

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 251/TT/2020

Coram:

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

Date of Order: 14.12.2021

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and revision of transmission tariff of the 2001-04, 2004-09 and 2009-14 tariff periods and truing up of transmission tariff of the 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff for the 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for **Combined Asset** consisting of **Asset-I:** 315 MVA 400/220 kV Auto Transformer at Hyderabad and **Asset-II:** 50 MVAR Reactor at Cuddapah under Central Transmission Project Augmentation in Southern Region.

And in the matter of:

Power Grid Corporation of India Limited,
'SAUDAMINI', Plot No-2, Sector-29,
Gurgaon-122001 (Haryana).

.....Petitioner

Versus

1. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan,
Bangalore-560009.
2. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha,
Hyderabad-500082.
3. Kerala State Electricity Board,
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram-695004.
4. Tamil Nadu Generation and Distribution Corporation Limited,
(Formerly Tamil Nadu Electricity Board-TNEB),
NPKRR Maaligai, 800, Anna Salai,
Chennai-600002.



5. Electricity Department,
Government of Pondicherry,
Pondicherry-605001.
6. Eastern Power Distribution Company of Andhra Pradesh Limited,
P&T Colony, Seethmmadhara,
Vishakhapatnam, Andhra Pradesh.
7. Southern Power Distribution Company of Andhra Pradesh Limited,
Srinivasasa Kalyana Mandapam Backside, Tiruchanoor Road,
Kesavayana Gunta,
Chittoor District, Tirupati-517501 (Andhra Pradesh).
8. Southern Power Distribution Company of Telangana Limited,
Corporate Office, Mint Compound,
Hyderabad-500063 (Telangana).
9. Northern Power Distribution Company of Telangana Limited,
Opposite NIT Petrol Pump, Chaitanyapuri, Kazipet,
Warangal-506004 (Telangana).
10. Bangalore Electricity Supply Company Limited,
Corporate Office, K. R. Circle,
Bangalore-560001 (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-575001 (Karnataka).
14. Chamundeswari Electricity Supply Corporation Limited,
927, L J Avenue, Ground Floor, New Kantharaj URS Road,
Saraswatipuram,
Mysore-570009 (Karnataka).
15. Electricity Department,
Government of Goa,
Vidyuti Bhawan, Panaji,
Goa-403001.



16. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad-500082.

17. Tamil Nadu Transmission Corporation,
NPKRR Maaligai, 800, Anna Salai,
Chennai-600002.

.....Respondent(s)

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

For Respondents : Shri S. Vallinayagam, Advocate, TANGEDCO
Dr. R. Kathiravan, TANGEDCO
Ms. R. Ramalakshmi, TANGEDCO
Shri R. Srinivasan, TANGEDCO

ORDER

The Petitioner, Power Grid Corporation of India Limited, has filed the instant petition for revision of transmission tariff of the 2001-04, 2004-09 and 2009-14 tariff periods; truing up of transmission tariff of the 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”); and determination of transmission tariff for the period from 1.4.2019 to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of the following two transmission assets under Central Transmission Project Augmentation in Southern Region (hereinafter referred to as “the transmission project”):

Asset-I: 315 MVA 400/220 kV Auto Transformer at Hyderabad; and

Asset-II: 50 MVAR Reactor at Cuddapah.

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

“1) Approve the revised Transmission Tariff for 2001-04 block as per para 8 above.



- 2) 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 9 and 10 above.
- 3) A. 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.

B. Further it is submitted that deferred tax liability before 01.04.2009 shall be recoverable from the beneficiaries or long term customers / DIC as the case may be, as and when the same is materialized as per regulation 49 of 2014 and regulation 67 of 2019 tariff regulation. The petitioner may be allow to recover the deferred tax liability materialised directly without making any application before the commission as provided in the regulation.
- 4) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.
- 5) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.
- 6) Allow the petitioner to adjust the cumulative depreciation by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful life and to recover the unrecovered depreciation in case of Asset-I separately on account of de-capitalization.
- 7) 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 10.5 above.
- 8) Allow the petitioner to claim the capital spares at the end of tariff block as per actual.
- 9) 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"

3. **Backdrop of the case**

- a) The Board of Director of the Petitioner's company in its meeting held on 18.3.1994 accorded the approval for the transmission project for capital outlay of ₹3857.00 lakh, including IDC of ₹350.00 lakh, for creation of the following assets:



- i. Installation of 2 Numbers 315 MVA, 400/230 kV Transformers along with associated equipment, one each at Khammam and Hyderabad Sub-stations; and
 - ii. Installation of 2 Numbers 50 MVAR Reactors, along with associated equipment, one each at Gazuwaka and Cuddapah.
- b) As per the approved implementation schedule related to the transmission project, the date of commercial operation (COD) of assets covered under the transmission project were as follows:

Sr. No.	Asset	COD
1	One Number 315 MVA, 400/220 kV Auto Transformer along with associated equipment at Hyderabad Sub-station (Asset-I)	1.4.1995
2	One Number 315 MVA, 400/220 kV Auto Transformer along with associated equipment at Khammam Sub-station	1.1.1997
3	One Number 50 MVAR Reactor along with associated equipment at Gazuwaka Sub-station	1.2.1997
4	One Number 50 MVAR Reactor along with associated equipment at Cuddapah Sub-station (Asset-II)	1.4.1997

- c) The transmission tariff of Assets at Sr. No. 2 and Sr. No. 3 above was notified by the Ministry of Power (MoP) on 14.5.1999. The tariff of Asset-I from 1.4.1995 to 31.3.1997 and from 1.4.1997 to 31.1.2001 was calculated keeping in view the provisions of MoP's notification dated 30.4.1994 and 16.12.1997 respectively. Further, the tariff of Asset-II from 1.4.1997 to 31.1.2001 was calculated as per MoP's notification dated 16.12.1997.
- d) The final transmission tariff of the transmission assets for the period from their respective COD to 31.3.2001 was allowed by the Commission vide order dated 26.7.2002 in Petition No. 78/2000.
- e) The transmission tariff, after considering Foreign Exchange Rate Variation (FERV) up to 31.3.2001, for the period from 1.4.2001 to 31.3.2004 was allowed vide order dated 20.2.2004 in Petition No. 53/2002.
- f) The Appellate Tribunal for Electricity (APTEL) vide a common judgment dated 4.10.2006 in Appeal No. 135/2005 (against the Commission's order dated 30.6.2006 in Petition No. 40/2002) and other related appeals, *inter-alia*, held that



addition of notional equity on account of FERV is not to be considered for computation of Return on Equity (RoE) and as a consequence, the entire amount of FERV shall form part of loan. The said decision was reiterated by the APTEL vide judgment dated 22.12.2006 in Appeal No. 161/2006 (M.P. State Electricity Board vs. Power Grid Corporation of India Limited & Ors.).

g) The APTEL vide judgment dated 31.10.2007 in Appeal No. 159/2005, *inter-alia*, held that Interest on Loan (IoL) capital should be determined based on normative debt repayment formula.

h) The above judgments of the APTEL involving interpretation of MoP's notification dated 16.12.1997 and question of apportionment of FERV and computation of IoL have been considered to be judgments *in rem* and, therefore, based on the implementation of the above-mentioned judgments in the instant case, the revised transmission tariff of the transmission assets for the 2001-04 tariff period was allowed vide order dated 8.2.2008 in Petition No. 53/2002.

i) The transmission tariff (after considering FERV up to 31.3.2004) of the transmission assets for the period from 1.4.2004 to 31.3.2009 was allowed vide order dated 3.5.2006 in Petition No. 129/2004. Further, based on the APTEL's judgments dated 4.10.2006 and 16.5.2007 in Appeal No. 135/2005 and Appeal No. 121/2005 respectively, the transmission tariff of the transmission assets for the period from 1.4.2004 to 31.3.2009 was revised vide order dated 17.3.2008 in Petition No. 129/2004.

j) Asset-I and Asset-II were combined during the 2009-14 period and considering the notional COD as 1.4.1997, the transmission tariff of Combined Asset for the 2009-14 tariff period was allowed vide order dated 8.12.2010 in Petition No. 119/2010 which was trued-up along with tariff determination for the 20014-19 tariff period allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014.

k) Though the entire scope of work under the transmission project is complete but the same is not covered in this petition. One 315 MVA, 400 kV/230



kV transformer along with associated equipment at Khammam (sl.no. ii of sub-paragraph b) and one 50 MVAR Reactor along with associated equipment at Gazuwaka (sl.no. iii of sub-paragraph b) are covered under the Transmission System associated with Ramagundam STPP including ICT at Khammam and Reactor at Gazuwaka.

l) The Petitioner has prayed for revision of transmission tariff allowed for the 2001-04 and 2004-09 tariff periods on account of change in IoL and Interest on Working Capital (IWC) to the extent of revision in IoL and in Maintenance Spares in terms of the judgments of the APTEL dated 22.1.2007 in Appeal No. 81/2005 and batch matters and 13.6.2007 in Appeal No. 139/2006 and batch matters respectively; consequential revision of transmission tariff allowed for the 2009-14 tariff period; truing up of tariff of the 2014-19 tariff period; and determination of transmission tariff of the 2019-24 tariff period for Combined Asset.

m) The APTEL in judgment dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters pertaining to generating stations of NTPC Limited had considered 04 (four) issues. The issues considered by the APTEL and its decisions/directions are as follows:

Sr. No.	Issue	APTEL's decisions/ directions
1	Whether APTEL can enquire into the validity of Regulations framed by the Commission	Challenge to the validity of Regulations framed by the Commission falls outside the purview of APTEL
2	Computation of IoL	In view of the order of APTEL dated 14.11.2016 in Appeal Nos. 94 and 96 of 2005 and order dated 24.1.2007 passed in Appeal Nos. 81 to 87, 89 to 93 of 2005, computation of loan has to be based on loan repayment on normative basis. The Commission is required to recalculate the loan outstanding as on 31.3.2004 based on loan repayment on normative basis
3(a)	O&M Expenses: Inadequate provision of employee costs as part of O&M Expenses due to variation in salary and wages	Commission's view upheld
3(b)	O&M Expenses: Non-inclusion	Commission's view upheld



	of incentives and <i>ex-gratia</i> payment to employees	
4	Cost of spares for calculation of working capital	Commission's view upheld

n) The APTEL in its judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters pertaining to generating stations of NTPC Limited had considered 09 (nine) issues. The issues considered and the decisions/ directions of the APTEL are as follows:

Sr. No.	Issue	APTEL's decisions/ directions
I	Computation of outstanding loan at the beginning of the tariff period i.e. 1.4.2004	The Commission is required to recalculate the loan outstanding as on 31.3.2004 based on loan repayment on normative basis
II	Consequence of refinance of loan	The Commission to consider the issue afresh
III	Treating depreciation available as deemed repayment of loan	The Commission to make a fresh computation of outstanding loan
IV	Admissibility of depreciation up to 90%	The Commission to consider the issue afresh
V	Cost of Maintenance Spares	The Commission to consider the issue afresh
VI	Impact of de-capitalisation of the assets on cumulative repayment of loan	The cumulative repayment of the loan proportionate to the assets de-capitalised required to be reduced. The Commission to act accordingly
VII	Non-consideration of normative transit loss for coal import	The Commission to consider afresh the transit losses for coal imported from coal mines other than the dedicated ones
VIII	FERV	FERV has been kept as pass through to ensure that any liability or gain, if any, arising on account of any variation in foreign exchange rates is passed on to the beneficiary as held in order dated 4.10.2006 in Appeal Nos. 135 to 140 of 2005. The Commission to act accordingly
IX	Computation of IoL in Singrauli Station	Net loan closing at the end of a year is reflected as net loan opening on the first day of the next year. The Commission shall re-compute the interest accordingly

o) The Commission and certain interested parties preferred Civil Appeals against the APTEL's judgments before the Hon'ble Supreme Court in 2007. The Appeals were admitted and initially stay was granted by the Hon'ble Supreme Court. Subsequently, on an assurance by NTPC Limited that the issues under



Appeal would not be pressed for implementation during the pendency of the Appeals, the stay was vacated by the Hon'ble Supreme Court.

p) Based on the APTEL's judgments dated 22.1.2007 and 13.6.2007, the Petitioner had sought re-determination of transmission tariff of its transmission assets for the 2001-04 and 2004-09 tariff periods in Petition No. 121/2007. The Commission after taking into consideration the pendency of Appeals before the Hon'ble Supreme Court adjourned the said petition *sine die* and directed that the same be revived after the disposal of Civil Appeals by the Hon'ble Supreme Court.

q) The Hon'ble Supreme Court vide judgment dated 10.4.2018 dismissed the said Civil Appeals filed against the APTEL's said judgments. Thus, the said judgments of the APTEL have attained finality.

r) Consequent to the Hon'ble Supreme Court's judgment dated 10.4.2018 in NTPC Limited matter, Petition No. 121/2007 was listed for hearing on 8.1.2019. The Commission vide order dated 18.1.2019 in Petition No. 121/2007 directed the Petitioner to submit its claim separately for the assets at the time of filing of truing up of the petitions for the 2014-19 tariff period.

s) The instant petition was heard on 3.8.2021 and in view of the APTEL's judgments dated 22.1.2007 and 13.6.2007 and the judgment of the Hon'ble Supreme Court dated 10.4.2018, tariff is being revised. Period-wise transmission tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods and suitable assumptions have been made at certain places and applied, which are indicated.

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

5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has also been published in the newspaper in accordance with



Section 64 of the Electricity Act, 2003 (the 2003 Act). No comments or suggestions have been received from the general public in response to the aforesaid notices published in the newspaper. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), Respondent No. 4, has filed its reply vide affidavit dated 25.8.2021 and has raised the issues of retrospective revision of tariff, Additional Capital Expenditure (ACE) and un-recovered depreciation due to de-capitalisation during the 2019-24 tariff period and sharing of transmission charges. The Petitioner vide affidavit dated 7.9.2021 has filed rejoinder to TANGEDCO's reply. The issues raised by TANGEDCO and the clarifications given by the Petitioner are considered in the relevant portions of this order.

Re: Interest on Loan

6. The APTEL while dealing with the issue of computation of IoL, in judgment dated 22.1.2007 observed that IoL for the period from 1.4.1998 to 31.3.2001 shall be computed only on normative loan repayment as per its judgement dated 14.11.2006 in Appeal Nos. 94 and 96 of 2005. The APTEL vide judgment dated 14.11.2006 had set aside the Commission's methodology of computation of loan on the actual repayment basis or normative repayment whichever is higher and held that the Commission is required to adopt normative debt repayment methodology for working out IoL liability for the period from 1.4.1998 to 31.3.2001. In view of the above, the interest allowed for the 2001-04 and 2004-09 tariff periods is revised on the basis of the normative debt repayment methodology.

Re: Additional Capital Expenditure

7. The APTEL vide judgment dated 13.6.2007 in Appeal No. 139 of 2006 and others held that ACE after COD should also be considered for computation of maintenance spares. In view of the above, the maintenance spares to be considered



for computation of working capital for the 2001-04 and 2004-09 periods are also required to be revised taking into consideration ACE after COD.

Re: Depreciation

8. As regards depreciation, the APTEL vide judgment dated 13.6.2007 in Appeal No. 139 of 2006 observed that depreciation is an expense and it cannot be deployed for deemed repayment of loan and accordingly directed the Commission to compute the outstanding loan afresh. In view of the above, the outstanding loan allowed for the 2001-04 and 2004-09 periods is revised in the instant order.

9. The revision of transmission tariff allowed for the 2001-04 and 2004-09 tariff periods necessitates the revision of transmission tariff allowed for the 2009-14 tariff period, which is also being done in the present order. The implementation of the directions of the APTEL vide judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and dated 13.6.2007 in Appeal No. 139/2006 and batch matters respectively was been kept pending in case of the Petitioner awaiting the outcome of the Civil Appeals filed before the Hon'ble Supreme Court. Taking into consideration the facts of the case and keeping in view the interest of the consumers, we are of the view that the beneficiaries should not be burdened with the carrying cost for the difference in the tariff allowed earlier and allowed in the instant order for the 2001-04, 2004-09 and 2009-14 tariff periods. Therefore, we direct that the Petitioner will neither claim nor pay any carrying cost from or to the beneficiaries for the difference, if any, in the tariff allowed earlier and the tariff being allowed in the instant order. Further, the said difference in tariff shall be recovered/ paid over a period of six months from the date of issue of this order.



10. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 10.1.2020, the Petitioner's affidavit dated 30.7.2021 filed in response to technical validation letter, TANGEDCO's reply filed vide affidavit dated 25.8.2021 and the Petitioner's rejoinder filed vide affidavit dated 7.9.2021.

11. The hearing in this matter was held on 3.8.2021 through video conference and the order was reserved. Having heard the learned counsel for TANGEDCO and representatives of the Petitioner and after perusal of the materials on record, we proceed to dispose of the petition.

12. TANGEDCO vide affidavit dated 25.8.2021 has raised several issues referring to Hon'ble Supreme Court's judgment in U.P. Power Corporation Limited vs. NTPC Limited [(2009) 6 SCC 235] including the issues of revision applications filed by NTPC Limited for its Korba and Dadri Power Stations, claiming allowance of revised costs incurred during 2000-2001. TANGEDCO has raised the same issues in several other petitions despite the issue having been decided by the Commission. Therefore, we are not dealing with this issue in this Petition.

REVISION OF TRANSMISSION CHARGES ALLOWED FOR THE 2001-04, 2004-09 AND 2009-14 TARIFF PERIODS

2001-04 Period

13. The Commission vide order dated 20.2.2004 in Petition No. 53/2002 had allowed the transmission tariff for the transmission assets for the 2001-04 period which was subsequently revised vide order dated 8.2.2008 in Petition No. 53/2002 and the same is as follows:

(₹ in lakh)

Asset-I			
Particulars	2001-02	2002-03	2003-04
Depreciation	30.13	30.13	30.13
Interest on Loan	13.54	12.70	11.85



Asset-I			
Particulars	2001-02	2002-03	2003-04
Return on Equity	52.42	52.42	52.42
Advance against Depreciation	-	-	0.00
Interest on Working Capital	3.63	3.72	3.82
O&M Expenses	16.68	17.68	18.74
Total	116.40	116.65	116.96

(₹ in lakh)

Asset-II			
Particulars	2001-02	2002-03	2003-04
Depreciation	24.84	24.84	24.84
Interest on Loan	20.09	18.87	17.59
Return on Equity	54.24	54.24	54.24
Advance against Depreciation	0.00	0.00	0.00
Interest on Working Capital	2.47	2.48	2.49
O&M Expenses	16.68	17.68	18.74
Total	118.32	118.11	117.90

14. The Petitioner has claimed the revised transmission charges in respect of the transmission assets for the 2001-04 tariff period in this petition as follows:

(₹ in lakh)

Asset-I			
Particulars	2001-02	2002-03	2003-04
Depreciation	30.13	30.13	30.13
Interest on Loan	13.54	12.70	11.85
Return on Equity	52.42	52.42	52.42
Advance against Depreciation	-	-	0.00
Interest on Working Capital	3.63	3.72	3.82
O&M Expenses	16.68	17.68	18.74
Total	116.40	116.65	116.96

(₹ in lakh)

Asset-II			
Particulars	2001-02	2002-03	2003-04
Depreciation	24.84	24.84	24.84
Interest on Loan	20.22	18.96	17.70
Return on Equity	54.24	54.24	54.24
Advance against Depreciation	0.00	0.00	0.00
Interest on Working Capital	2.47	2.48	2.49
O&M Expenses	16.68	17.68	18.74
Total	118.46	118.21	118.01



15. We have considered the submissions of the Petitioner. The transmission tariff is allowed for the transmission assets on the basis of the following:

- a) Capital cost as on 1.4.2001 of ₹834.38 lakh and ₹713.20 lakh in respect of Asset-I and Asset-II respectively as allowed vide order dated 20.2.2004 and 8.2.2008 in Petition No. 53/2002;
- b) Capital cost as on 31.3.2004 of ₹834.38 lakh and ₹713.20 lakh in respect of Asset-I and Asset-II respectively as allowed vide order dated 20.2.2004 and 8.2.2008 in Petition No. 53/2002;
- c) Weighted Average Rate of Interest (WAROI) on actual loan, Weighted Average Rate of Depreciation (WAROD), Rate of IWC and O&M Expenses as per order dated 20.2.2004 and 8.2.2008 in Petition No. 53/2002; and
- d) As there was no ACE during the 2001-04 tariff period, there is no requirement to revise the maintenance spares component for calculating IWC.

16. In view of the above, the revised transmission charges allowed for the transmission assets for the 2001-04 tariff period are as follows:

(₹ in lakh)

Asset-I			
Particulars	2001-02	2002-03	2003-04
Depreciation	30.13	30.13	30.13
Interest on Loan	13.54	12.70	11.85
Return on Equity	52.42	52.42	52.42
Advance against Depreciation	-	-	0.00
Interest on Working Capital	3.63	3.72	3.82
O&M Expenses	16.68	17.68	18.74
Total	116.40	116.65	116.96

(₹ in lakh)

Asset-II			
Particulars	2001-02	2002-03	2003-04
Depreciation	24.84	24.84	24.84
Interest on Loan	20.09	18.87	17.59
Return on Equity	54.24	54.24	54.24
Advance against Depreciation	-	-	0.00
Interest on Working Capital	2.47	2.48	2.49
O&M Expenses	16.68	17.68	18.74
Total	118.32	118.11	117.90



17. The revised Annual Fixed Charges (AFC) of the transmission assets as allowed vide order dated 8.2.2208 in Petition No. 53/2002, revised AFC claimed by the Petitioner in the instant petition and the revised AFC approved in the instant order is as follows:

(₹ in lakh)

Asset-I			
Particulars	2001-02	2002-03	2003-04
Allowed vide order dated 8.2.2208 in Petition No. 53/2002	116.40	116.65	116.96
Claimed by the Petitioner in the instant petition	116.40	116.65	116.96
Approved in the instant order	116.40	116.65	116.96

(₹ in lakh)

Asset-II			
Particulars	2001-02	2002-03	2003-04
Allowed vide order dated 8.2.2208 in Petition No. 53/2002	118.32	118.11	117.90
Claimed by the Petitioner in the instant petition	118.46	118.21	117.01
Approved in the instant order	118.32	118.11	117.90

2004-09 period

18. The Commission vide order dated 3.5.2006 in Petition No. 129/2004 had allowed the transmission tariff for the transmission assets for the 2004-09 tariff period which was subsequently revised vide order dated 17.3.2008 in Petition No. 129/2004 and the same is as follows:

(₹ in lakh)

Asset-I					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	31.25	31.25	31.25	31.25	31.25
Interest on Loan	10.20	8.38	6.57	4.76	2.95
Return on Equity	49.71	49.71	49.71	49.71	49.71
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	3.34	3.40	2.47	3.54	3.61
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	122.62	122.00	120.42	120.89	120.42

(₹ in lakh)

Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	25.79	25.79	25.79	25.79	25.79
Interest on Loan	16.83	15.33	13.84	12.29	10.64



Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Return on Equity	47.46	47.46	47.46	47.46	47.46
Advance against Depreciation	-	-	-	-	-
Interest on Working Capital	3.26	3.32	3.39	3.46	3.53
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	121.47	121.16	120.90	120.64	120.33

19. The Petitioner has claimed the revised transmission charges in respect of the transmission assets for the 2004-09 tariff period in this petition as follows:

(₹ in lakh)

Asset-I					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	31.25	31.25	31.25	31.25	31.25
Interest on Loan	10.68	9.95	9.33	8.71	8.10
Return on Equity	49.71	49.71	49.71	49.71	49.71
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	3.35	3.43	3.52	3.61	3.70
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	123.11	123.59	124.23	124.91	125.66

(₹ in lakh)

Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	25.79	25.79	25.79	25.79	25.79
Interest on Loan	16.91	15.52	14.03	12.43	10.71
Return on Equity	47.46	47.46	47.46	47.46	47.46
Advance against Depreciation	-	-	-	-	-
Interest on Working Capital	3.26	3.32	3.39	3.46	3.53
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	121.54	121.35	121.09	120.78	120.39

20. We have considered the submissions of the Petitioner. The transmission tariff is allowed for the transmission assets on the basis of the following:

- Capital cost as on 31.3.2009 of ₹865.24 lakh and ₹740.67 lakh in respect of Asset-I and Asset-II respectively as allowed by the Commission vide order dated 3.5.2006 and 17.3.2008 in Petition No. 129/2004; and
- WAROI on actual loan, WAROD, Rate of IWC and O&M Expenses as per order dated 3.5.2006 and 17.3.2008 in Petition No. 129/2004.



21. In view of the above, the revised transmission charges allowed for the transmission asset for the 2004-09 tariff period are as follows:

(₹ in lakh)

Asset-I					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	31.25	31.25	31.25	31.25	31.25
Interest on Loan	10.68	9.95	9.33	8.71	8.10
Return on Equity	49.71	49.71	49.71	49.71	49.71
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	3.35	3.43	3.52	3.61	3.70
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	123.11	123.59	124.23	124.91	125.66

(₹ in lakh)

Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	25.79	25.79	25.79	25.79	25.79
Interest on Loan	16.91	15.52	14.03	12.43	10.71
Return on Equity	47.46	47.46	47.46	47.46	47.46
Advance against Depreciation	-	-	-	-	-
Interest on Working Capital	3.26	3.32	3.39	3.46	3.53
O&M Expenses	28.12	29.25	30.42	31.63	32.90
Total	121.55	121.35	121.09	120.78	120.39

22. The revised AFC of the transmission assets allowed vide order dated 17.3.2008 in Petition No. 129/2004, revised AFC claimed by the Petitioner in the instant petition and the revised AFC approved in the instant order is as follows:

(₹ in lakh)

Asset-I					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Allowed vide order dated 17.3.2008 in Petition No. 129/2004	122.62	122.00	120.42	120.89	120.42
Claimed by the Petitioner in the instant petition	123.11	123.59	124.23	124.91	125.66
Approved in the instant order	123.11	123.59	124.23	124.91	125.66

(₹ in lakh)

Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Allowed vide order dated 17.3.2008 in Petition No. 129/2004	121.47	121.16	120.90	120.64	120.33



Asset-II					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Claimed by the Petitioner in the instant petition	121.54	121.35	121.09	120.78	120.39
Approved in the instant order	121.55	121.35	121.09	120.78	120.39

2009-14 Tariff Period

23. The Commission vide order dated 8.12.2010 in Petition No. 119/2010 had allowed the transmission tariff in respect of Combined Asset for the 2009-14 tariff period which was subsequently trued-up vide order dated 6.11.2015 in Petition No. 138/TT/2014. The trued-up tariff allowed vide order dated 6.11.2015 is as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	40.30	40.30	40.30	40.30	40.30
Interest on Loan	15.45	12.55	9.24	5.64	1.96
Return on Equity	129.61	134.36	134.50	134.50	136.12
Interest on Working Capital	9.11	9.44	9.70	9.96	10.27
O&M Expenses	104.80	110.80	117.14	123.84	130.92
Total	299.27	307.45	310.87	314.23	319.56

24. The Petitioner has claimed the revised transmission charges in respect of Combined Asset for the 2009-14 tariff period in this petition as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	40.30	40.30	40.30	40.30	40.30
Interest on Loan	23.82	21.26	18.16	14.57	10.61
Return on Equity	129.62	134.36	134.50	134.50	136.11
Interest on Working Capital	9.28	9.63	9.88	10.14	10.45
O&M Expenses	104.80	110.80	117.14	123.84	130.92
Total	307.82	316.34	319.98	323.36	328.38

25. We have considered the submissions of the Petitioner. The revised transmission tariff is allowed on the basis of the following:

- a) Admitted capital cost as on 1.4.2009 of ₹1605.90 lakh; and
- b) WAROI on actual loan and WAROD as per order dated 6.11.2015 in Petition No. 138/TT/2014.



26. AFC allowed vide order dated vide dated 6.11.2015 in Petition No. 138/TT/2014, the revised AFC claimed by the Petitioner in the instant petition and AFC approved in the instant order are as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Allowed vide order dated vide dated 6.11.2015 in Petition No. 138/TT/2014	299.28	307.45	310.88	314.24	319.56
Claimed by the Petitioner in the instant petition	307.82	316.34	319.98	323.36	328.38
Approved in the instant order	307.81	316.35	319.98	323.35	328.40

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

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	37.09	37.09	37.09	37.09	37.09
Interest on Loan	7.25	4.03	1.21	0.00	0.00
Return on Equity	136.22	136.84	136.77	136.77	137.14
O&M Expenses	120.60	124.60	128.74	133.02	137.42
Interest on Working Capital	10.82	10.98	11.14	11.35	11.60
Total	311.98	313.54	314.95	318.23	323.25

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M Expenses	10.05	10.38	10.73	11.09	11.45
Working Capital for Maintenance Spares	18.09	18.69	19.31	19.95	20.61
Working Capital for Receivables	52.00	52.26	52.49	53.04	53.88
Total Working Capital	80.14	81.33	82.53	84.08	85.94
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	10.82	10.98	11.14	11.35	11.60



Capital Cost

29. The Commission vide order 6.11.2015 in Petition No. 138/TT/2014 had allowed the capital cost as on 1.4.2014 of ₹1605.90 lakh and the same has been considered as the capital cost as on 31.3.2019. Since no ACE has been claimed by the Petitioner during 2014-19 tariff period, the capital cost as on 31.3.2019 of ₹1605.90 lakh has been considered for the purpose of truing up of the tariff for the 2014-19 period. The capital cost of the transmission project has been calculated in accordance with Regulation 9(3) of the 2014 Tariff Regulations and it is as follows:

(₹ in lakh)		
Capital Cost Allowed (as on 1.4.2014)	ACE (2014-19)	Capital Cost Allowed (as on 31.3.2019)
1605.90	0.00	1605.90

Debt-Equity Ratio

30. The debt-equity ratio has been allowed in accordance with Regulation 19(3) of the 2014 Tariff Regulations. As per Regulation 19(3) of the 2014 Tariff Regulations, the debt-equity ratio allowed by the Commission for determination of tariff for the period ending on 31.3.2014 shall be considered. Accordingly, the details of the debt-equity ratio as on 1.4.2014 and 31.3.2019 in respect of Combined Asset are as follows:

Funding	Capital Cost (as on 1.4.2014) (₹ in lakh)	(in %)	Total Capital Cost (as on 31.3.2019) (₹ in lakh)	(in %)
Debt	911.81	56.78	911.81	56.78
Equity	694.10	43.22	694.10	43.22
Total	1605.90	100.00	1605.90	100.00

Depreciation

31. The Combined Asset has already completed 12 years before 1.4.2014. Accordingly, depreciation has been calculated based on the remaining depreciable



value to be recovered over the balance useful life and the trued-up depreciation allowed in respect of Combined Asset during the 2014-19 period is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	1605.90	1605.90	1605.90	1605.90	1605.90
ACE	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	1605.90	1605.90	1605.90	1605.90	1605.90
Average Gross Block	1605.90	1605.90	1605.90	1605.90	1605.90
Weighted Average Rate of Depreciation (WAROD) (in %)	2.31	2.31	2.31	2.31	2.31
Balance useful life of the asset (Year)	8	7	6	5	4
Lapsed Life of the asset (Year)	17	18	19	20	21
Depreciable Value	1445.31	1445.31	1445.31	1445.31	1445.31
Depreciation during the year	37.07	37.07	37.07	37.07	37.07
Cumulative depreciation at the end of the year	1185.80	1222.87	1259.95	1297.02	1334.09
Remaining Depreciable Value at the end of the year	259.51	222.44	185.36	148.29	111.22

32. Depreciation in respect of Combined Asset as allowed vide order dated 6.11.2015 in Petition No. 138/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 6.11.2015 in Petition No. 138/TT/2014	40.30	40.30	40.30	40.30	40.30
Claimed by the Petitioner in the instant petition	37.09	37.09	37.09	37.09	37.09
Approved after true-up in this order	37.07	37.07	37.07	37.07	37.07

Interest on Loan

33. The Petitioner has claimed WAROI on loan based on its actual loan portfolio and rate of interest. Accordingly, IoL has been calculated based on actual interest rate in accordance with Regulation 26 of the 2014 Tariff Regulations. The trued-up IoL allowed in respect of Combined Asset is as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	911.81	911.81	911.81	911.81	911.81
Cumulative Repayments up to Previous Year	809.79	846.86	883.94	911.81	911.81
Net Loan-Opening	102.02	64.95	27.87	0.00	0.00
Additions	0.00	0.00	0.00	0.00	0.00
Repayment during the year	37.07	37.07	27.87	0.00	0.00
Net Loan-Closing	64.95	27.87	0.00	0.00	0.00
Average Loan	83.48	46.41	13.94	0.00	0.00
Weighted Average Rate of Interest on Loan (in %)	8.6800	8.6800	8.6800	8.6800	8.6800
Interest on Loan	7.25	4.03	1.21	0.00	0.00

34. IoL in respect of Combined Asset as allowed vide order dated 6.11.2015 in Petition No. 138/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 6.11.2015 in Petition No. 138/TT/2014	0.11	0.00	0.00	0.00	0.00
Claimed by the Petitioner in the instant petition	7.25	4.03	1.21	0.00	0.00
Approved after true-up in this order	7.25	4.03	1.21	0.00	0.00

Return on Equity

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

Year	Claimed effective tax rate (in %)	Grossed-up RoE (in %) [(Base Rate)/(1-t)]
2014-15	21.018	19.625
2015-16	21.382	19.715
2016-17	21.338	19.705
2017-18	21.337	19.705
2018-19	21.549	19.758



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

37. MAT rates considered in order dated 27.4.2020 for the purpose of grossing up of 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, is considered in the instant case which are as follows:

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

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

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	694.10	694.10	694.10	694.10	694.10
Additions	0.00	0.00	0.00	0.00	0.00
Closing Equity	694.10	694.10	694.10	694.10	694.10
Average Equity	694.10	694.10	694.10	694.10	694.10
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity	136.11	136.77	136.77	136.77	137.14

39. RoE in respect of Combined Asset as allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order is as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014	136.11	136.11	136.11	136.11	136.11
Claimed by the Petitioner in the instant petition	136.22	136.84	136.77	136.77	137.14
Approved after true-up in this order	136.11	136.77	136.77	136.77	137.14

Operation & Maintenance Expenses (O&M Expenses)

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

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
2 Numbers 400 kV sub-station bays	120.60	124.60	128.74	133.02	137.42

41. Regulation 29(3) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The norms specified in respect of the element covered under Combined Asset are as follows:

Element	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
400 kV sub-station	₹60.30 lakh/ bay	₹62.30 lakh/ bay	₹64.37 lakh/ bay	₹66.51 lakh/ bay	₹68.71 lakh/ bay

42. The O&M Expenses in respect of Combined Asset are approved as per Regulation 29(3) of the 2014 Tariff Regulations and the same are as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
2 Numbers 400 kV sub-station bays	120.60	124.60	128.74	133.02	137.42

43. O&M Expenses in respect of Combined Asset as allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014	120.60	124.60	128.74	133.02	137.42
Claimed by the Petitioner in the instant petition	120.60	124.60	128.74	133.02	137.42
Approved after true-up in this order	120.60	124.60	128.74	133.02	137.42

Interest on Working Capital

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M Expenses (O&M Expenses for 1 month)	10.05	10.38	10.73	11.09	11.45
Working Capital for Maintenance Spares (15% of O&M Expenses)	18.09	18.69	19.31	19.95	20.61
Working Capital for Receivables (Equivalent to 2 months of annual fixed cost)	51.97	52.24	52.49	53.04	53.87
Total Working Capital	80.11	81.32	82.53	84.07	85.94
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest of Working Capital	10.82	10.98	11.14	11.35	11.60

45. IWC in respect of Combined Asset as allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014	10.73	10.94	11.17	11.41	11.65
Claimed by the Petitioner in the instant petition	10.82	10.98	11.14	11.35	11.60
Approved after true-up in this order	10.82	10.98	11.14	11.35	11.60

Approved Annual Fixed Charges for the 2014-19 Tariff Period

46. The trued-up AFC allowed for Combined Asset for the 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	37.07	37.07	37.07	37.07	37.07
Interest on Loan	7.25	4.03	1.21	0.00	0.00
Return on Equity	136.11	136.77	136.77	136.77	137.14
O&M Expenses	120.60	124.60	128.74	133.02	137.42
Interest on Working Capital	10.82	10.98	11.14	11.35	11.60
Total	311.85	313.45	314.94	318.21	323.23

47. Accordingly, the Annual Transmission Charges as allowed vide order dated 6.11.2015 in Petition No. 138/TT/2015, claimed by the Petitioner in the instant petition and allowed after truing up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 6.11.2015 in Petition No. 138/TT/2014	307.84	311.95	316.32	320.84	325.48
Claimed by the Petitioner in the instant petition	311.98	313.54	314.95	318.23	323.25
Approved after true-up in this order	311.85	313.45	314.94	318.21	323.23

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

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



(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	37.07	69.30	232.91	30.15	58.00
Interest on Loan	0.00	1.10	1.10	3.11	4.21
Return on Equity	130.37	133.80	141.04	147.32	144.20
O&M Expenses	177.07	183.43	189.86	196.69	203.29
Interest on Working Capital	10.24	11.08	13.94	11.30	11.96
Total	354.75	398.71	578.75	388.57	421.66

49. The Petitioner has claimed IWC in respect of Combined Asset for the 2019-24 period as follows:

(₹ in lakh)

Particular	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses	14.76	15.29	15.82	16.39	16.94
Working Capital for Maintenance Spares	26.56	27.51	28.48	29.50	30.49
Working Capital for Receivables	43.62	49.16	71.37	47.91	51.84
Total Working Capital	84.94	91.96	115.67	93.80	99.27
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	10.24	11.08	13.94	11.30	11.96

Capital Cost

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

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

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

(a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*

(b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*

(c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*

(d) *Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*

(e) *Capitalised Initial Spares subject to the ceiling rates in accordance with these regulations;*

(f) *Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*

(g) *Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*



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

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

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

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

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

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

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



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

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

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

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

(d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and

(e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.”

51. The Petitioner has submitted that capital cost as on 31.3.2019 of ₹1605.90 lakh has been considered for computation of tariff for the 2019-24 tariff period.

52. We have considered the submissions of the Petitioner and the admitted capital cost of ₹1605.90 lakh as on 31.3.2019 as trued-up in this order has been considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure

53. Regulation 25 of the 2019 Tariff Regulations provides as follows:

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

(1) The ACE 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 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.”

54. The Petitioner has projected ₹865.76 lakh and ₹559.18 lakh as ACE and de-capitalisation respectively during the 2019-24 tariff period in this petition. The Petitioner has submitted that the said ACE is covered under Regulations 25(2)(a) and 25(2)(c) of the 2019 Tariff Regulations and it is necessary for efficient and secure operation of the transmission project.

55. The details of capital cost as on 31.3.2019 (actual), ACE and de-capitalisation (projected) during the 2019-24 period along with reasons for ACE, capital cost as on 31.3.2024 (claimed) as submitted by the Petitioner in this petition are as follows:

	Cost (₹ in lakh)	Description
Actual cost as on 31.3.2019	-	Freehold Land
	48.34	Building and Civil Works
	1553.42	Sub-station
	-	Transmission Line
	4.14	PLCC
	-	Lease Hold Land
Total Cost as on 31.3.2019	1605.90	
ACE 2020-21	268.59	ACE is towards replacement of problematic/defective equipment that are going to complete 25 years. ACE on account of deconstruction of old and dilapidated buildings that have completed 30 years of useful life
De-capitalisation 2020-21	28.32	
ACE 2021-22	337.14	
De-capitalisation 2021-22	133.74	
ACE 2022-23	230.74	
De-capitalisation 2022-23	82.98	
ACE 2023-24	29.29	
De-capitalisation in 2023-24	314.14	
Total ACE	865.76	
Total De-capitalisation	559.18	
Net ACE	306.58	



Total Cost as on 31.3.2024	1912.48
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56. The Petitioner has submitted in this petition that equipment proposed for replacement at sub-stations under the transmission project were commissioned in 1997 and their weighted average useful life of 25 years is getting completed in 2022. The equipment are in use from the date of commissioning and during various routine/alter tests, critical conditions and operational problems have been observed which is a threat to the reliability and security of the grid. Further, the designs have undergone substantial changes over the period and manufacturers have discontinued the product models and the suppliers are unable to replenish parts required for quick restoration and repairs have turned out to be unviable. Also, in view of absence of proper support from suppliers and due to obsolescence of design, the maintenance of these equipment is not possible anymore.

57. The Petitioner vide affidavit dated 30.7.2021 has submitted that ACE and de-capitalisation during the 2019-24 period has been revised to ₹497.24 lakh and ₹243.46 lakh respectively, as earlier due to inadvertent error, wrong ACE and de-capitalisation was claimed. The detailed justification for ACE claimed is as follows:

a) Replacement of 400 kV and 220 kV “ABB” make Pneumatically operated circuit breakers at Hyderabad and Kadapa

- Circuit Breakers (CBs) supplied under the transmission project are of pneumatic operated type and this type of Pneumatic technology has become obsolete and OEM has stopped production of these types of CBs. The spares and service support from OEM was very poor for this type of CB and cost of spares are exorbitantly high and takes much longer time. Subsequently, OEM has stopped giving service support. CBs are giving frequent maintenance problems such as Pneumatic drive/ Magnetic ventil failures, air leakages from the various parts of the mechanisms, SF6 gas leakages etc. leading to frequent breakdown, prolonged outages and



unreliable operation. In this type of CBs where controlled switching device are installed, issue has also been observed in CSD tuning and performance due to large scattering/ variation in operating time of CBs resulting in adverse effect on associated shunt reactors.

- In view of the above, the Petitioner has proposed to replace 400 kV and 220 kV CBs at Hyderabad and Kadapa.

b) Replacement of 400 kV and 220 kV “BHEL/WSI” make dead tank type Porcelain Current Transformers (CTs) at Hyderabad and Kadapa

- The proposed CT’s under the transmission project are going to complete 25 years in 2019-24 and of old “BHEL/WSI” make dead tank type with Porcelain housing. Oil leakages from different points such as dead tank joint gasket portion, secondary terminals, primary terminals, domes, oil sight glass etc. have been noticed in many of these CTs which in long run may lead to low oil level, moisture ingress and subsequent failure. CTs are hermetically sealed equipment and therefore major repair at site is not recommended. Further, as there is ingress of moisture, complete replacement of active insulation part is required at manufacturer works which will not be techno-economically viable. The relevant communication from the OEM has also been submitted.
- In view of the above, the Petitioner has proposed to replace 400 kV and 220 kV CTs at Hyderabad (400 kV: 6 Numbers, 220 kV: 3 Numbers) and Kadapa (400 kV: 6 Numbers).

c) Replacement of 220 kV CVTs at Hyderabad and Khammam Station (6 Numbers)

- CVTs proposed for replacement are going to complete 25 years in 2019-24 and are used for protection and metering purpose. Ageing, leakage/ seepage from multiple points such as EMU tank, oil level glass, secondary terminal boxes are observed. Due to ageing, capacitance of CVTs have changed due to internal failure of capacitor elements resulting into drift in secondary voltage. CVT secondary output is used for metering and protection system. The variation in secondary voltage may result into inaccurate metering and wrong operation of protection relays of



transmission elements. CVTs are hermetically sealed equipment and repairing of these equipment at site level is not recommended. Hence these aged CVTs are not reliable for intended performance and prone to failure at any time causing forced outage of the critically loaded feeders.

- After 25 years of operation repairing of CVTs at manufacturer works is also not techno economically viable due to change in design by the manufacturer and repair requires change of majority part of CVT even in case of problem in only part of equipment. Also, manufacturer has also stopped manufacturing and repair works of these types of CVTs. The relevant communication from OEM has also been submitted.
- In view of the above, the Petitioner has proposed to replace 220 kV CVTs at Hyderabad.

d) Replacement of 400 kV and 220 kV “S&S” and “Hivelm” make Isolators at Hyderabad and Kadapa

- The proposed Isolators are of S&S and Hivelm make and have completed 25 years of useful life and are mainly of Horizontal Centre Break (HCB) type and frequent problem of misalignment are being faced. Current transfer assembly on isolator top and other major spares are now no more available in most of the cases due to old/ obsolete design of isolators and thus creating problem in maintaining these old isolators. Due to improper health of isolator specially interlock mechanism, drive mechanism etc., the isolators are unable to maintain the stable condition some times during storms and high wind conditions and getting opened in ON LOAD condition which is dangerous to system as well as to the operating personal.
- Due to rusting, many MOM boxes got damaged leading to problem in components of MOM boxes and motorised operation of isolators are not possible. This leads to problem of improper indication, control, interlock and remote operation of isolators, which is not safe. Due to ageing the TBs inside MOM boxes has become brittle and many times terminals comes in contact with boxes and creates DC earth fault, which is detrimental to the control and protection system.
- Due to age and wear tear, many times even local operation also becomes



difficult. Further, timely support is not available from OEM due to old design. Existing spares have already been exhausted. Failure of any component may lead to improper and un-reliable operation of isolator/ Earth switches and risk

to the system and safety of O&M staff. The letter of OEM (S&S, Raychem then “Hivelm”) for non-availability of service support has also been submitted.

- In view of the above, the Petitioner has proposed to replace 12 set of Isolators at Hyderabad (400 kV: 5 Numbers, 220 kV: 1 Number) and Kadapa (400 kV: 6 Numbers).

e) Replacement of old and obsolete static/ Electro mechanical type Protection relays at Kadapa

- The Differential, REF/Direction overcurrent cum earth fault, Auto reclosure, Master trip relays, etc used for protection of line/ICT/Reactor are of Static/Electro mechanical type and are 25years old. Due to ageing, the general performance of relays deteriorated and become unreliable. The contacts of these relays have become sluggish and mal-operation in certain cases are observed and attended/ replaced on case to cases basis. Hence in many such cases, the relays are to be kept out of service to avoid maloperation and the only option is replacement.
- Further these relays possess following drawbacks:
 - Lack of self-diagnostics features;
 - No Disturbance recording/Event logging features;
 - Not possible for remote monitoring /remote accessing; and
 - Lack of time synchronization facility.
- Detailed trip analysis is not possible in case of tripping. In view of that old & obsolete static /Electro mechanical type Protection relays are proposed to be replaced with IEC61850 compliant numerical type relays which overcomes above mentioned disadvantages at Kadapa.

f) Replacement of Control panels and protection panels with SAS based C&R panel along with SCADA at Hyderabad

- These panels were installed during 1995 and going to complete 25 years of service by 2019-24 tariff period. These relays are of electromagnetic/ static



type and obsolete. The OEMs have itself phased out these models of relays and there is no spares/ service support. In case of any failures and non-availability of spares, the relays are to be kept out of service to avoid mal operation and the only option is replacement. Due to ageing, problem of mal-operation/ non-operation occurs because of sluggish/stuck up of contacts and problem in the coils. These relays do not comply with IEC 61850 and do not have DR feature resulting in difficulties in fault analysis. The Cable, Wiring and Terminal Blocks inside both Control and protection panels and Equipment MBs are aged, deteriorated and have become brittle leading to DC leakages and other circuit failures. TBs of suitable sizes are also not available in market for replacement and also It is not feasible to replace the TBs and wiring inside these panels.

- Due to ageing, most of the control and power cables laid in the sub-station have aged, deteriorated and showing sign of surface damages causing earth faults and DC earth leakages and many times resulting into mal-operation of control and protection system. Presently control and power cables are laid between central control room and switchyard equipment. Replacement of the cables may require long outage of the sub-station, which may not be feasible.
- Replacement of old C&R panels and power and control cables with SAS based C&R system shall be the most feasible and techno-economical solution. This will require very less quantity of power and control cables and shall also comply with latest technical requirement. In this case, the outage of system shall also be less.
- In view of the above, the Petitioner has proposed to replace Line protection panel, Transformer and Reactor protection panels at Hyderabad Sub-station with SAS based C&R panel along with SCADA.

58. The Petitioner vide affidavit dated 30.7.2021 has submitted year-wise and equipment-wise ACE claimed during the 2019-24 period. The useful life of the transmission project is getting completed in 2022-23 and, therefore, it has been proposed to be extended by 5 years with effect from 2022-23. As per Regulation 33(7)



of the 2019 Tariff Regulations, the Petitioner is required to submit the details of proposed capital expenditure along with justification and proposed life extension.

59. The Petitioner vide affidavit dated 30.7.2021 has further submitted that a small portion of the asset is getting replaced and majority of the equipment which are not planned to be replaced have already completed more than 24 years of service. Considering the overall equipment, useful life has been proposed to be extended by 5 years. Also, letter regarding technical approval for ACE claimed during the 2019-24 period has been submitted. Further, no ACE/ de-capitalisation during the 2019-24 tariff period under the head building and civil works has been claimed by the Petitioner as per Auditor's Certificate and revised Auditor's Certificate dated 18.12.2019 and 27.7.2021 respectively.

60. In addition to the above submissions, the Petitioner vide affidavit dated 30.7.2021 has submitted the details of estimated ACE/ de-capitalisation (during the 2019-24 period) and capital cost as on 31.3.2024 as follows:

Particulars	Cost (₹ in lakh)
Capital Cost as on 31.3.2019	1605.90
Estimated ACE during 2020-21	135.30
Estimated de-capitalisation during 2020-21	(9.41)
Estimated ACE during 2021-22	199.83
Estimated de-capitalisation during 2021-22	(44.79)
Estimated ACE during 2022-23	145.59
Estimated de-capitalisation during 2022-23	(40.27)
Estimated ACE during 2023-24	16.52
Estimated de-capitalisation during 2023-24	(148.99)
Estimated capital cost as on 31.03.2024	1859.68

61. Based on the revised Auditor's Certificate dated 27.7.2021, the details of estimated capital cost as on 31.3.2024 (including estimated ACE/ de-capitalisation



during the 2019-24 tariff period) as claimed by the Petitioner in this case and as submitted vide affidavit dated 30.7.2021 are as follows:

(₹ in lakh)

Particulars	Land	Building and Civil Works	Transmission Line	Sub-station	PLCC	IT
Capital Cost as on 31.3.2019	-	48.34	-	1553.42	4.14	-
Estimated ACE during 2020-21	-	-	-	135.30	-	-
Estimated De-capitalisation during 2020-21	-	-	-	(9.41)	-	-
Estimated ACE during 2021-22	-	-	-	199.83	-	-
Estimated De-capitalisation during 2021-22	-	-	-	(44.79)	-	-
Estimated ACE during 2022-23	-	-	-	145.59	-	-
Estimated De-capitalisation during 2022-23	-	-	-	(40.27)	-	-
Estimated ACE during 2023-24	-	-	-	16.52	-	-
Estimated De-capitalisation during 2023-24	-	-	-	(148.99)	-	-
Estimated capital cost as on 31.03.2024	-	48.34	-	1807.20	4.14	-

62. TANGEDCO vide affidavit dated 25.8.2021 has submitted that the Petitioner has also proposed ACE during the 2019-24 period on account of replacement of old and dilapidated buildings that have completed 30 years of useful life. Further, referring to the Commission's observations (in order dated 6.5.2021 in Petition No. 155/TT/2020) viz. building and civil works having been considered as non-critical in nature; consent from beneficiaries is required for ACE proposed at fag end of life and submitted that ACE claimed towards buildings and civil works may be disallowed under Regulation 25(2)(a) of the 2019 Tariff Regulations, TANGEDCO has submitted that in the absence of consents from the beneficiaries/ Respondents for all the proposed de-capitalisation of assets and ACE claim of ₹306.58 lakh during the 2019-24 tariff period may be dis-allowed.

63. In response, the Petitioner denying the afore-stated contentions of TANGEDCO, has vide affidavit dated 7.9.2021 submitted that as per revised Auditor's



Certificate dated 27.7.2021, no ACE under the head building and civil works has been claimed by the Petitioner.

64. We have considered the submissions of the Petitioner and TANGEDCO. It is observed that the Petitioner has claimed ACE towards replacement of sub-station equipment such as CBs, CTs, CVTs, Isolators, Control Panels and Protection Panels with SAS based C&R Panel along with SCADA at Hyderabad Sub-station. The Petitioner has not claimed any ACE under the head 'building and civil works'. Taking into consideration the submission of the Petitioner that the replacement of sub-station equipment are of critical nature and their failure may affect the stability and reliability of the grid, ACE proposed during 2019-24 is allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The detailed breakup of estimated ACE/ de-capitalisation allowed during the 2019-24 tariff period is as follows:

(₹ in lakh)

Particulars	Land	Building and Civil Works	Transmission Line	Sub-station	PLCC	IT
Capital Cost as on 31.3.2019	-	48.34	-	1553.42	4.14	-
Estimated ACE during 2020-21	-	-	-	135.30	-	-
Estimated De-capitalisation during 2020-21	-	-	-	(9.41)	-	-
Estimated ACE during 2021-22	-	-	-	199.83	-	-
Estimated De-capitalisation during 2021-22	-	-	-	(44.79)	-	-
Estimated ACE during 2022-23	-	-	-	145.59	-	-
Estimated De-capitalisation during 2022-23	-	-	-	(40.27)	-	-
Estimated ACE during 2023-24	-	-	-	16.52	-	-
Estimated De-capitalisation during 2023-24	-	-	-	(148.99)	-	-
Estimated capital cost as on 31.3.2024	-	48.34	-	1807.20	4.14	-

65. In view of the above, ACE and de-capitalisation allowed for the 2019-24 tariff period is as follows:



					(₹ in lakh)
Particulars	2020-21	2021-22	2022-23	2023-24	Total
ACE	135.30	199.83	145.59	16.52	497.24
De-capitalisation	9.41	44.79	40.27	148.99	243.46

66. Accordingly, the details of capital cost (including ACE/ de-capitalisation) considered for the 2019-24 tariff period are as follows:

				(₹ in lakh)
Capital Cost (as on 1.4.2019)	ACE (2019-24)	De-capitalisation (2019-24 period)	Capital Cost (as on 31.3.2024)	
1605.90	497.24	243.46	1859.68	

Adjustment in Equity

67. Regulation 18(3) of the 2019 Tariff Regulations provides as follows:

“18. Debt-Equity Ratio:

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

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

68. The notional COD of Combined Asset was 1.4.1997. The debt-equity ratio as on COD was 56.78:43.22. The Weighted Average Life for Combined Asset was determined as 25 years. Thus, Combined Asset shall complete its useful life on 31.3.2022. First Proviso to Regulation 18(3) of the 2019 Tariff Regulations provides that in case of a transmission system which has completed its useful life on or after 1.4.2019 and if the actual equity deployed is more than 30% of the capital cost, then the equity shall be restricted to 30% of the total equity deployed.

69. The debt-equity ratio as on 31.3.2019 is 56.78:43.22 i.e. the equity deployed is more than 30%. Therefore, as per first proviso to Regulation 18(3) of the 2019 Tariff Regulations, equity from 2022-23 onwards has been restricted to 30%. Depreciation



has been fully recovered (up to 90% of the capital cost) by the year 2021-22 and the loan has already been repaid prior to the 2014-19 period. Accordingly, the capital cost for the 2019-24 tariff period is allowed as follows:

Particulars	Value
Closing Equity as on 31.3.2019 (₹ in lakh)	694.10
Closing Equity as on 31.3.2020 (₹ in lakh)	694.10
Closing Equity as on 31.3.2021 (₹ in lakh)	730.62
Closing Equity as on 31.3.2022 (₹ in lakh)	771.21
Opening Equity as on 1.4.2022 (₹ in lakh)	566.05*
Net Reduction in Equity (Equity in excess of 30%)	235.92

*Represents 30% of Gross Block of ₹1886.83 lakh

Debt-Equity Ratio

70. 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.”

71. The debt-equity ratio for the 2019-24 tariff period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The de-capitalisation in the instant case is carried out in the debt-equity ratio as claimed vide Form 10B by the Petitioner. The debt-equity considered for the purpose of computation of tariff for the 2019-24 tariff period is as follows:

Debt-Equity for Capital Cost as on 1.4.2019:

Funding	Capital Cost (₹ in lakh) (as on 1.4.2019) (A)	(in %)
Debt	911.81	56.78
Equity	694.10	43.22
Total	1605.90	100.00

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

Funding	ACE (₹ in lakh) (B)	(in %)	De- capitalisation (₹ in lakh) (C)	(in %)	ACE (₹ in lakh) (D)	(in %)	De- capitalisation (₹ in lakh) (E)	(in %)
	2020-21				2021-22			
Debt	94.71	70.00	5.34	56.78	139.88	70.00	25.43	56.78
Equity	40.59	30.00	4.07	43.22	59.95	30.00	19.36	43.22
Total	135.30	100.00	9.41	100.00	199.83	100.00	44.79	100.00

As per form 10B submitted by the Petitioner



Funding	ACE (₹ in lakh) (F)	(in %)	De- capitalisation (₹ in lakh) (G)	(in %)	ACE (₹ in lakh) (H)	(in %)	De- capitalisation (₹ in lakh) (I)	(in %)
	2022-23				2023-24			
Debt	101.91	70.00	22.86	56.78	11.56	70.00	84.59	56.78
Equity	43.68	30.00	*12.08	30.00	4.96	30.00	44.70	30.00
Total	145.59	100.00	40.27	100.00	16.52	100.00	148.99	100.00

*Balance useful life as on 01.04.2022 is ZERO. Thus, Equity with respect to de-capitalised asset is considered as 30%

Debt-Equity for Capital Cost as on 31.3.2024:

Funding	Total Capital Cost (₹ in lakh) as on 31.3.2024 (J)=(A)+(B)-(C)+(D)-(E)+(F)-(G)+(H)-(I)
Debt	1121.64
Equity	738.04**
Total	1859.68

**Equity to be serviced as on 31.3.2024 is ₹557.90 lakh (₹738.04 lakh + ₹5.32 lakh + ₹19.70 lakh - ₹205.16 lakh i.e. Equity in excess of 30% reduced as discussed above)

Depreciation

72. 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 there of including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

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

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

"(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.”

73. TANGEDCO vide affidavit dated 25.8.2021 has submitted that the Petitioner has claimed the unrecovered depreciation amounting to ₹38.92 lakh in case of the de-capitalised Asset-I separately on account of de-capitalisation for the 2019-24 tariff period. TANGEDCO has further submitted that Tariff Regulations clearly prohibits recovery of the remaining value of the assets which are de-capitalised from the gross block. It has submitted that the Petitioner on the one hand is removing de-capitalised asset cost from the gross block and on the other hand, is trying to recover the unrecovered cost through other means. Also, there is no provision in the said Regulation to burden the beneficiaries by recovering or adjusting the unrecovered depreciation after replacement of the asset with new one and adding the cost of the asset to the gross block. The Petitioner is interested in protecting its commercial interest rather than following the provisions of the Tariff Regulations. The request of the Petitioner to recover the unrecovered depreciation amount of the de-capitalised assets may be declined.

74. In response, the Petitioner vide affidavit dated 7.9.2021 has submitted that the assets undergoing replacement are not fully depreciated. However, considering the condition of the equipment and non-availability of spare parts, it is found prudent to replace such old and obsolete equipment in order to maintain grid reliability and security. Also, any scrap value received over and above the limit shall be passed on to the beneficiaries. The Petitioner has submitted that unrecovered depreciation has been allowed by the Commission in respect of Micro-wave ULDC scheme and has further prayed to allow unrecovered depreciation claimed in this petition.



75. We have considered the submissions of the Petitioner and TANGEDCO. Although, the Petitioner has initially prayed for allowing the unrecovered depreciation in respect of elements de-capitalised in the 2019-24 tariff period but in its revised claims submitted vide affidavit dated 30.7.2021, the Petitioner has not claimed any unrecovered depreciation in respect of the elements de-capitalised during 2019-24. Moreover, the 2019 Tariff Regulations do not provide for recovery of unrecovered depreciation on account of de-capitalisation. Accordingly, the issue of recovery of unrecovered depreciation for elements de-capitalised during 2019-24 tariff period does not arise.

76. The transmission project has already completed more than 12 years before 1.4.2019. Accordingly, depreciation has been calculated based on the remaining depreciable value (up to 90% of existing gross block of assets) to be recovered over the balance useful life up to 31.3.2022 and thereafter no depreciation is allowed on existing assets. The Petitioner has proposed life extension of the transmission system by five years and has claimed depreciation for the new ACE over a period of five years. We are of the view that the replaced transmission assets are likely to provide service much beyond five years and therefore, these assets need to be depreciated on normative basis. Hence, depreciation for ACE (new additions) is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations. Depreciation allowed for Combined Asset for the 2019-24 period is as follows:

	(₹ in lakh)				
Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	1605.90	1605.90	1596.49	1551.70	1511.43
ACE	0.00	0.00	0.00	0.00	0.00
De-capitalisation	0.00	9.41	44.79	40.27	148.99
Closing Gross Block	1605.90	1596.49	1551.70	1511.43	1362.44
Average Gross Block	1605.90	1601.20	1574.10	1531.57	1436.94



Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
Weighted average rate of Depreciation (WAROD) (in %)	2.31	2.18	2.25	0.00	0.00
Depreciable Value	1445.31	1441.08	1396.53	1360.29	1226.20
Cumulative Depreciation at the beginning	1334.09	1371.16	1398.34	1396.53	1362.93
Depreciation adjustment on account of de-capitalisation	0.00	7.78	37.21	33.60	123.59
Net Cumulative Depreciation after adjustment	1334.09	1363.38	1361.13	1362.93	1239.34
Remaining Depreciable Value	111.22	69.91	35.40	-	-
Balance useful life of the Asset (Year)	3.00	2.00	1.00	-	-
Elapsed life (Year)	22.00	23.00	24.00	-	-
Depreciation	37.07	34.96	35.40	-	-

(₹ in lakh)

New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	0.00	0.00	135.30	335.13	480.72
ACE	0.00	135.30	199.83	145.59	16.52
Closing Gross Block	0.00	135.30	335.13	480.72	497.24
Average Gross Block	0.00	67.65	235.22	407.93	488.98
Weighted average rate of Depreciation (WAROD) (in %)	-	5.28	5.28	5.28	5.28
Depreciable Value	0.00	60.89	211.69	367.13	440.08
Cumulative Depreciation at the beginning of the year	0.00	0.00	3.57	12.42	21.54
Depreciation	0.00	3.57	12.42	21.54	25.82
Cumulative Depreciation at the end of the year	0.00	3.57	12.42	33.96	59.78
Remaining Depreciation recoverable at the end of the year	0.00	57.31	195.70	333.17	380.31

Interest on Loan

77. 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.”

78. Gross normative loan has already been repaid prior to 1.4.2019 and therefore, IoL has been considered on ACE (new additions). WAROI on loan has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during the 2019-24 tariff period may be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of truing up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed for Combined Asset is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	911.81	911.81	1001.18	1115.63	1194.68
Cumulative Repayments up to Previous Year	911.81	911.81	910.04	897.03	895.70
Net Loan-Opening	0.00	0.00	91.14	218.60	298.97
Additions	0.00	94.71	139.88	101.91	11.56
Adjustment of Gross Loan pertaining to de-capitalised asset	0.00	5.34	25.43	22.86	84.59
Repayment during the year	0.00	3.57	12.42	21.54	25.82
Adjustment of Cumulative repayment pertaining to de-capitalised asset	0.00	5.34	25.43	22.86	84.59
Net Loan-Closing	0.00	91.14	218.60	298.97	284.72



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Average Loan	0.00	45.57	154.87	258.79	291.85
Weighted Average Rate of Interest on Loan (in %)	8.68	8.68	8.68	8.68	8.68
Interest on Loan	0.00	3.96	13.44	22.46	25.33

Return on Equity

79. 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 trueing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis.”

80. The Petitioner has submitted that it is liable to pay Income Tax at MAT rate prescribed under the Taxation laws (Amendment) Ordinance 2019. Further, RoE has



been calculated @18.782% after grossing up the RoE with MAT rate of 17.472% (Base Rate 15% + Surcharge 12% + Cess 4%) based on the formula given in Regulation 31(2) of the 2019 Tariff Regulations for the 2019-24 tariff period. As per Regulation 31(3) of the 2019 Tariff Regulations, the grossed-up rate of RoE at the end of every financial year shall be trued up based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the IT authorities pertaining to the 2019-24 tariff period on actual gross income. However, any penalty arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the Petitioner. Any under-recovery or over-recovery of grossed up rate on RoE after truing up shall be recovered or refunded to beneficiaries or the long term customers on yearly basis. The Petitioner has further submitted that any adjustment due to additional tax demand including interest duly adjusted for any refund of tax including interest received from IT authorities shall be recoverable/ adjustable during the 2019-24 tariff period on yearly basis on receipt of Income Tax assessment order.

81. We have considered the submissions of the Petitioner. As observed above, equity from 2022-23 onwards has been restricted to 30% as per proviso to Regulation 18(3) of the 2019 Tariff Regulations. Accordingly, MAT rate applicable in 2019-20 has been considered for the purpose of RoE, which shall be trued-up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed for Combined Asset for the 2019-24 tariff period is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	694.10	694.10	730.62	566.05*	597.65
Additions	0.00	40.59	59.95	43.68	4.96
De-capitalisation	0.00	4.07	19.36	12.08	44.70
Closing Equity	694.10	730.62	771.21	597.65	557.90



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Average Equity	694.10	712.36	750.92	581.85	577.77
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
Return on Equity	130.37	133.80	141.04	109.28	108.51

*Equity in excess of 30% removed

Operation & Maintenance Expenses

82. The O&M Expenses claimed by the Petitioner for the various elements included in Combined Asset for the 2019-24 tariff period are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
2 Numbers 400 kV sub-station bays	64.30	66.56	68.90	71.32	73.82
400 kV sub-station ICT	112.77	116.87	120.96	125.37	129.47
Total	177.07	183.43	189.86	196.69	203.29

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

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more 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



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

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

Provided further that:

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

ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;

iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);



iv. the O&M expenses of ± 800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ± 800 kV, Bishwanath-Agra HVDC bi-pole scheme;

v. the O&M expenses of ± 800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ± 800 kV, Bishwanath-Agra HVDC bi-pole scheme; and

vi. the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three year

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

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

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

84. The O&M Expenses allowed in respect of various elements included in Combined Asset for the 2019-24 tariff period are as follows:

	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
2 Number of 400 kV sub-station bays					
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
Total	64.30	66.56	68.90	71.32	73.82
400 kV ICT (315 MVA ICT at Hyderabad)					
Norms (₹ lakh/MVA)	0.358	0.371	0.384	0.398	0.411
Total	112.77	116.87	120.96	125.37	129.47
Total O&M Expenses allowed (₹ in lakh)	177.07	183.43	189.86	196.69	203.29

Interest on Working Capital

85. Regulations 34(1)(c), 34(3), 34(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 fixed cost;*
- ii. Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*
- iii. Operation and maintenance expenses, including security expenses for one month”*

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

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

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

“3.Definitions ...

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

86. The Petitioner has submitted that it has computed IWC for the 2019-24 tariff 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%.

87. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and from 2021-22 onwards as 10.50% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.50% plus 350 basis points). The components of the working capital and interest allowed thereon are as follows:



(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for 1 month)	14.76	15.29	15.82	16.39	16.94
Working Capital for Maintenance Spares (15% of O&M Expenses)	26.56	27.51	28.48	29.50	30.49
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	43.62	45.57	49.56	44.31	45.83
Total Working Capital	84.93	88.37	93.86	90.21	93.26
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	10.23	9.94	9.86	9.47	9.79

Annual Fixed Charges of the 2019-24 Tariff Period

88. The transmission charges in respect of Combined Asset allowed for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	37.07	38.53	47.82	21.54	25.82
Interest on Loan	0.00	3.96	13.44	22.46	25.33
Return on Equity	130.37	133.80	141.04	109.28	108.51
O&M Expenses	177.07	183.43	189.86	9.47	9.79
Interest on Working Capital	10.23	9.94	9.86	196.69	203.29
Total	354.74	369.65	402.01	359.44	372.74

Filing Fee and Publication Expenses

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

Licence Fee & RLDC Fees and Charges

90. 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 Regulation 70 (3) of the 2019 Tariff Regulations for the 2019-24 tariff period.



Goods and Services Tax

91. 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

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

Security Expenses

93. 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.

94. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on projected basis for the 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 31.3.2023. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Accordingly, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.



Capital Spares

95. 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

96. TANGEDCO vide affidavit dated 25.8.2021 has submitted that after coming into force of the 2020 Sharing Regulations, it has become inevitable to segregate the capital cost as well as Yearly Transmission Charges of the transmission assets into 2010 Sharing Regulations regime and 2020 Sharing Regulations regime. TANGEDCO has also submitted that vide order in Petition No.102 of 2016, the Commission had directed to split the capital cost under two heads viz. pre-PoC and post-PoC i.e. up to 30.6.2011 and beyond 30.6.2011 respectively. Further, the components of the tariff had also been reworked based on the splitting of the capital cost based on pre-PoC and post-PoC regime.

97. TANGEDCO has submitted that splitting of the Yearly Transmission Charges (YTC) up to 31.12.2020 and from 1.1.2021 onwards will give correct allocation of the transmission charges as per the 2010 Sharing Regulations and the 2020 Sharing Regulations as provided in Regulation 43 of the 2014 Tariff Regulations and Regulation 57 of the 2019 Tariff Regulations respectively.

98. In response, the Petitioner vide affidavit dated 7.9.2021 has submitted that the instant petition is filed for truing up of transmission tariff of the 2014-19 tariff period and for determination of transmission tariff of the 2019-24 tariff period for Combined Asset. After the truing up and determination of transmission tariff, sharing of transmission charges for the 2014-19 period and the 2019-24 periods up to 31.10.2020 shall be done as per the 2010 Sharing Regulations and from 1.11.2020



onwards shall be shared under the 2020 Sharing Regulations. Tariff determination and Sharing of transmission charges are two independent activities and they are not interlinked. After the determination of tariff of the assets by the Commission, the aspects of YTC bifurcation raised by TANGEDCO shall be taken care of by the Petitioner at the time of billing.

99. We have considered the submissions of the Petitioner and TANGEDCO. During 2001-04, 2004-09 and 2009-14 tariff (up to 30.6.2011), the transmission charges for inter-State transmission systems were being shared in accordance with the Tariff Regulations for the respective tariff periods. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems was governed by the 2010 Sharing Regulations and with effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and Sharing Regulations and shall be recovered from the concerned DICs through Bills under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection and disbursement of the 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.

100. We agree with the submissions of the Petitioner that tariff determination and sharing of transmission charges are two independent activities and they are not interlinked. The tariff of the transmission assets is determined in accordance with the provisions of the relevant Tariff Regulations and after the determination of tariff of the assets by the Commission, the sharing of the YTC amongst DICs are worked out in



terms of provisions of the relevant Sharing Regulations and bills are raised accordingly. Therefore, the issue raised by TANGEDCO for splitting the capital cost of the transmission assets and the tariff components on the basis of the 2010 Sharing Regulations regime and the 2020 Sharing Regulations regime is not relevant.

101. To summarise:

- a) The revised AFC approved for the transmission assets for the 2001-04 and 2004-09 tariff periods as per the APTEL's judgements are as follows:

								(₹ in lakh)
Asset	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Asset-I	116.40	116.65	116.96	123.12	123.59	124.23	124.91	125.66
Asset-II	118.32	118.11	117.90	121.55	21.35	121.09	120.78	120.39

- b) The consequential revision of AFC approved in respect of Combined Asset for the 2009-14 tariff period are as follows:

					(₹ in lakh)
2009-10	2010-11	2012-13	2013-14	2014-15	
307.81	316.35	319.98	323.35	328.40	

- c) The trued-up AFC approved in respect of Combined Asset for the 2014-19 tariff period are as follows:

					(₹ in lakh)
2014-15	2015-16	2016-17	2017-18	2018-19	
311.85	313.45	314.94	318.21	323.23	

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

					(₹ in lakh)
2019-20	2020-21	2021-22	2022-23	2023-24	
354.74	369.65	402.01	359.44	372.74	

102. This order disposes of Petition No. 251/TT/2020 in terms of the above discussions and findings.

sd/-
(P. K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson

