

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 10/TT/2020

Coram:

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

Date of Order: 09.06.2021

In the matter of:

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and truing up of transmission tariff of the 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of the 2019-24 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for Combined Asset under "System Strengthening-VII in Southern Regional Grid" in Southern Region.

And in the matter of:

Power Grid Corporation of India Ltd.,
"Saudamini", Plot No. 2,
Sector 29, Gurgaon-122001

....Petitioner

Vs

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



5. Electricity Department,
Govt of Pondicherry,
Pondicherry – 605001.
6. Eastern Power Distribution Company of Andhra Pradesh Ltd. (APEPDCL),
APEPDCL, P&T Colony, Seethmmadhara,
Vishakhapatnam, Andhra Pradesh.
7. Southern Power Distribution Company of Andhra Pradesh Ltd. (APSPDCL),
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta,
Tirupati – 517 501,
Chittoor District, Andhra Pradesh.
8. Central Power Distribution Company of Andhra Pradesh Ltd. (APCPDCL),
Corporate Office, Mint Compound,
Hyderabad – 500 063, Andhra Pradesh.
9. Northern Power Distribution Company of Andhra Pradesh Ltd. (APNPDCL),
Opp. NIT Petrol Pump, Chaitanyapuri, Kazipet,
Warangal – 506 004, Andhra Pradesh.
10. Bangalore Electricity Supply Company Ltd. (BESCOM),
Corporate Office, K.R. Circle.
Bangalore – 560 001, Karnataka.
11. Gulbarga Electricity Supply Company Ltd. (GESCOM),
Station Main Road,
Gulbarga, Karnataka.
12. Hubli Electricity Supply Company Ltd. (HESCOM),
Navanagar, PB Road,
Hubli, Karnataka.
13. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore – 575 001, Karnataka.
14. Chamundeswari Electricity Supply Corporation Ltd. (CESC),
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 Ltd.,
Vidhyut Sudha, Khairatabad,
Hyderabad – 500 082.

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

...Respondent(s)

For Petitioner : Shri S.S. Raju, PGCIL
Shri A.K. Verma, PGCIL
Shri B. Dash, PGCIL
Shri Ved Prakash Rastogi, PGCIL

For Respondents : Shri B. Vinodh Kanna, Advocate, TANGEDCO
Shri Shahbaz Husain, Advocate, KPTCL
Ms. R. Ramalakshmi, TANGEDCO
Mr. R. Srinivasan, TANGEDCO

ORDER

The instant petition has been filed by Power Grid Corporation of India Ltd.(PGCIL), 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 determination of transmission tariff for the period from 1.4.2019 to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of the Combined Asset comprising of the following transmission assets under “System Strengthening–VII in Southern Regional Grid” in Southern Region (hereinafter referred to as “the transmission project”):



Asset-1: LILO of circuit one 400 kV Trichy-Madurai at Karaikudi along with 1x80 MVar Bus Reactor and associated bays and equipment at 400/230 kV Karaikudi Sub-station;

Asset-2: 2X315 MVA Auto Transformers and 230 kV Down Stream System along with associated bays and equipment at 400 kV/ 230 kV Karaikudi Sub-station;

Asset-3: LILO of one circuit of existing Talaguppa-Neelamangala 400 kV D/C line along with 1x80 MVar Line Reactor at Hassan; and

Asset-4: 400/220 kV, 2X315 MVA Transformers and Downstream System with associated bays and equipment at Hassan Sub-station.

2. The Petitioner has made the following prayers in the instant 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 5 and 6 above.

2) 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 9 and 10 above for respective block.

3) 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.

4) 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.

5) 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.

6) 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 6.6 above.

7) Allow the petitioner to claim the capital spares at the end of tariff block as per actual.



8) 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) and expenditure sanction for the transmission project was accorded by the Board of Directors of the Petitioner vide Memorandum No. C/CP/RCE-SR-VII dated 20.12.2010 for ₹32509 lakh, including an IDC of ₹2854 lakh based on 2nd Quarter, 2010 price level.

(b) The entire scope of work covered under the transmission project has been completed and is being dealt under the instant petition.

(c) COD of transmission assets that are part of the Combined Asset are as follows:

Assets	COD
Asset-1*	1.8.2009
Asset-2	1.8.2009
Asset-3*	1.6.2010
Asset-4	1.7.2010

**During the 2009-14 tariff period, the Assets 1 and 3 were combined with notional COD of 1.6.2010 and are referred to as "Combined Asset 1 & 3". However, all transmission assets were combined as on 1.4.2014 and tariff was allowed for the Combined Asset.*

(d) The transmission tariff from COD to 31.3.2014 was allowed vide order dated 1.6.2011 in Petition No. 72/2010 and vide order dated 19.8.2011 in Petition No. 310/2010. The transmission tariff of the transmission assets covered in the instant petition from their respective COD to 31.3.2014 was trued-up vide order dated 23.2.2016 in Petition No. 549/TT/2014 and in the same petition, the transmission tariff for the 2014-19 tariff period was also allowed for the Combined Asset.

4. The Respondents are distribution licensees, power utilities, power departments 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 application 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 made any submissions during the hearing of the matter. Learned counsel for TANGEDCO present during the hearing submitted that he did not intend to make any submissions in the matter.

6. The hearing in this matter was held on 18.5.2021 through video conference and the order was reserved.

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

8. This order is issued considering the submissions made by the Petitioner in the petition dated 29.10.2019.

Truing up of Annual Fixed Charges for the 2014-19 Tariff Period

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

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1633.03	1633.03	1633.03	1633.03	1633.03
Interest on Loan	1366.83	1215.81	1064.80	913.79	762.77
Return on Equity	1869.19	1877.76	1876.81	1876.81	1881.86
Interest on working capital	178.17	177.08	175.85	174.72	173.77
O & M Expenses	1196.35	1236.10	1277.14	1319.49	1363.29
Total	6243.57	6139.78	6027.63	5917.84	5814.72

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



(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses	99.70	103.01	106.43	109.96	113.61
Maintenance Spares	179.45	185.42	191.57	197.92	204.49
Receivables	1040.60	1023.30	1004.61	986.31	969.12
Total	1319.75	1311.73	1302.61	1294.19	1287.22
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	178.17	177.08	175.85	174.72	173.77

Capital Cost

11. The capital cost allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014 was ₹31751.94 lakh for Combined Asset as on 31.3.2014 and 31.3.2019.

12. The details of FR approved capital cost, capital cost admitted as on 31.3.2014 and ACE incurred up to 31.3.2019 as claimed by the Petitioner for the Combined Asset are as follows:

(₹ in lakh)			
Approved Cost (FR)	Actual Capital Cost as on COD	ACE	Total Capital Cost as on 31.3.2019
		2014-19	
32509.28	31751.94	0.00	31751.94

13. The Petitioner has claimed the same capital cost of ₹31751.94 lakh for the Combined Asset as on 31.3.2014 which was admitted by the Commission vide order dated 23.2.2016 in Petition No. 549/TT/2014.

Cost Over-run

14. The completion cost in respect of the Combined Asset is ₹31751.94 lakh and the approved FR cost is ₹32509.28 lakh. Hence, the completion cost in respect of the Combined Asset is within the approved cost as per FR.

Additional Capital Expenditure (ACE)

15. The Petitioner has not claimed any ACE for the 2014-19 period. Accordingly, the capital cost of ₹31751.94 lakh for the Combined Asset as on 1.4.2014 and 31.3.2019 has been considered for the purpose of truing of tariff for the 2014-19 tariff period.



Debt-Equity Ratio

16. The Petitioner has claimed debt-equity ratio of 70:30 as on 31.3.2014. The debt-equity ratio of 70:30 has been considered for capital cost as on 31.3.2014 during the 2014-19 tariff period as provided under Regulation 19 of the 2014 Tariff Regulations. The same has been summarised as follows:

Particulars	Amount as on 1.4.2014 (₹ in lakh)	(%)	Amount as on 31.3.2019 (₹ in lakh)	(%)
Debt	22227.41	70.00	22227.41	70.00
Equity	9524.53	30.00	9524.53	30.00
Total	31751.94	100.00	31751.94	100.00

Depreciation

17. The Petitioner's claim towards depreciation in the instant petition was found to be higher than that of the depreciation allowed in order dated 23.2.2016 in Petition No. 549/TT/2014. The Petitioner has neither given any justification for claiming higher depreciation than that allowed earlier nor made any specific prayer for allowing higher depreciation in this petition. It is observed that vide order dated 23.2.2016 in Petition No. 549/TT/2014, the depreciation for IT equipment was allowed @5.28%. The Petitioner now at the time of truing-up of the tariff of the 2014-19 period has segregated the IT equipment cost from the Sub-station cost and has considered depreciation rate for IT Equipment @15% and the salvage value for IT Equipment is NIL as per the 2014 Tariff Regulations. A similar issue had come up in some earlier petitions filed by the Petitioner. In this regard, the Commission in order dated 9.5.2020 in Petition No. 19/TT/2020 held as follows:

"31. We have considered the submissions of the Petitioner. The instant assets were put into commercial operation during the 2009-14 period and the tariff from the respective CODs to 31.3.2014 was allowed vide orders dated 30.8.2012 and 9.5.2013 in Petition No.343/2010 and Petition No. 147/TT/2011 respectively. Further, the tariff of the 2009-14 period was trued up and tariff for the 2014-19 period was allowed vide order dated 25.2.2016 in Petition No.10/TT/2015. The Petitioner did not claim any capital expenditure towards "IT Equipment" in the above said three petitions where tariff for the



instant assets for the 2009-14 period was allowed, tariff of the 2009-14 period was trued up and tariff for 2014- 19 period was allowed even though there was a clear provision in the 2009 Tariff Regulations and 2014 Tariff Regulations providing depreciation @15% for IT Equipment. Having failed to make a claim as per the 2009 Tariff Regulations(the period during which COD of assets was achieved), the Petitioner has now, at the time of truing up of the tariff allowed for the 2014-19 period has apportioned apart of the capital expenditure to "IT Equipment". The Petitioner has adopted similar methodology not only in this but in some of the other petitions listed along with the instant petition on 26.2.2020. It is observed that the Petitioner has for the first time apportioned a part of the capital expenditure towards IT Equipment and has claimed depreciation under the head "IT Equipment" @15% at the time of truing up of the tariff of 2014- 19 period. Regulation 8(1) of the 2014 Tariff Regulations provides for truing up of the capital expenditure including the additional capital expenditure, incurred upto 31.3.2019, admitted by the Commission after prudence check. We are of the view that scope of truing up exercise is restricted to truing up of the capital expenditure already admitted and apportionment or reapportionment of the capital expenditure cannot be allowed at the time of truing up. Therefore, we are not inclined to consider the Petitioner's prayer for apportionment of capital expenditure towards IT Equipment and allowing depreciation @ 15% from 1.4.2014 onwards. Accordingly, the depreciation @ 5.28% has been considered for IT Equipment as part of the substation upto 31.3.2019 while truing up the capital expenditure for the 2014-19 period. During the 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 read with Sr. No. (p) of the Appendix-I (Depreciation Schedule) of the 2019 Tariff Regulations."

18. In line with the above decision in order dated 9.5.2020 in Petition No. 19/TT/2020, depreciation has been considered for IT Equipment @5.28% as part of the sub-station up to 31.3.2019 while truing up the capital expenditure for the 2014-19 period. However, for the 2019-24 tariff period, 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. The Gross Block during the 2014-19 tariff period has been depreciated at weighted average rate of depreciation (WAROD) and working of WAROD is at Annexure-I to this order. WAROD has been worked out after taking into account the depreciation rates of assets as specified in the 2014 Tariff Regulations and depreciation allowed during 2014-19 tariff period is as follows:



(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Average Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Weighted average rate of Depreciation (WAROD) (%)	5.01	5.01	5.01	5.01	5.01
Lapsed useful life of the asset at the beginning of the year (Year)	4.00	5.00	6.00	7.00	8.00
Balance useful life of the asset at the beginning of the year (Year)	25.00	24.00	23.00	22.00	21.00
Aggregated Depreciable Value	27590.60	27590.60	27590.60	27590.60	27590.60
Combined Depreciation during the year	1589.26	1589.26	1589.26	1589.26	1589.26
Cumulative depreciation at the end of the year	8191.88	9781.13	11370.39	12959.65	14548.91
Remaining Aggregated Depreciable Value at the end of the year	19398.72	17809.46	16220.21	14630.95	13041.69

19. The details of the depreciation allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014, as claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	1589.26	1589.26	1589.26	1589.26	1589.26
Claimed by the Petitioner in the instant petition	1633.03	1633.03	1633.03	1633.03	1633.03
Approved after true-up in this order	1589.26	1589.26	1589.26	1589.26	1589.26

Interest on Loan (IoL)

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



(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	22227.41	22227.41	22227.41	22227.41	22227.41
Cumulative Repayments up to Previous Year	6602.62	8191.88	9781.13	11370.39	12959.65
Net Loan-Opening	15624.79	14035.53	12446.28	10857.02	9267.76
Addition due to Additional Capitalization	0.00	0.00	0.00	0.00	0.00
Repayment during the year	1589.26	1589.26	1589.26	1589.26	1589.26
Net Loan-Closing	14035.53	12446.28	10857.02	9267.76	7678.50
Average Loan	14830.16	13240.90	11651.65	10062.39	8473.13
Weighted Average Rate of Interest on Loan (%)	9.230	9.228	9.225	9.222	9.217
Interest on Loan	1368.85	1221.88	1074.90	927.91	780.93

21. The details of IoL allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	1369.15	1222.15	1075.20	928.27	781.34
Claimed by the Petitioner in the instant petition	1366.83	1215.81	1064.80	913.79	762.77
Approved after true-up in this order	1368.85	1221.88	1074.90	927.91	780.93

Return on Equity (RoE)

22. The Petitioner has claimed RoE for the instant asset in terms of Regulations 24 and 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 the 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



23. The Commission in order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate for the Petitioner based on the notified MAT rates as follows:

Year	Notified MAT rates (%) (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

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

Year	MAT Rate (%)	Grossed-up RoE [Base Rate/(1-t)] (%)
2014-15	20.961	19.610
2015-16	21.342	19.705
2016-17	21.342	19.705
2017-18	21.342	19.705
2018-19	21.549	19.758

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

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Addition due to Additional Capitalization	0.00	0.00	0.00	0.00	0.00
Closing Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Average Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (%)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (Pre-tax)	19.610	19.705	19.705	19.705	19.758
Return on Equity (Pre-tax)	1867.76	1876.81	1876.81	1876.81	1881.86

26. The details of RoE allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014, as claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:



(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	1867.80	1867.80	1867.80	1867.80	1867.80
Claimed by the Petitioner in the instant petition	1869.19	1877.76	1876.81	1876.81	1881.86
Approved after true-up in this order	1867.76	1876.81	1876.81	1876.81	1881.86

Operation & Maintenance Expenses (O&M Expenses)

27. The details of the O&M Expenses claimed by the Petitioner for the Combined Asset and allowed under Regulation 29(4)(a) of the 2014 Tariff Regulations for the purpose of tariff are as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station Bays (12 numbers of kV Bays and 10 numbers of 400 kV bays)					
220 kV - Hassan:ICT-I	1				
220 kV - Hassan:ICT-II	1				
220 kV - Karaikudi:Karaikudi-I	1				
220 kV - Karaikudi:Karaikudi-II	1				
220 kV - Karaikudi:Pudukkotai Bay	1				
220 kV - Karaikudi:Sembatty Bay	1				
220 kV - Karaikudi:ICT-I bay	1				
220 kV - Karaikudi:ICT-II bay	1				
220 kV - Suzlon - Gopalpura Bay	1				
220 kV - Yachanahali Bay	1				
220 kV - Hassan:Shimoga - I Bay	1				
220 kV - Hassan:Shimoga - II Bay	1				
400 kV - Hassan:ICT-I	1				
400 kV - Hassan:ICT-II	1				
400 kV - Karaikudi:ICT - I Bay	1				
400 kV - Karaikudi:ICT - II Bay	1				
400 kV - Karaikudi:Madurai Bay	1				
400 kV - Karaikudi:Trichy Bay	1				
400 kV - Hassan:Bus Reactor Bay	1				
400 kV - Hassan:Nelamangala Bay	1				



400 kV - Hassan:Thalaguppa Bay	1				
400 kV - Karaikudi:Bus Reactor Bay	1				
Norm (₹ lakh/bay)					
220 kV	42.210	43.610	45.060	46.550	48.100
400 kV	60.300	62.300	64.370	66.510	68.710
Total Sub-station O&M	1109.52	1146.32	1184.42	1223.70	1264.30
AC Transmision Lines					
LILO of Trichy - Madurai CKT-II at Karaikudi 400kV Double Circuit transmission Line (Twin/ Triple Conductor)	48.462 KM				
LILO of Thalaguppa-Nelamangala Line at Hassan 400kV Double Circuit transmission line (Twin/ Triple Conductor)	74.350 KM				
Norm (₹ lakh/KM)					
Double Circuit Line (Twin/ Triple Conductor)	0.707	0.731	0.755	0.780	0.806
Total Transmission Line	86.83	89.78	92.72	95.79	98.99
Total O&M Expenses	1196.35	1236.10	1277.14	1319.49	1363.29

28. The details of the O&M Expenses approved vide order dated 23.2.2016 in Petition No. 549/TT/2014, O&M Expenses claimed by the Petitioner in the instant petition and trued-up O&M Expenses allowed in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	1196.35	1236.10	1277.14	1319.49	1363.29
Claimed by the Petitioner in the instant petition	1196.35	1236.10	1277.14	1319.49	1363.29
Approved after true-up in this order	1196.35	1236.10	1277.14	1319.49	1363.29

Interest on Working Capital (IWC)

29. The Petitioner has claimed IWC in terms of Regulation 28(1)(c) of the 2014 Tariff Regulations as follows:-

i. Maintenance spares:

Maintenance spares have been worked out based on 15% of Operation and Maintenance Expenses.



ii. O & M Expenses:

O&M Expenses have been considered for one month of the allowed O&M Expenses.

iii. Receivables:

The receivables have been worked out on the basis of 2 months of annual transmission charges as worked out above.

iv. Rate of interest on working capital:

Rate of interest on working capital is considered on normative basis in accordance with Clause (3) of Regulation 28 of the 2014 Tariff Regulations.

30. The trued-up IWC approved for the Combined Asset is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O & M Expenses (O&M expenses for 1 month)	99.70	103.01	106.43	109.96	113.61
Maintenance Spares (15% of O&M expenses)	179.45	185.41	191.57	197.92	204.49
Receivables (Equivalent to 2 months of annual fixed cost / annual transmission charges)	1033.23	1016.70	998.86	981.25	964.75
Total	1312.38	1305.13	1296.86	1289.13	1282.85
Rate of Interest on working capital (%)	13.50	13.50	13.50	13.50	13.50
Interest of working Capital	177.17	176.19	175.08	174.03	173.19

31. The details of IWC allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014, IWC claimed by the Petitioner and trued-up IWC approved in the instant order is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	177.17	175.99	174.87	173.83	172.86
Claimed by the Petitioner in the instant petition	178.17	177.08	175.85	174.72	173.77
Approved after true-up in this order	177.17	176.19	175.08	174.03	173.19



Approved Annual Fixed Charges for the 2014-19 Tariff Period

32. The trued-up annual fixed charges allowed for the transmission asset for the 2014-19 tariff period are as follows:

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1589.26	1589.26	1589.26	1589.26	1589.26
Interest on Loan	1368.85	1221.88	1074.90	927.91	780.93
Return on Equity	1867.76	1876.81	1876.81	1876.81	1881.86
Interest on Working Capital	177.17	176.19	175.08	174.03	173.19
Operation and Maintenance	1196.35	1236.10	1277.14	1319.49	1363.29
Total	6199.39	6100.23	5993.18	5887.51	5788.51

33. Accordingly, the Annual Transmission Charges approved vide order dated 23.2.2016 in Petition No. 549/TT/2014, trued-up AFC claimed by the Petitioner in the instant petition and trued-up AFC approved in the instant order are as follows:

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 23.2.2016 in Petition No. 549/TT/2014	6199.73	6091.30	5984.27	5878.65	5774.55
Claimed by the Petitioner in the instant petition	6243.57	6139.78	6027.63	5917.84	5814.72
Approved after true-up in this order	6199.39	6100.23	5993.18	5887.51	5788.51

Determination of Annual Fixed Charges for the 2019-24 Tariff Period

34. The Petitioner has claimed the following transmission charges for the Combined Asset for the 2019-24 tariff period:

	(₹ in lakh)				
Particulars	2019-20	2020-21	201-22	2022-23	2023-24
Depreciation	1577.14	1565.47	1565.47	479.99	479.99
Interest on Loan	614.35	469.02	324.23	228.99	182.81
Return on Equity	1788.90	1788.90	1788.90	1788.90	1788.90
Interest on Working Capital	110.25	109.89	109.53	93.63	94.68
Operation and Maintenance	1156.34	1197.33	1239.16	1283.03	1326.67
Total	5246.98	5130.61	5027.29	3874.54	3873.05

35. The Petitioner has claimed the following Interest on Working Capital for the Combined Asset for the 2019-24 tariff period:



(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses	96.36	99.78	103.26	106.92	110.56
Maintenance Spares	173.45	179.60	185.87	192.45	199.00
Receivables	645.12	632.54	619.80	477.68	476.19
Total	914.93	911.92	908.93	777.05	785.75
Rate of Interest	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	110.25	109.89	109.53	93.63	94.68

Capital Cost

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

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

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

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

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

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

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

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

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

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

- (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.”



37. The Petitioner has claimed capital cost of ₹31751.94 lakh as on 31.3.2019 for the Combined Asset. Against the overall approved capital cost (as per FR) of ₹32509.28 lakh, the estimated completion cost including ACE is ₹31751.94 lakh as on 31.3.2024. The Petitioner has not claimed any ACE for the 2019-24 period. Accordingly, the admitted capital cost of ₹31751.94 lakh as on 31.3.2019 as trued-up in above paragraphs is considered as the capital cost as on 1.4.2019 for the purpose of determination of tariff for the 2019-24 tariff period.

Debt-Equity Ratio

38. Regulation 18 of the 2019 Tariff Regulations provides as follows:-

“18. Debt-Equity Ratio: (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

Explanation.-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:



Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.”

39. The details of the debt-equity considered for the purpose of computation of tariff for the 2019-24 tariff period for the transmission asset are as follows:

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh)	(%)	Total Capital Cost as on 31.3.2024 (₹ in lakh)	(%)
Debt	22227.41	70.00	22227.41	70.00
Equity	9524.53	30.00	9524.53	30.00
Total	31751.94	100.00	31751.94	100.00

Depreciation

40. Regulations 33(1), 33(2) and 33(5) of the 2019 Tariff Regulations provide 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.”

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

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

41. We have considered the submissions of the Petitioner. IT equipment has been considered as a part of the Gross Block and depreciated using weighted average rate of depreciation (WAROD). WAROD has been worked out at Annexure-II after taking into account the depreciation rates as specified in the 2019 Tariff Regulations. The transmission asset has already completed 12 years of life as on 31.3.2022, the remaining depreciable value has been spread across the balance useful life in accordance with Regulation 33(5) of the 2019 Tariff Regulations. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. The depreciation allowed for the Combined Asset is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Addition during the year 2019-24 due to projected Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Average Gross Block	31751.94	31751.94	31751.94	31751.94	31751.94
Weighted average rate of Depreciation (WAROD) (%)	5.14	5.14	5.14	1.52	1.52
Lapsed useful life at the beginning of the year (Year)	9.00	10.00	11.00	12.00	13.00
Balance useful life at the beginning of the year (Year)	20.00	19.00	18.00	17.00	16.00
Aggregated Depreciable Value	27635.64	27635.64	27635.64	27635.64	27635.64
Combined Depreciation during the year	1633.04	1633.04	1633.04	481.62	481.62
Aggregate Cumulative Depreciation at the end of the year	16181.94	17814.98	19448.02	19929.64	20411.27



Remaining Aggregate Depreciable Value at the end of the year	11453.69	9820.66	8187.62	7706.00	7224.37
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Interest on Loan (IoL)

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

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

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

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

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

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

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

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

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing”.

43. The weighted average rate of IoL has been considered on the basis of the rates prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during the 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 above, IoL has been worked out in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed is follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	22227.41	22227.41	22227.41	22227.41	22227.41
Cumulative Repayments up to Previous Year	14548.91	16181.94	17814.98	19448.02	19929.64
Net Loan-Opening	7678.50	6045.47	4412.43	2779.39	2297.77
Addition due to Additional Capitalization	0.00	0.00	0.00	0.00	0.00
Repayment during the year	1633.04	1633.04	1633.04	481.62	481.62
Net Loan-Closing	6045.47	4412.43	2779.39	2297.77	1816.14
Average Loan	6861.98	5228.95	3595.91	2538.58	2056.95
Weighted Average Rate of Interest on Loan (%)	9.209	9.197	9.174	9.118	8.998
Interest on Loan	631.92	480.90	329.88	231.46	185.09

Return on Equity (RoE)

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

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

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

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

Provided further that:

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

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



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

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

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

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

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

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

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

Illustration-

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

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

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

- (a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;
- (b) Estimated Advance Tax for the year on above is Rs 240 crore;
- (c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore / Rs 1000 Crore = 24%;
- (d) Rate of return on equity = $15.50 / (1 - 0.24) = 20.395\%$.



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

45. RoE allowed for the Combined Asset under Regulation 30 of the 2019 Tariff

Regulations is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Addition due to Additional Capitalization	0.00	0.00	0.00	0.00	0.00
Closing Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Average Equity	9524.53	9524.53	9524.53	9524.53	9524.53
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (%)	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)	1788.90	1788.90	1788.90	1788.90	1788.90

Operation & Maintenance Expenses (O&M Expenses)

46. Regulation 35(3)(a) of the 2019 Tariff Regulations provides 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



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
<i>Norms for HVDC stations</i>					
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.”

47. The O&M Expenses claimed by the Petitioner for the Combined Asset are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station Bays (12 numbers of 220 kV Bays and 10 numbers of 400 kV Bays)					
220 kV - Hassan:ICT-I	1				
220 kV - Hassan:ICT-II	1				
220 kV - Karaikudi:Karaikudi-I	1				
220 kV - Karaikudi:Karaikudi-II	1				
220 kV - Karaikudi:Pudukkotai Bay	1				
220 kV - Karaikudi:Sembatty Bay	1				
220 kV - Karaikudi:ICT-I bay	1				
220 kV - Karaikudi:ICT-II bay	1				
220 kV - Suzlon - Gopalpura Bay	1				
220 kV - Yachanahali Bay	1				
220 kV - Hassan:Shimoga - I Bay	1				
220 kV - Hassan:Shimoga - II Bay	1				
400 kV - Hassan:ICT-I	1				
400 kV - Hassan:ICT-II	1				
400 kV - Karaikudi:ICT - I Bay	1				
400 kV - Karaikudi:ICT - II Bay	1				
400 kV - Karaikudi:Madurai	1				



Bay					
400 kV - Karaikudi:Trichy Bay	1				
400 kV - Hassan:Bus Reactor Bay	1				
400 kV - Hassan:Nelamangala Bay	1				
400 kV - Hassan:Thalaguppa Bay	1				
400 kV - Karaikudi:Bus Reactor Bay	1				
Norm (₹ lakh/bay)					
220 kV	22.510	23.300	24.120	24.960	25.840
400 kV	32.150	33.280	34.450	35.660	36.910
Total Sub-station O&M	591.62	612.40	633.94	656.12	679.18
Transformer					
400 kV Hassan:ICT-I at Hassan	315 MVA				
400 kV Hassan:ICT-II at Hassan	315 MVA				
400 kV Karaikudi:ICT-I at Karakudi	315 MVA				
400 kV Karaikudi:ICT-II at Karaikudi	315 MVA				
Norm (₹ lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
Total Transformer	451.08	467.46	483.84	501.48	517.86
AC transmission Lines					
LILO of Trichy - Madurai CKT-II at Karaikudi 400kV Double Circuit transmission line (Twin/ Triple Conductor)	48.462 KM				
LILO of Thalaguppa-Nelamangala Line at Hassan 400kV Double Circuit transmission Line (Twin/ Triple Conductor)	74.350 KM				
Norm (₹ lakh/KM)					
Double Circuit Line (Twin/ Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Total Transmission Line	108.20	112.00	115.93	119.99	124.16
Communication System					
PLCC (₹ in lakh)	271.82	271.82	271.82	271.82	271.82
Norms (%)	2	2	2	2	2
Total Communication System	5.44	5.44	5.44	5.44	5.44
Total O&M Expenses	1156.33	1197.30	1239.15	1283.02	1326.64

48. The Petitioner has claimed O&M Expenses separately for PLCC under Regulation 35(4) of the 2019 Tariff Regulations @2% of its original project cost in the instant petition. The Petitioner has made similar claim in other petitions as well. Though PLCC is a communication system, it has been considered a part of the Sub-



station in the 2014 Tariff Regulations and the 2019 Tariff Regulations and the norms for Sub-station have been specified accordingly. Accordingly, the Commission vide order dated 24.1.2021 in Petition No.126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations even though PLCC is a communication system. The relevant portions of the order dated 24.1.2021 in Petition No.126/TT/2020 are extracted hereunder:

“103. Thus, although PLCC equipment is a communication system, it has been considered as a part of sub-station, as it is used both for protection and communication. Therefore, we are of the considered view that rightly, it was not considered for separate O&M Expenses while framing norms of O&M for 2019-24 tariff period. While specifying norms for bays and transformers, O&M Expenses for PLCC have been included within norms for O&M Expenses for sub-station. Norms of O&M Expenses @2% of the capital cost in terms of Regulation 35(4) of the 2019 Tariff Regulations have been specified for communication system such as PMU, RMU, OPGW etc. and not for PLCC equipment.”

“105. In our view, granting of O&M Expenses for PLCC equipment @2% of its capital cost under Regulation 35(4) of the 2014 Tariff Regulations under the communication system head would tantamount to granting O&M Expenses twice for PLCC equipment as PLCC equipment has already been considered as part of the sub-station. Therefore, the Petitioner’s prayer for grant of O&M Expenses for the PLCC equipment @2% of its capital cost under Regulation 35(4) of the 2014 Tariff Regulations is rejected.

106. The principle adopted in this petition that PLCC is part of sub-station and accordingly no separate O&M Expenses is admissible for PLCC equipment in the 2019-24 tariff period under Regulation 35(4) of the 2019 Tariff Regulations shall be applicable in case of all petitions where similar claim is made by the Petitioner. As already mentioned, the Commission, however, on the basis of the claim made by the Petitioner has inadvertently allowed O&M Expenses for PLCC equipment @2% of its original project cost, which is applicable for other “communication system”, for 2019-24 period in 31 petitions given in Annexure-3 of this order. Therefore, the decision in this order shall also be applicable to all the petitions given in Annexure-3. Therefore, PGCIL is directed to bring this decision to the notice of all the stakeholders in the 31 petitions given in Annexure-3 and also make revised claim of O&M Expenses for PLCC as part of the sub-station at the time of truing up of the tariff allowed for 2019-24 period in respective petitions.”

49. In view of the above finding, the Petitioner’s claim for separate O&M Expenses for PLCC @2% is rejected. Accordingly, O&M Expenses allowed for the asset covered in the instant petition are as follows:



(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station Bays					
220 kV - Hassan:ICT-I	1	1	1	1	1
220 kV - Hassan:ICT-II	1	1	1	1	1
220 kV - Karaikudi:Karaikudi-I	1	1	1	1	1
220 kV - Karaikudi:Karaikudi-II	1	1	1	1	1
220 kV - Karaikudi:Pudukkotai Bay	1	1	1	1	1
220 kV - Karaikudi:Sembatty Bay	1	1	1	1	1
220 kV - Karaikudi:ICT-I bay	1	1	1	1	1
220 kV - Karaikudi:ICT-II bay	1	1	1	1	1
220 kV - Suzlon - Gopalpura Bay	1	1	1	1	1
220 kV - Yachanahali Bay	1	1	1	1	1
220 kV - Hassan:Shimoga - I Bay	1	1	1	1	1
220 kV - Hassan:Shimoga - II Bay	1	1	1	1	1
400 kV - Hassan:ICT-I	1	1	1	1	1
400 kV - Hassan:ICT-II	1	1	1	1	1
400 kV - Karaikudi:ICT - I Bay	1	1	1	1	1
400 kV - Karaikudi:ICT - II Bay	1	1	1	1	1
400 kV - Karaikudi:Madurai Bay	1	1	1	1	1
400 kV - Karaikudi:Trichy Bay	1	1	1	1	1
400 kV - Hassan:Bus Reactor Bay	1	1	1	1	1
400 kV - Hassan:Nelamangala Bay	1	1	1	1	1
400 kV - Hassan:Thalaguppa Bay	1	1	1	1	1
400 kV - Karaikudi:Bus Reactor Bay	1	1	1	1	1
Norm (₹ lakh/bay)					
220 kV	22.510	23.300	24.120	24.960	25.840
400 kV	32.150	33.280	34.450	35.660	36.910
Total Sub-station O&M	591.62	612.40	633.94	656.12	679.18
Transformer					
400 kV Hassan:ICT-I at Hassan	315	315	315	315	315
400 kV Hassan:ICT-II at Hassan	315	315	315	315	315
400 kV Karaikudi:ICT-I at Karaikudi	315	315	315	315	315
400 kV Karaikudi:ICT-II at Karaikudi	315	315	315	315	315
Norm (₹ lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
Total Transformer	451.08	467.46	483.84	501.48	517.86
AC & HVDC Lines					
LILO of Trichy - Madurai CKT-	48.462	48.462	48.462	48.462	48.462



II at Karaikudi 400kV Double Circuit Line (Twin/ Triple Conductor)					
LILO of Thalaguppa-Nelamangala Line at Hassan 400kV Double Circuit Line (Twin/ Triple Conductor)	74.350	74.350	74.350	74.350	74.350
Norm (₹ lakh/KM)					
Double Circuit Line (Twin/ Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Total Transmission Line	108.20	112.00	115.93	119.99	124.16
Total O&M Expenses	1150.90	1191.86	1233.71	1277.59	1321.20

Interest on Working Capital (IWC)

50. Regulations 34(1)(c), 34(1)(3) and 34(1)(4) and 3(7) of the 2019 Tariff

Regulations provide as follows:

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

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

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

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

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

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

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

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

“3. 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;”



51. The Petitioner has submitted that it has computed the IWC for the 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. 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, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-24. The components of the working capital and interest allowed thereon is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
O & M Expenses (O&M expenses for 1 month)	95.91	99.32	102.81	106.47	110.10
Maintenance Spares (15% of O&M expenses)	172.63	178.78	185.06	191.64	198.18
Receivables (Equivalent to 45 days of annual fixed cost / annual transmission charges)	653.59	640.86	626.49	475.99	474.47
Total	922.13	918.96	914.36	774.10	782.75
Rate of Interest (%)	12.05	11.25	10.50	10.50	10.50
Interest of working capital	111.12	103.38	96.01	81.28	82.19

Annual Fixed Charges for the 2019-24 Tariff Period

52. The transmission charges allowed for the transmission asset/Combined Asset for the 2019-24 tariff period are summarised as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1633.04	1633.04	1633.04	481.62	481.62
Interest on Loan	631.92	480.90	329.88	231.46	185.09
Return on Equity	1788.90	1788.90	1788.90	1788.90	1788.90
Interest on Working Capital	111.12	103.38	96.01	81.28	82.19
Operation and Maintenance	1150.90	1191.86	1233.71	1277.59	1321.20
Total	5315.87	5198.08	5081.54	3860.85	3859.01

Filing Fee and Publication Expenses

53. 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

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

Goods and Services Tax

55. The Petitioner has sought to recover GST on transmission charges separately from the Respondents, if at any time GST on transmission is withdrawn from negative list in future.

56. We have considered the submissions of the Petitioner and are of the opinion that GST is not levied on transmission service at present. Therefore, we are of the view that Petitioner's prayer is premature and the Petitioner is at liberty to approach this Commission if GST is levied upon transmission service in future.

Security Expenses

57. The Petitioner has submitted that security expenses for the asset are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential IWC. The Petitioner has requested to consider the actual security expenses incurred during 2018-19 for claiming estimated security expenses for 2019-20 which shall be subject to true up at the end



of the year based on the actuals. The Petitioner has submitted that similar petition for security expenses for 2020-21, 2021-22, 2022-23 and 2023-24 will be filed on yearly basis on the basis of the actual expenses of previous year subject to true up at the end of the year on actual expenses. The Petitioner has submitted that the difference, if any, between the estimated security expenses and actual security expenses as the audited accounts may be allowed to be recovered from the beneficiaries on a yearly basis.

58. We have considered the submissions of the Petitioner. We are of the view that the Petitioner should claim security expenses for all the transmission assets in one petition. The Commission observes that the Petitioner has already filed Petition No.260/MP/2020 claiming consolidated security expenses on projected basis for the 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19. Therefore, security expenses will be dealt with in Petition No. 260/MP/2020 in accordance with the applicable provisions of the 2019 Tariff Regulations.

Capital Spares

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

Sharing of Transmission Charges

60. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 or the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020, as applicable, as provided in Regulation 43 of the 2014 Tariff Regulations for the 2014-19 tariff period and Regulation 57 of the 2019 Tariff Regulations for the 2019-24 tariff period.



61. To summarise:

(a) The trued-up Annual Fixed Charges approved for the transmission asset/Combined Asset for the 2014-19 tariff period are as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC	6199.39	6100.23	5993.18	5887.51	5788.51

(b) The Annual Fixed Charges allowed for the transmission asset/Combined Asset for the 2019-24 tariff period in this order are as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	5315.87	5198.08	5081.54	3860.85	3859.01

62. Annexure-I and Annexure-II to this order form part of the order.

63. This order disposes of Petition No. 10/TT/2020 in terms of the above discussion and findings.

sd/-
(Pravas Kumar Singh)
Member

sd/-
(I.S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson



Annexure- I

2014-19 Capital Expenditure as on COD	Admitted Capital Cost as on COD (₹ in lakh)	ACE (₹ in lakh)	Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
		2014-19			2014-15 (₹ in lakh)	2015-16 (₹ in lakh)	2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)
Freehold Land	1095.72	0.00	1095.72	0.00	0.00	0.00	0.00	0.00	0.00
Building	1662.12	0.00	1662.12	3.34	55.51	55.51	55.51	55.51	55.51
Transmission Line	12354.64	0.00	12354.64	5.28	652.32	652.32	652.32	652.32	652.32
Sub Station	15917.23	0.00	15917.23	5.28	840.43	840.43	840.43	840.43	840.43
PLCC	271.82	0.00	271.82	6.33	17.21	17.21	17.21	17.21	17.21
IT Equipment and Software	450.41	0.00	450.41	5.28	23.78	23.78	23.78	23.78	23.78
TOTAL	31751.94	0.00	31751.94		1589.26	1589.26	1589.26	1589.26	1589.26
Average Gross Block (₹ in lakh)					31751.94	31751.94	31751.94	31751.94	31751.94
Weighted Average Rate of Depreciation (%)					5.01	5.01	5.01	5.01	5.01



Annexure– II

2019-24 Capital Expenditure as on 1.4.2019	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
				2019-20 (₹ in lakh)	2020-21 (₹ in lakh)	2021-22 (₹ in lakh)	2022-23 (₹ in lakh)	2023-24 (₹ in lakh)
Freehold Land	1095.72	1095.72	0.00	0.00	0.00	0.00		
Building	1662.12	1662.12	3.34	55.51	55.51	55.51		
Transmission Line	12354.64	12354.64	5.28	652.32	652.32	652.32		
Sub Station	15917.23	15917.23	5.28	840.43	840.43	840.43		
PLCC	271.82	271.82	6.33	17.21	17.21	17.21		
IT Equipment and Software	450.41	450.41	15.00	67.56	67.56	67.56		
TOTAL	31751.94	31751.94		1633.04	1633.04	1633.04	481.62	481.62
		Average Gross Block (₹ in lakh)		31751.94	31751.94	31751.94	31751.94	31751.94
		Weighted Average Rate of Depreciation (%)		5.14	5.14	5.14	1.52	1.52

