		Computational difference	Undischarged			
		Asset- 1	869.08			
Asset- 2	1920.22	0.04	36.36	0.00	0.00	1883.82
Asset- 3	976.36	0.09	15.34	0.00	0.00	960.93
Asset- 4	707.56	0.12	11.35	0.00	0.00	696.09
Asset- 5	4830.89	0.20	84.59	0.00	0.00	4746.09

*The Petitioner has submitted that Initial Spares discharged up to COD are included in the capital cost as on COD as claimed in the Auditor's Certificate and has been considered accordingly.

Additional Capital Expenditure ("ACE")

27. The Commission allowed ACE in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017 as follows:

Asset	ACE			Total
	2016-17	2017-18	2018-19	
	Asset-1	154.32	227.75	
Asset-2	186.85	487.64	55.00	729.49
Asset-3	144.72	418.52	35.00	598.24
Asset-4	37.78	164.70	35.00	237.48
Asset-5	0.00	2190.80	0.00	2190.80
Total	523.67	3489.41	165.00	4178.08

28. The Petitioner has claimed the following ACE in respect of the transmission assets and submitted Auditor's Certificate in support of the same:

Asset	ACE			Total
	2016-17	2017-18	2018-19	
	Asset-1	154.32	222.44	
Asset-2	186.85	477.69	28.55	693.09



Asset-3	144.72	351.67	18.93	515.32
Asset-4	37.78	112.97	17.63	168.38
Asset-5	0.00	1565.07	111.52	1676.59
Total	523.67	2729.84	200.83	3454.34

29. The cut-off date in respect of the transmission assets works out as follows:

Asset	COD	Cut-off date
Asset-1	18.12.2016	31.3.2019
Asset-2	31.12.2016	31.3.2019
Asset-3	26.1.2017	31.3.2020
Asset-4	30.12.2016	31.3.2019
Asset-5	28.3.2017	31.3.2020

30. ACE claimed includes the accrued IDC discharged during 2014-19 period. It is observed that the total estimated completion cost including ACE for 2014-19 period is within the approved cost as per FR.

31. ACE claimed by the Petitioner has been allowed under Regulations 14(1)(i) and Regulation 14(1)(ii) of the 2014 Tariff Regulations which pertain to un-discharged liabilities recognized to be payable at a future date and liabilities towards works deferred for execution respectively.

32. The un-discharged IDC as on COD has been allowed as ACE. The details of ACE allowed are as follows:

(₹ in lakh)

Asset-1	ACE		
	2016-17	2017-18	2018-19
ACE to the extent of Balance & Retention Payments and work deferred for execution	109.29	115.23	16.97
ACE to the extent of unexecuted work	45.03	107.21	7.23
Add: IDC Discharged	0.00	20.93	0.00
Total ACE allowed	154.32	243.37	24.20

(₹ in lakh)

Asset-2	ACE		
	2016-17	2017-18	2018-19
ACE to the extent of Balance & Retention Payments and work deferred for execution	126.43	308.00	10.91



ACE to the extent of unexecuted work	60.42	169.69	17.64
Add: IDC Discharged	0.00	36.36	0.00
Total ACE allowed	186.85	514.05	28.55

(₹ in lakh)

Asset-3	ACE		
	2016-17	2017-18	2018-19
ACE to the extent of Balance & Retention Payments and work deferred for execution	144.72	235.09	7.05
ACE to the extent of unexecuted work	0.00	116.58	11.88
Add: IDC Discharged	0.00	15.34	0.00
Total ACE allowed	144.72	367.01	18.93

(₹ in lakh)

Asset-4	ACE		
	2016-17	2017-18	2018-19
ACE to the extent of Balance & Retention Payments and work deferred for execution	19.67	98.59	17.63
ACE to the extent of unexecuted work	18.11	14.38	0.00
Add: IDC Discharged	0.00	11.34	0.00
Less: Excess initial spares	2.04	0.00	0.00
Total ACE allowed	35.74	124.31	17.63

(₹ in lakh)

Asset-5	ACE		
	2016-17	2017-18	2018-19
ACE to the extent of Balance & Retention Payments and work deferred for execution	0.00	1190.32	78.61
ACE to the extent of unexecuted work	0.00	374.75	32.91
Add: IDC Discharged	0.00	84.59	0.00
Total ACE allowed	0.00	1649.66	111.52

Capital Cost for 2014-19 tariff period

33. Accordingly, capital cost in respect of the transmission assets considered for 2014-19 tariff period is as follows:

(₹ in lakh)

Asset	Apportioned Approved Cost as per RCE	Capital cost as on COD on cash basis	ACE			Total Capital cost as on 31.3.2019
			2016-17	2017-18	2018-19	
Asset-1	1472.38	847.97	154.32	243.37	24.20	1269.86
Asset-2	2885.65	1883.82	186.85	514.05	28.55	2613.27
Asset-3	1818.09	960.93	144.72	367.01	18.93	1491.59
Asset-4	1059.57	696.09	35.74	124.32	17.63	873.78



Asset-5	7940.88	4746.09	0.00	1649.66	111.52	6507.27
Total	15176.57	9134.90	521.63	2898.42	200.83	12755.78

34. The completion cost including additional capital expenditure in respect of the transmission assets is ₹12755.78 lakh which is within the approved apportioned capital cost of ₹15176.57 lakh.

Debt-Equity Ratio

35. The Petitioner has considered debt-equity ratio of 70:30 as on COD and for ACE post-COD. Debt-equity ratio of 70:30 has been considered for capital cost as on COD and ACE during 2014-19 period as provided under Regulation 19 of the 2014 Tariff Regulations. The details of debt-equity ratio in respect of the transmission assets as on COD and as on 31.3.2019 are as follows:

Asset-1	As on COD		As on 31.3.2019	
	Amount	(in %)	Amount	(in %)
	(₹ in lakh)		(₹ in lakh)	
Debt	593.58	70.00	888.91	70.00
Equity	254.39	30.00	380.95	30.00
Total	847.97	100.00	1269.86	100.00
Asset-2	As on COD		As on 31.3.2019	
	Amount	(in %)	Amount	(in %)
	(₹ in lakh)		(₹ in lakh)	
Debt	1318.67	70.00	1829.30	70.00
Equity	565.15	30.00	783.97	30.00
Total	1883.82	100.00	2613.27	100.00
Asset-3	As on COD		As on 31.3.2019	
	Amount	(in %)	Amount	(in %)
	(₹ in lakh)		(₹ in lakh)	
Debt	672.65	70.00	1044.11	70.00
Equity	288.28	30.00	447.48	30.00
Total	960.93	100.00	1491.59	100.00
Asset-4	As on COD		As on 31.3.2019	
	Amount	(in %)	Amount	(in %)
	(₹ in lakh)		(₹ in lakh)	
Debt	487.26	70.00	611.65	70.00
Equity	208.83	30.00	262.13	30.00
Total	696.09	100.00	873.78	100.00
Asset-5	As on COD		As on 31.3.2019	



	Amount	(in %)	Amount	(in %)
	(₹ in lakh)		(₹ in lakh)	
Debt	3322.26	70.00	4555.09	70.00
Equity	1423.83	30.00	1952.18	30.00
Total	4746.09	100.00	6507.27	100.00

Depreciation

36. Depreciation claimed by the Petitioner in respect of Asset-1 and Asset-4 were found to be higher than the depreciation allowed for the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017. The Petitioner has neither explained any reason for claiming higher depreciation nor made any specific prayer in this regard. It is noticed that the Petitioner has apportioned a part of capital expenditure to IT equipment (segregating the same from sub-station) and claimed higher depreciation @ 15% while in the earlier orders, the Petitioner had claimed depreciation @ 5.28% for these transmission assets (as it was claimed under sub-station). Similar issue came up in Petition No. 19/TT/2020 wherein the Commission vide order dated 9.5.2020 observed that depreciation @ 5.28% has been considered for IT Equipment as part of the sub-station up to 31.3.2019 while truing up the capital expenditure for 2014-19 period. During 2019-24 tariff period, the IT Equipment has been considered separately and depreciation has been allowed @15% for the balance depreciable value of IT Equipment in accordance with Regulation 33 of the 2019 Tariff Regulations.

37. Based on the Commission's order dated 9.5.2020 Petition No. 19/TT/2020, depreciation @ 5.28% has been considered for IT Equipment with respect to Asset-1, Asset-4 and Asset-5 as part of the sub-station up to 31.3.2019 while truing up the capital expenditure for 2014-19 period. The Gross Block during 2014-19 tariff period in respect of the transmission assets has been depreciated at Weighted Average



Rate of Depreciation (WAROD) and working of WAROD for 2014-19 period in respect of Asset-1, Asset-2, Asset-3, Asset-4, and Asset-5 is given at Annexure-I and Annexure-II. WAROD has been worked out after considering the depreciation rates of the transmission assets as specified in the 2014 Tariff Regulations and depreciation approved during 2014-19 tariff period is as follows:

(₹ in lakh)

Asset-1			
Particulars	2016-17 (Pro rata for 104 days)	2017-18	2018-19
Opening Gross Block	847.97	1002.29	1245.66
ACE	154.32	243.37	24.20
Closing Gross Block	1002.29	1245.66	1269.86
Average Gross Block	925.13	1123.98	1257.76
Weighted Average Rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%
Balance useful life at the beginning of the year (Year)	24.00	23.00	22.00
Aggregated Depreciable Value	832.62	1011.58	1131.99
Depreciation during the year	13.92	59.35	66.41
Cumulative depreciation at the end of the year	13.92	73.26	139.67
Remaining Aggregated Depreciable Value	818.70	938.32	992.31

(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro rata for 91 days)	2017-18	2018-19
Opening Gross Block	1883.82	2070.67	2584.72
ACE	186.85	514.05	28.55
Closing Gross Block	2070.67	2584.72	2613.27
Average Gross Block	1977.25	2327.69	2598.99
Weighted Average Rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%
Balance useful life at the beginning of the year (Year)	25.00	25.00	24.00
Aggregated Depreciable Value	1779.52	2094.92	2339.09
Depreciation during the year	26.03	122.90	137.23
Cumulative depreciation at the end of the year	26.03	148.93	286.16
Remaining Aggregated Depreciable Value	1753.49	1945.99	2052.94



(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro rata for 65 days)	2017-18	2018-19
Opening Gross Block	960.93	1105.65	1472.66
ACE	144.72	367.01	18.93
Closing Gross Block	1105.65	1472.66	1491.59
Average Gross Block	1033.29	1289.15	1482.13
Weighted Average Rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%
Balance useful life at the beginning of the year (Year)	25.00	25.00	24.00
Aggregated Depreciable Value	929.96	1160.24	1333.91
Depreciation during the year	9.72	68.07	78.26
Cumulative depreciation at the end of the year	9.72	77.78	156.04
Remaining Aggregated Depreciable Value	920.24	1082.46	1177.87

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro rata for 92 days)	2017-18	2018-19
Opening Gross Block	696.09	731.83	856.15
ACE	35.74	124.32	17.63
Closing Gross Block	731.83	856.15	873.78
Average Gross Block	713.96	793.99	864.97
Weighted Average Rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%
Balance useful life at the beginning of the year (Year)	24	24	23
Aggregated Depreciable Value	642.56	714.59	778.47
Depreciation during the year	9.50	41.92	45.67
Cumulative depreciation at the end of the year	9.50	51.42	97.09
Remaining Aggregated Depreciable Value	633.06	663.17	681.38

(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro rata for 4 days)	2017-18	2018-19
Opening Gross Block	4746.09	4746.09	6395.75
ACE	0.00	1649.66	111.52
Closing Gross Block	4746.09	6395.75	6507.27
Average Gross Block	4746.09	5570.92	6451.51
Weighted Average Rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%
Balance useful life at the beginning of the year (Year)	25	25	24
Aggregated Depreciable Value	4271.48	5013.83	5806.36
Depreciation during the year	2.75	294.14	340.64



Cumulative depreciation at the end of the year	2.75	296.89	637.53
Remaining Aggregated Depreciable Value	4268.73	4716.94	5168.83

38. The details of depreciation allowed in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)				
Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	13.92	58.93	66.00
	Claimed by the Petitioner in the instant petition	14.80	62.69	69.97
	Approved after true-up in this order	13.92	59.35	66.41
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	26.03	122.21	136.53
	Claimed by the Petitioner in the instant petition	26.03	122.90	137.23
	Approved after true-up in this order	26.03	122.90	137.23
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	9.72	69.43	81.40
	Claimed by the Petitioner in the instant petition	9.72	68.07	78.26
	approved after true-up in this order	9.72	68.07	78.26
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	9.52	43.10	48.37
	Claimed by the Petitioner in the instant petition	10.05	44.27	48.16
	approved after true-up in this order	9.50	41.92	45.67
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	2.75	307.46	364.33
	Claimed by the Petitioner in the instant petition	2.83	301.77	348.34
	Approved after true-up in this order	2.75	294.14	340.64



Interest on Loan (“IoL”)

39. The Petitioner has claimed the weighted average rate of IoL, based on its actual loan portfolio and rate of interest. IoL is calculated based on actual interest rate, in accordance with Regulation 26 of the 2014 Tariff Regulations. The details of IoL allowed in respect of the transmission assets are as follows:

(₹ in lakh)

Asset-1			
Particulars	2016-17 (Pro rata for 104 days)	2017-18	2018-19
Gross Normative Loan	593.58	701.60	871.97
Cumulative Repayments up to Previous Year	0.00	13.92	73.26
Net Loan-Opening	593.58	687.69	798.71
Addition due to ACE	108.02	170.37	16.94
Repayment during the year	13.92	59.35	66.41
Net Loan-Closing	687.69	798.71	749.24
Average Loan	640.63	743.20	773.97
Weighted Average Rate of Interest on Loan (in %)	7.925%	7.859%	7.825%
Interest on Loan	14.47	58.41	60.56

(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro rata for 91 days)	2017-18	2018-19
Gross Normative Loan	1318.67	1449.47	1809.31
Cumulative Repayments up to Previous Year	0.00	26.03	148.93
Net Loan-Opening	1318.67	1423.45	1660.38
Addition due to ACE	130.80	359.83	19.99
Repayment during the year	26.03	122.90	137.23
Net Loan-Closing	1423.45	1660.38	1543.14
Average Loan	1371.06	1541.91	1601.76
Weighted Average Rate of Interest on Loan (in %)	7.833%	7.778%	7.721%
Interest on Loan	26.78	119.92	123.67

(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro rata for 65 days)	2017-18	2018-19
Gross Normative Loan	672.65	773.95	1030.86
Cumulative Repayments up to Previous Year	0.00	9.72	77.78



Net Loan-Opening	672.65	764.24	953.08
Addition due to ACE	101.30	256.91	13.25
Repayment during the year	9.72	68.07	78.26
Net Loan-Closing	764.24	953.08	888.07
Average Loan	718.44	858.66	920.58
Weighted Average Rate of Interest on Loan (in %)	7.541%	7.550%	7.539%
Interest on Loan	9.65	64.83	69.40

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro rata for 92 days)	2017-18	2018-19
Gross Normative Loan	487.26	512.28	599.31
Cumulative Repayments up to Previous Year	0.00	9.50	51.42
Net Loan-Opening	487.26	502.78	547.88
Addition due to ACE	25.02	87.03	12.34
Repayment during the year	9.50	41.92	45.67
Net Loan-Closing	502.78	547.88	514.55
Average Loan	495.02	525.33	531.22
Weighted Average Rate of Interest on Loan (in %)	7.639%	7.602%	7.583%
Interest on Loan	9.53	39.94	40.28

(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro rata for 4 days)	2017-18	2018-19
Gross Normative Loan	3322.26	3322.26	4477.03
Cumulative Repayments up to Previous Year	0.00	2.75	296.89
Net Loan-Opening	3322.26	3319.52	4180.13
Addition due to ACE	0.00	1154.76	78.06
Repayment during the year	2.75	294.14	340.64
Net Loan-Closing	3319.52	4180.13	3917.56
Average Loan	3320.89	3749.83	4048.85
Weighted Average Rate of Interest on Loan (in %)	6.981%	7.716%	7.637%
Interest on Loan	2.54	289.33	309.22

40. The details of IoL allowed in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:



(₹ in lakh)

Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	14.47	58.12	60.54
	Claimed by the Petitioner in the instant petition	14.46	58.21	60.10
	Approved after true-up in this order	14.47	58.41	60.56
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	26.78	120.37	125.03
	Claimed by the Petitioner in the instant petition	26.78	119.93	123.67
	Approved after true-up in this order	26.78	119.92	123.67
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	9.65	66.06	72.32
	Claimed by the Petitioner in the instant petition	9.65	64.83	69.41
	Approve after true-up in this order	9.65	64.83	69.40
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	9.55	41.22	43.06
	As claimed by the Petitioner in the instant petition	9.54	39.92	40.08
	Approved after true-up in this order	9.53	39.94	40.28
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	2.86	309.43	343.34
	As claimed by the Petitioner in the instant petition	2.86	289.03	308.35
	Approved after true-up in this order	2.54	289.33	309.22

Return on Equity (“RoE”)

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

Year	Claimed effective tax (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



42. The Commission vide order dated 27.4.2020 in Petition No. 274/TT/2019, had arrived at the effective tax rate for the Petitioner based on the notified MAT rates which are as follows:

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

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

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

44. The Petitioner has also requested the Commission to allow it to claim the differential tariff on account of trued-up RoE based on effective rate calculated on completion of income tax assessment/re-assessment for 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.

45. Accordingly, RoE allowed in respect of the transmission assets are as follows:

(₹ in lakh)			
Asset-1			
Particulars	2016-17 (Pro rata for 104 days)	2017-18	2018-19
Opening Equity	254.39	300.69	373.69
Addition due to ACE	46.30	73.01	7.26



Closing Equity	300.69	373.69	380.95
Average Equity	277.54	337.19	377.32
Return on Equity (Base Rate) (in %)	15.500%	15.500%	15.500%
Tax Rate applicable (in %)	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
Return on Equity (Pre-tax)	15.58	66.44	74.55

(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro rata for 91 days)	2017-18	2018-19
Opening Equity	565.15	621.20	775.41
Addition due to ACE	56.05	154.21	8.56
Closing Equity	621.20	775.41	783.97
Average Equity	593.17	698.30	779.69
Return on Equity (Base Rate) (in %)	15.500%	15.500%	15.500%
Tax Rate applicable (in %)	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
Return on Equity (Pre-tax)	29.14	137.60	154.05

(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro rata for 65 days)	2017-18	2018-19
Opening Equity	288.28	331.69	441.80
Addition due to ACE	43.42	110.10	5.68
Closing Equity	331.69	441.80	447.48
Average Equity	309.99	386.75	444.64
Return on Equity (Base Rate) (in %)	15.500%	15.500%	15.500%
Tax Rate applicable (in %)	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
Return on Equity (Pre-tax)	10.88	76.21	87.85

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro rata for 92 days)	2017-18	2018-19
Opening Equity	208.83	219.55	256.85
Addition due to ACE	10.72	37.30	5.29
Closing Equity	219.55	256.85	262.13
Average Equity	214.19	238.20	259.49
Return on Equity (Base Rate) (in %)	15.500%	15.500%	15.500%
Tax Rate applicable (in %)	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
Return on Equity (Pre-tax)	10.64	46.94	51.27

(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro rata for 4 days)	2017-18	2018-19
Opening Equity	1423.83	1423.83	1918.73
Addition due to ACE	0.00	494.90	33.46



Closing Equity	1423.83	1918.73	1952.18
Average Equity	1423.83	1671.28	1935.45
Return on Equity (Base Rate) (in %)	15.500%	15.500%	15.500%
Tax Rate applicable (in %)	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
Return on Equity (Pre-tax)	3.07	329.32	382.41

46. The details of RoE allowed in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)				
Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	15.51	65.66	73.54
	Claimed by the Petitioner in the instant petition	15.58	66.45	74.56
	Approved after true-up in this order	15.58	66.44	74.55
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	29.00	136.16	152.12
	Claimed by the Petitioner in the instant petition	29.14	137.60	154.06
	Approved after true-up in this order	29.14	137.60	154.05
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	10.83	77.36	90.70
	Claimed by the Petitioner in the instant petition	10.88	76.21	87.86
	Approved after true-up in this order	10.88	76.21	87.85
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	10.60	48.02	53.89
	Claimed by the Petitioner in the instant petition	10.65	47.06	51.40
	Approved after true-up in this order	10.64	46.94	51.27
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	3.06	343.66	408.10
	Claimed by the Petitioner in the instant petition	3.07	329.33	382.42
	Approved after true-up in this order	3.07	329.32	382.41

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

47. Regulation 29(4) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The total O&M Expenses in respect of the transmission assets claimed by the Petitioner are as follows:



(₹ in lakh)

Asset-1			
Particulars	2016-17 (Pro-rata 104 days)	2017-18	2018-19
Sub-station bays (Number)			
400 kV Sub-station	1	1	1
Norm (₹ lakh/bay)			
400 kV Sub-station	64.37	66.51	68.71
Total O&M Expenses	18.34	66.51	68.71

(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro-rata 91 days)	2017-18	2018-19
Sub-station bays (Number)			
400 kV Sub-station	1	1	1
220 kV Sub-station	1	1	1
Norm (₹ lakh/bay)			
400 kV Sub-station	64.37	66.51	68.71
220 kV Sub-station	45.06	46.55	48.1
Total Sub-station O&M Expenses	27.28	113.06	116.81

(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro-rata 65 days)	2017-18	2018-19
Sub-station bays (Number)			
400 kV Sub-station	1	1	1
Norm (₹ lakh/bay)			
400 kV Sub-station	64.37	66.51	68.71
Total O&M Expenses	11.46	66.51	68.71

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro-rata 92 days)	2017-18	2018-19
Sub-station bays (Number)			
400 kV GIS Sub-station	1	1	1
Norm (₹ lakh/bay)			
400 kV GIS Sub-station	55.02	56.84	58.73
Total O&M Expenses	13.87	56.84	58.73



(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro-rata 4 days)	2017-18	2018-19
Sub-station bays (Number)			
400 kV Sub-station	6	6	6
Norm (₹ lakh/bay)			
400 kV Sub-station	64.37	66.51	68.71
Total O&M Expenses	4.23	399.06	412.26

48. O&M Expenses claimed are in accordance with the 2014 Tariff Regulations and are accordingly allowed.

49. The details of O&M Expenses allowed in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and as trued up in the instant order are as follows:

(₹ in lakh)

Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	18.34	66.51	68.71
	Claimed by the Petitioner in the instant petition	18.34	66.51	68.71
	Approved after true-up in this order	18.34	66.51	68.71
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	27.28	113.06	116.81
	Claimed by the Petitioner in this petition	27.28	113.06	116.81
	Approved after true-up in this order	27.28	113.06	116.81
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	11.46	66.51	68.71
	Claimed by the Petitioner in the instant petition	11.46	66.51	68.71
	Approved after true-up in this order	11.46	66.51	68.71
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	13.87	56.84	58.73
	Claimed by the Petitioner in the instant petition	13.87	56.84	58.73
	Approved after true-up in this order	13.87	56.84	58.73
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	4.23	399.06	412.26
	Claimed by the Petitioner in the instant petition	4.25	399.06	412.26
	Approved after true-up in this order	4.23	399.06	412.26



Interest on Working Capital (“IWC”)

50. The Petitioner is entitled to claim IWC as per Regulation 28 of the 2014 Tariff Regulations.

51. IWC allowed in respect of the transmission assets are as follows:

(₹ in lakh)

Asset-1			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata for 104 days)		
Working Capital for O&M Expenses (O&M Expenses for one month)	5.36	5.54	5.73
Working Capital for Maintenance Spares (15% of O&M Expenses)	9.66	9.98	10.31
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	37.57	43.03	46.37
Total of Working Capital	52.59	58.55	62.40
Rate of Interest on working capital (in %)	12.80%	12.80%	12.80%
Interest of Working Capital	1.92	7.49	7.99

(₹ in lakh)

Asset-2			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata for 91 days)		
Working Capital for O&M Expenses (O&M expenses for one month)	9.12	9.42	9.73
Working Capital for Maintenance Spares (15% of O&M Expenses)	16.41	16.96	17.52
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	75.17	84.62	91.15
Total of Working Capital	100.70	111.00	118.41
Rate of Interest on working capital (in %)	12.80%	12.80%	12.80%
Interest of Working Capital	3.21	14.21	15.16

(₹ in lakh)

Asset-3			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata for 65 days)		
Working Capital for O&M Expenses (O&M Expenses for one month)	5.36	5.54	5.73
Working Capital for Maintenance Spares (15% of O&M Expenses)	9.66	9.98	10.31
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	40.21	47.28	52.16
Total of Working Capital	55.23	62.79	68.19



Rate of Interest on working capital (in %)	12.80%	12.80%	12.80%
Interest of Working Capital	1.26	8.04	8.73

(₹ in lakh)

Asset-4			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata for 92 days)		
Working Capital for O&M Expenses (O&M Expenses for one month)	4.59	4.74	4.89
Working Capital for Maintenance Spares (15% of O&M Expenses)	8.25	8.53	8.81
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	29.70	31.90	33.67
Total of Working Capital	42.54	45.17	47.37
Rate of Interest on working capital (in %)	12.80%	12.80%	12.80%
Interest of Working Capital	1.37	5.78	6.06

(₹ in lakh)

Asset-5			
Particulars	2016-17	2017-18	2018-19
	(Pro-rata for 4 days)		
Working Capital for O&M Expenses (O&M expenses for one month)	32.19	33.26	34.36
Working Capital for Maintenance Spares (15% of O&M Expenses)	57.93	59.86	61.84
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	197.68	225.44	248.10
Total of Working Capital	287.79	318.55	344.29
Rate of Interest on working capital (in %)	12.80%	12.80%	12.80%
Interest of Working Capital	0.40	40.77	44.07

52. The details of IWC allowed in respect of the transmission assets vide order dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)

Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017.	1.92	7.46	7.96
	Claimed by the Petitioner in the instant petition	1.94	7.56	8.06
	Approved after true-up in this order	1.92	7.49	7.99
Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	3.21	14.17	15.13
	Claimed by the Petitioner in the instant	3.21	14.21	15.16



	petition			
	Approved after true-up in this order	3.21	14.21	15.16
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	1.26	8.12	8.92
	Claimed by the Petitioner in the instant petition	1.26	8.04	8.73
	Approved after true-up in this order	1.26	8.04	8.73
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	1.37	5.86	6.24
	Claimed by the Petitioner in the instant petition	1.38	5.84	6.12
	Approved after true-up in this order	1.37	5.78	6.06
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	0.41	41.82	45.89
	Claimed by the Petitioner in the instant petition	0.41	40.94	44.22
	Approved after true-up in this order	0.40	40.77	44.07

Approved Annual Fixed Charges for 2014-19 Tariff Period

53. Accordingly, Annual Fixed Charges (AFC) in respect of the transmission assets after trueing-up for 2014-19 tariff period are as follows:

(₹ in lakh)

Asset-1			
Particulars	2016-17 (Pro rata for 104 days)	2017-18	2018-19
Depreciation	13.92	59.35	66.41
Interest on Loan	14.47	58.41	60.56
Return on Equity	15.58	66.44	74.55
O&M Expenses	18.34	66.51	68.71
Interest on Working Capital	1.92	7.49	7.99
Total	64.23	258.20	278.22

(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro rata for 91 days)	2017-18	2018-19
Depreciation	26.03	122.90	137.23
Interest on Loan	26.78	119.92	123.67
Return on Equity	29.14	137.60	154.05
O&M Expenses	27.28	113.06	116.81
Interest on Working Capital	3.21	14.21	15.16
Total	112.44	507.69	546.91



(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro rata for 65 days)	2017-18	2018-19
Depreciation	9.72	68.07	78.26
Interest on Loan	9.65	64.83	69.40
Return on Equity	10.88	76.21	87.85
O&M Expenses	11.46	66.51	68.71
Interest on Working Capital	1.26	8.04	8.73
Total	42.96	283.65	312.95

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro rata for 92 days)	2017-18	2018-19
Depreciation	9.50	41.92	45.67
Interest on Loan	9.53	39.94	40.28
Return on Equity	10.64	46.94	51.27
O&M Expenses	13.87	56.84	58.73
Interest on Working Capital	1.37	5.78	6.06
Total	44.91	191.42	202.01

(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro rata for 4 days)	2017-18	2018-19
Depreciation	2.75	294.14	340.64
Interest on Loan	2.54	289.33	309.22
Return on Equity	3.07	329.32	382.41
O&M Expenses	4.23	399.06	412.26
Interest on Working Capital	0.40	40.77	44.07
Total	13.00	1352.63	1488.59

54. The details of Annual Transmission Charges allowed in respect of the transmission assets vide orders dated 5.7.2018 in Petition No. 58/TT/2017, as claimed by the Petitioner in the instant petition and as trued up in the instant order are as follows:

(₹ in lakh)

Asset	Particulars	2016-17 (Pro-rata)	2017-18	2018-19
Asset-1	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	64.15	256.69	276.75
	Claimed by the Petitioner in the instant petition	65.12	261.42	281.40
	Approved after true-up in this order	64.23	258.20	278.22



Asset-2	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	112.30	505.96	545.62
	Claimed by the Petitioner in the instant petition	112.44	507.70	546.93
	Approved after true-up in this order	112.44	507.69	546.91
Asset-3	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	42.91	287.47	322.05
	Claimed by the Petitioner in the instant petition	42.97	283.66	312.97
	Approved after true-up in this order	42.96	283.65	312.95
Asset-4	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	44.90	195.04	210.29
	Claimed by the Petitioner in the instant order	45.49	193.93	204.49
	Approved after true-up in this order	44.91	191.42	202.01
Asset-5	Allowed vide order dated 5.7.2018 in Petition No. 58/TT/2017	13.31	1401.42	1573.91
	Claimed by the Petitioner in the instant petition	13.42	1360.13	1495.59
	Approved after true-up in this order	13.00	1352.63	1488.59

Determination of Annual Fixed Charges for 2019-24 tariff period

55. The Petitioner has submitted the combined tariff forms for Asset-1, Asset-2, Asset-3, Asset-4 and Asset-5 whose COD has been achieved prior to 1.4.2019. Accordingly, as per proviso (i) of Regulation 8(1) of the 2019 Tariff Regulations, single tariff in respect of the Combined Asset has been worked out for 2019-24 tariff period.

56. The Petitioner has claimed the following transmission charges in respect of the Combined Asset for 2019-24 tariff period:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	689.09	690.93	690.93	690.93	682.26
Interest on Loan	558.84	507.94	456.21	404.60	350.85
Return on Equity	721.88	724.88	724.88	724.88	724.88
O&M Expenses	513.37	531.62	550.29	569.86	589.37
Interest on Working Capital	51.99	52.20	52.23	52.31	52.12
Total	2535.17	2507.57	2474.54	2442.58	2399.48



57. The Petitioner has claimed the following IWC in respect of the Combined Asset for 2019-24 tariff period:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	42.78	44.30	45.86	47.49	49.11
Maintenance Spares	77.01	79.74	82.54	85.48	88.41
Receivables	311.70	309.15	305.08	301.14	295.02
Total	431.49	433.19	433.48	434.11	432.54
Rate of Interest on working capital (in %)	12.05%	12.05%	12.05%	12.05%	12.05%
Interest on Working Capital	51.99	52.20	52.23	52.31	52.12

Effective Date of Commercial Operation (“E-COD”)

58. The Petitioner has claimed E-COD of the Combined Asset as 2.6.2018. Accordingly, based on the trued-up admitted capital cost and actual COD of all the assets, E-COD has been worked out as follows:

Computation of E-COD					
Asset	Actual COD	Admitted Capital Cost as on 31.3.2019	Weight of the cost (in %)	Number of days from last COD	Weighted Days
Asset-1	18.12.2016	1269.86	9.96	100.00	9.96
Asset-2	31.12.2016	2613.27	20.49	87.00	17.83
Asset-3	26.01.2017	1491.59	11.69	61.00	7.13
Asset-4	30.12.2016	873.78	6.85	88.00	6.01
Asset-5	28.03.2017	6507.27	51.01	0.00	0.00
E-COD (Latest COD – Total weighted Days) 15.2.2017					

59. E-COD is used to determine the lapsed life of the project as a whole which works out as (2) years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019 from E-COD).

Weighted Average Life (“WAL”)

60. The life as defined in Regulation 33 of the 2019 Tariff Regulations has been considered for determination of WAL.



61. Combined Asset may have multiple elements such as land, building, transmission line, Sub-station and PLCC and each element may have different span of life. Therefore, the concept of WAL has been used as the useful life of the project as a whole.

62. 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. The element-wise life as defined in the 2014 Tariff Regulations prevailing at the time of actual COD of individual asset has been ignored for this purpose. The life as defined in the 2019 Tariff Regulations has been considered for determination of WAL. Accordingly, WAL of the Combined Asset has been worked out as 25 years and the same is as follows:

Admitted Capital Cost as on 31.03.2019				
Particulars	Combined Cost	Life as per 2019 Regulation (Years) (b)	Weight (a) x (b)	WAL = Total Weight/ Capital Cost of the project
	(₹ in lakh) (a)			
Sub-station Equipment	12615.87	25	315396.81	
IT Equipment and Software	139.90	7	932.69	
Total	12755.78		316329.50	24.80 (rounded of to 25 Years)

63. WAL as on 1.4.2019 as determined above is applicable prospectively (i.e. for 2019-24 tariff period onwards) and no retrospective adjustment of depreciation in previous tariff period is required to be done. As discussed above, E-COD of the Combined Asset is 15.2.2017 and the lapsed life of the project as a whole, works out as two (2) years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019



from E-COD). Accordingly, WAL has been used to determine the remaining useful life as on 31.3.2019 to be 23 years.

Capital Cost

64. Regulations 19 of the 2019 Tariff Regulations provide as follows:

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

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

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



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

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

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

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

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

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

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

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

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



65. The Petitioner has claimed the capital cost of individual asset which has been added to arrive at the capital cost claimed during 2019-24 period in respect of the Combined Asset as per following details:

(₹ in lakh)

Asset	AppORTIONED APPROVED FR CAPITAL COST	AppORTIONED APPROVED COST AS PER RCE	Capital Cost claimed as on 31.3.2019	ACE	Estimated Completion Cost as on 31.3.2024
				(as per Auditor's Certificate) 2019-20	
Asset-1	975.12	1472.38	1270.04	0.00	1270.04
Asset-2	1955.26	2885.65	2613.31	0.00	2613.31
Asset-3	1343.40	1818.09	1491.68	0.00	1491.68
Asset-4	844.65	1059.57	875.94	0.00	875.94
Asset-5	5784.13	7940.88	6507.48	106.31	6613.79
Total	10902.56	15176.57	12758.46	106.31	12864.76

66. Against the overall apportioned approved capital cost (as per RCE) of ₹15176.57 lakh, the estimated completion cost is ₹12864.76 lakh. The individual capital cost of each transmission asset is also within the respective RCE apportioned capital cost. Therefore, there is no cost over-run in respect of the Combined Asset.

67. The capital cost has been dealt in line with Regulation 19(3) of the 2019 Tariff Regulations. The element-wise capital cost (i.e. land, building, transmission line, sub-station and PLCC) as admitted by the Commission as on 31.3.2019 for the transmission assets is clubbed together and capital cost has been considered for Combined Asset as on 1.4.2019 and the same is as follows:

(₹ in lakh)

Particulars	Asset-1	Asset-2	Asset-3	Asset-4	Asset-5	Capital cost for Combined Asset as on 31.3.2019
Sub-Station Equipment	1233.32	2613.27	1491.59	849.52	6428.17	12615.87
IT Equipment and Software	36.54	0.00	0.00	24.26	79.10	139.90
Total	1269.86	2613.27	1491.59	873.78	6507.27	12755.78



Additional Capital Expenditure (“ACE”)

68. Regulation 24 of the 2019 Tariff Regulations provide as follows:

“24. Additional Capitalization 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.”*



69. The Petitioner has claimed projected ACE for 2019-24 tariff period on account of balance and retention payments due to un-discharged liability projected for works executed within the cut-off date and unexecuted works within cuff-off date. The details of the projected ACE in respect of the Combined Asset are as follows:

(₹ in lakh)		
Particulars	Regulation	ACE 2019-24
ACE to the extent of Balance & Retention Payments and work deferred for execution before cut-off date/ after cut-off date.	Regulation 24(1)(a) and regulation 24(1)(b) of the 2019 Tariff Regulations.	106.31

70. ACE claimed above on account of balance and retention payments and deferred works is allowed under Regulation 24(1)(a) and Regulation 24(1)(b) of the 2019 Tariff Regulations.

Capital cost for 2019-24 tariff period

71. The capital cost of the Combined Asset considered for 2019-24 tariff period, subject to truing-up, is as follows:

(₹ in lakh)		
Capital Cost allowed as on 1.4.2019	ACE allowed for the year 2019-24	Total Estimated Completion Cost up to 31.3.2024
12755.78	106.31	12862.09

Debt-Equity Ratio

72. Regulation 18 of the 2019 Tariff Regulations provide 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.”

73. The details of debt-equity ratio considered for the purpose of tariff for 2019-24 tariff period in respect of the Combined Asset is as follows:

Combined Asset	(₹ in lakh)			
	Capital Cost as on 1.4.2019 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	8929.06	70.00	9003.48	70.00
Equity	3826.72	30.00	3858.61	30.00
Total	12755.78	100.00	12862.09	100.00

Depreciation

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



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

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

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

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

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

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

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

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

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

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

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



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

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

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

75. We have considered the submissions of the Petitioner. IT equipment has been considered as a part of the Gross Block and depreciated using WAROD. WAROD has been worked out and is given in Annexure-2 after taking into account the depreciation rates of IT and non-IT assets as prescribed in the 2019 Tariff Regulations. The salvage value of IT equipment has been considered nil, i.e. IT assets have been considered as 100 per cent depreciable. Depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. Depreciation allowed in respect of the Combined Asset is as follows:

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	12755.78	12862.09	12862.09	12862.09	12862.09
Addition during 2019-24 due to Projected ACE	106.31	0.00	0.00	0.00	0.00
Closing Gross Block	12862.09	12862.09	12862.09	12862.09	12862.09
Average Gross Block	12808.93	12862.09	12862.09	12862.09	12862.09
Weighted Average Rate of Depreciation (WAROD) (in %)	5.38	5.37	5.37	5.37	5.37
Balance Useful life at the beginning of the year (Year)	23	22	21	20	19
Aggregated Depreciable Value	10225.53	9584.43	8893.65	8202.88	7512.10
Combined Depreciation during the year	688.94	690.78	690.78	690.78	690.78
Cumulative Depreciation at the end of the year	2005.44	2696.21	3386.99	4077.77	4768.54
Remaining Aggregated	9536.59	8893.65	8202.88	7512.10	6821.32



Depreciable Value Total					
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Interest on Loan (“IoL”)

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

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

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

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

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year. (5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

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

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

(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”.*

77. The weighted average rate of IoL has been considered on the basis of the rate prevailing as on 1.4.2019. The Petitioner has prayed that change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period will be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the



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

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	8929.06	9003.48	9003.48	9003.48	9003.48
Cumulative Repayments up to Previous Year	1316.50	2005.44	2696.21	3386.99	4077.77
Net Loan-Opening	7612.56	6998.04	6307.26	5616.49	4925.71
Addition due to ACE	74.42	0.00	0.00	0.00	0.00
Repayment during the year	688.94	690.78	690.78	690.78	690.78
Net Loan-Closing	6998.04	6307.26	5616.49	4925.71	4234.93
Average Loan	7305.30	6652.65	5961.88	5271.10	4580.32
Weighted Average Rate of Interest on Loan (in %)	7.678	7.666	7.687	7.716	7.700
Interest on Loan	560.89	510.02	458.31	406.74	352.67

Return on Equity (“RoE”)

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

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

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

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

Provided further that:

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

ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report



submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

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

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

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

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%;

$$\text{Rate of return on equity} = 15.50 / (1-0.24) = 20.395\%$$

(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.”

79. RoE allowed in respect of the Combined Asset under Regulation 30 of the 2019

Tariff Regulations is as follows:

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	3826.72	3858.61	3858.61	3858.61	3858.61
Addition due to ACE	31.89	0.00	0.00	0.00	0.00
Closing Equity	3858.61	3858.61	3858.61	3858.61	3858.61
Average Equity	3842.66	3858.61	3858.61	3858.61	3858.61
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)	721.73	724.72	724.72	724.72	724.72

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

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

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



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more sub-conductors)	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single Conductor)	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.319	2.401	2.485	2.572	2.662
Multi Circuit (Twin & Triple Conductor)	1.544	1.598	1.654	1.713	1.773
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;
- ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;
- iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);



- iv. the O&M expenses of ± 800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ± 800 kV, Bishwanath-Agra HVDC bi-pole scheme;
- v. the O&M expenses of ± 800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ± 800 kV, Bishwanath-Agra HVDC bi-pole scheme; and
- vi. the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.

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

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

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

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

81. O&M Expenses claimed by the Petitioner for 2019-24 period is as follows:

(₹ in lakh)					
O&M Expenses for sub-station	2019-20	2020-21	2021-22	2022-23	2023-24
400 kV Sub-station					
Number of units	9	9	9	9	9
O&M Expenses claimed	289.35	299.52	310.05	320.94	332.19
400 kV Sub-station ICT					
Number of units	1	1	1	1	1
O&M Expenses claimed	179.00	185.50	192.00	199.00	205.50
400 kV GIS Sub-station					
Number of Units	1	1	1	1	1
O&M Expenses claimed	22.51	23.30	24.12	24.96	25.84
220 kV Sub-station					
Number of units	1	1	1	1	1
O&M Expenses claimed	22.51	23.30	24.12	24.96	25.84
Total	513.37	531.62	550.29	569.86	589.37



82. O&M Expenses claimed by the Petitioner are in accordance with Regulations 35(3) of the 2019 Tariff Regulations and the same is allowed in respect of the Combined Asset as follows:

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station bays (Number)					
400 kV Sub-station	9	9	9	9	9
220 kV Sub-station	1	1	1	1	1
400 kV GIS Sub-station	1	1	1	1	1
Norm (₹ lakh/bay)					
400 kV Sub-station	32.15	33.28	34.45	35.66	36.91
220 kV Sub-station	22.51	23.30	24.12	24.96	25.84
400 kV GIS Sub-station	22.51	23.30	24.12	24.96	25.84
O&M Expenses-Sub-stations	334.37	346.12	358.29	370.86	383.87
Transformers					
400 kV ICT (units)	1	1	1	1	1
MVA	500	500	500	500	500
Norm (₹ lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
O&M Expenses-Transformers	179.00	185.50	192.00	199.00	205.50
Total O&M Expenses	513.37	531.62	550.29	569.86	589.37

* The Petitioner has not claimed any O&M towards PLCC.

Interest on Working Capital ("IWC")

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

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

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

(i) Receivables equivalent to 45 days of annual fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and

(iii) Operation and maintenance expenses, including security expenses for one month.



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

Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.

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

“3. Definition - In these regulations, unless the context otherwise requires:-

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

84. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The rate of IWC considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, the rate of interest for 2020-21 has been considered as 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points), whereas the rate of interest for 2021-22 onwards has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon in respect of the Combined Asset are as follows:

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	42.78	44.30	45.86	47.49	49.11
Working Capital for Maintenance Spares (15% of O&M Expenses)	77.00	79.74	82.54	85.48	88.41
Working Capital for Receivables (Equivalent to 45 days of annual fixed cost / annual transmission)	311.92	308.94	304.46	300.53	295.45



charges)					
Total of Working Capital	431.70	432.98	432.86	433.50	432.97
Rate of Interest for Working Capital (%)	12.05	11.25	10.50	10.50	10.50
Interest of working capital	52.02	48.71	45.45	45.52	45.46

Annual Fixed Charges for 2019-24 Tariff Period

85. The various components of the AFC in respect of the Combined Asset for 2019-24 tariff period are as follows:

(₹ in lakh)					
Combined Asset					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	688.94	690.78	690.78	690.78	690.78
Interest on Loan	560.89	510.02	458.31	406.74	352.67
Return on Equity	721.73	724.72	724.72	724.72	724.72
Interest on Working Capital	513.37	531.62	550.29	569.86	589.37
O&M Expenses	52.02	48.71	45.45	45.52	45.46
Total	2536.95	2505.84	2469.55	2437.62	2403.00

Filing Fee and Publication Expenses

86. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 70(1) of the 2019 Tariff Regulations. The Petitioner shall be entitled for reimbursement of 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

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

Goods and Services Tax

88. The Petitioner has submitted that if GST is levied at any rate and at any point of time in future on charges of transmission of electricity, the same shall be borne and



additionally paid by the Respondent(s) to the Petitioner and the same shall be charged and billed separately by the Petitioner. Further additional taxes, if any, are to be paid by the Petitioner on account of demand from Government/Statutory Authorities, the same may be allowed to be recovered from the beneficiaries.

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

Security Expenses

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

91. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for the Combined Asset owned by it on projected basis for 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The Commission vide order dated 3.8.2021 in Petition No. 260/MP/2020 approved security expenses from 1.4.2019 to 31.3.2024. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.



Capital Spares

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

Sharing of Transmission Charges

93. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission system was governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2010. With effect from 1.11.2020, the 2010 Sharing Regulations has been repealed and sharing of transmission charges is governed by the provisions of the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and 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.

94. To summarise:

- a) Trued-up AFC allowed in respect of the transmission assets for 2014-19 tariff period are as follows:

(₹ in lakh)			
Asset-1			
Particulars	2016-17 (Pro rata for 104 days)	2017-18	2018-19
AFC	64.23	258.20	278.22



(₹ in lakh)

Asset-2			
Particulars	2016-17 (Pro rata for 91 days)	2017-18	2018-19
AFC	112.44	507.69	546.91

(₹ in lakh)

Asset-3			
Particulars	2016-17 (Pro rata for 65 days)	2017-18	2018-19
AFC	42.96	283.65	312.95

(₹ in lakh)

Asset-4			
Particulars	2016-17 (Pro rata for 92 days)	2017-18	2018-19
AFC	44.91	191.42	202.01

(₹ in lakh)

Asset-5			
Particulars	2016-17 (Pro rata for 4 days)	2017-18	2018-19
AFC	13.00	1352.63	1488.59

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

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Combined Asset	2536.95	2505.84	2469.55	2437.62	2403.00

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

96. This order disposes of Petition No. 78/TT/2020 in terms of the above discussions and findings.

sd/-
(P.K. Singh)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson



**2014-19
True-Up**

**Annexure-I
Asset-1
(₹ lakh)**

Particulars	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE 2014-19	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
					2016-17	2017-18	2018-19
Building				3.34	0.00	0.00	0.00
Transmission Line				5.28	0.00	0.00	0.00
Sub Station	815.88	417.44	1233.32	5.28	47.15	57.53	64.48
PLCC				6.33	0.00	0.00	0.00
Leasehold Land				3.34	0.00	0.00	0.00
IT Equipment and software	32.09	4.45	36.54	5.28	1.69	1.81	1.93
Total	847.97	421.89	1269.86		48.85	59.35	66.41
Weighted Average Rate of Depreciation (%)					5.28%	5.28%	5.28%
Average Gross Block (₹ in lakh)					925.13	1123.98	1257.76



2014-19
True-Up

Annexure-I
Asset-2
(₹ lakh)

Particulars	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE 2014-19	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
					2016-17	2017-18	2018-19
Building				3.34	0.00	0.00	0.00
Transmission Line				5.28	0.00	0.00	0.00
Sub Station	1883.82	729.45	2613.27	5.28	104.40	122.90	137.23
PLCC				6.33	0.00	0.00	0.00
Leasehold Land				3.34	0.00	0.00	0.00
IT Equipment and software				5.28	0.00	0.00	0.00
Total	1883.82	729.45	2613.27		104.40	122.90	137.23
Weighted Average Rate of Depreciation (%)					5.28%	5.28%	5.28%
Average Gross Block (₹ in lakh)					1977.25	2327.69	2598.99



2014-19
True-Up

Annexure-I
Asset-3
(₹ lakh)

Particulars	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE 2014-19	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
					2016-17	2017-18	2018-19
Building				3.34	0.00	0.00	0.00
Transmission Line				5.28	0.00	0.00	0.00
Sub Station	960.93	530.66	1491.59	5.28	54.56	68.07	78.26
PLCC				6.33	0.00	0.00	0.00
Leasehold Land				3.34	0.00	0.00	0.00
IT Equipment and software				5.28	0.00	0.00	0.00
Total	960.93	530.66	1491.59		54.56	68.07	78.26
Weighted Average Rate of Depreciation (%)					5.28%	5.28%	5.28%
Average Gross Block (₹ in lakh)					1033.29	1289.15	1482.13



Particulars	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE 2014-19	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
					2016-17	2017-18	2018-19
Building				3.34			
Transmission Line				5.28			
Sub Station	674.52	175.01	849.52	5.28	36.56	40.71	44.39
PLCC				6.33			
Leasehold Land				3.34			
IT Equipment and software	21.57	2.68	24.26	5.28	1.14	1.21	1.28
Total	696.09	177.69	873.78		37.70	41.92	45.67
Weighted Average Rate of Depreciation (%)					5.28%	5.28%	5.28%
Average Gross Block (₹ in lakh)					713.96	793.99	864.97



Particulars	Admitted Capital Cost as on 1.4.2014 (₹ in lakh)	ACE 2014-19	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
					2016-17	2017-18	2018-19
Building				3.34			
Transmission Line				5.28			
Sub Station	4668.38	1759.79	6428.17	5.28	246.49	290.00	336.46
PLCC			0.00	6.33	0.00	0.00	0.00
Leasehold Land			0.00	3.34	0.00	0.00	0.00
IT Equipment and software	77.71	1.39	79.10	5.28	4.10	4.14	4.18
Total	4746.09	1761.18	6507.27		250.59	294.14	340.64
Weighted Average Rate of Depreciation (%)					5.28%	5.28%	5.28%
Average Gross Block (₹ in lakh)					4746.09	5570.92	6451.51



**2019-24
Determination**

**Annexure
-II**

**Combined Asset
(₹ lakh)**

Particulars	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	ACE 2019-24	Admitted Capital Cost as on 1.4.2024 (₹ in lakh)	Rate of Depreciation (in %)	Annual Depreciation as per Regulations (₹ in lakh)				
					2019-20	2020-21	2021-22	2022-23	2023-24
Buildings	0.00	100.00	100.00		1.67	3.34	3.34	3.34	3.34
Transmission Line	0.00	0.00	0.00	5.28	0.00	0.00	0.00	0.00	0.00
Sub Station	12615.87	6.31	12622.18	5.28	666.28	666.45	666.45	666.45	666.45
PLCC	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
Leasehold land	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
IT Equipment and Software	139.90	0.00	139.90	15.00	20.99	20.99	20.99	20.99	20.99
Total	12755.78	106.31	12862.09		688.94	690.78	690.78	690.78	690.78
Weighted Average Rate of Depreciation (in %)					5.38%	5.37%	5.37%	5.37%	5.37%
Average Gross Block (₹ in lakh)					12808.93	12862.09	12862.09	12862.09	12862.09

