CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 154/TT/2020

Coram:

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

Date of order: 11.07.2022

In the matter of:

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and revision of transmission tariff for 2001-04, 2004-09 and 2009-14 tariff periods and truing up of transmission tariff of 2014-19 period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for Transmission System associated with 400 kV Central Transmission Project-I in the Southern Region.

And in the matter of:

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

Vs

1. Karnataka Power Transmission Corporation Limited (KPTCL),
   Kaveri Bhavan,
   Bangalore-560009.

2. Transmission Corporation of Andhra Pradesh Limited (APTRANSCO),
   Vidyut Soudha, Hyderabad-500082.

3. Kerala State Electricity Board (KSEB),
   Vaidyuthi Bhavanam,
   Pattom, Thiruvananthapuram-695004.

4. Tamil Nadu Generation and Distribution Corporation Limited
   (Formerly Tamilnadu 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 (APEPDCL),
APEPDCL, P&T Colony,
Seethmmadhara, Vishakhapatnam,
Andhra Pradesh.

7. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL),
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta,
Tirupati-517501,
Chittoor District, Andhra Pradesh.

8. Southern Power Distribution Company of Telangana Limited (TSSPDCL),
Corporate Office, Mint Compound,
Hyderabad-500063,
Telangana.

9. Northern Power Distribution Company of Telangana Limited (TSNPDCL),
Opp. NIT Petrol Pump,
Chaitanyapuri, Kazipet,
Warangal-506004,
Telangana.

10. Bangalore Electricity Supply Company Limited (BESCOM),
Corporate Office,
K.R.Circle,
Bangalore-560001,
Karanataka.

11. Gulbarga Electricity Supply Company Limited (GESCOM),
Station Main Road, Gulburga,
Karnataka.

12. Hubli Electricity Supply Company Limited (HESCOM),
Navanagar, PB Road,
Hubli, Karnataka.

13. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore-575001,
Karnataka.

14. Chamundeswari Electricity Supply Corporation Limited (CESC),
927, L J Avenue,

Ground Floor, New Kantharaj Urs Road,
Saraswatipuram, Mysore-570 009,
Karnataka.

15. Electricity Department,
Government of Goa,
Vidyuti Bhawan, Panaji,
Goa-403001.

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

17. Tamil Nadu Transmission Corporation,
NPKRR Maaligai, 800, Anna Salai,
Chennai-600 002. **...Respondent(s)**

For Petitioner: Shri S.S. Raju, PGCIL
Shri D.K Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Ms. Anshul Garg, PGCIL

For Respondents: Shri B. Vinodh Kanna, Advocate, TANGEDCO
Ms. R. Ramalakshmi, TANGEDCO
Shri R. Srinivasan, TANGEDCO

ORDER

The instant petition has been filed by Power Grid Corporation of India Limited, a deemed transmission licensee, for revision of transmission tariff of 2001-04, 2004-09 and 2009-14 tariff periods and truing up of transmission tariff of 2014-19 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 tariff under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations") for 2019-24 period in respect for Transmission System associated with 400 kV Central Transmission Project-I (hereinafter referred to as "the transmission asset") in Southern Region.

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 10 and 11 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 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"

Backdrop of the case

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

a. The Ministry of Power, Government of India vide letter No.18/10/82-Trans. dated 7.1.1984 approved the cost of the transmission asset as ₹35485 lakh which was revised vide letter No.18/4/85-Trans.(Vol.IV) dated 21.8.1987 to ₹38805 lakh. The cost estimates were further revised to ₹51650 lakh by the Ministry of Power vide Memo No.3/4/91-powergrid (Vol.II) dated 16.6.1993. The scope of the transmission system associated with 400 kV Central Transmission Project-I in Southern Region is as follows:

Transmission lines:

(i) 400 kV S/C Ramagundam-Khammam Transmission line
(ii) 400 kV S/C Khammam-Vijayawada Transmission line
(iii) 400 kV S/C Vijayawada-Gajuwaka(Vishakapatnam) Transmission line
(iv) 400 kV S/C Nagarunasagar-Gooty Transmission line
(v) 400 kV S/C Gooty-Bangaore Transmission line

Sub-stations:

(i) 400 kV Khammam Sub-station
(ii) 400 kV Vijayawada Sub-station
(iii) 400 kV Gooty Sub-station
(iv) 400 kV Somanhalli Sub-station
(v) 400 kV Gazuwaka Sub-station
(vi) 400 kV Nagarjunasagar Sub-station
(vii) 400 kV Hyderabad Sub-station

b. The transmission asset was put under commercial operation w.e.f. 1.4.1992.

c. The tariff for period from 1.4.2001 to 31.3.2004 was allowed *vide* order dated 30.6.2003 in Petition No. 7/2002 and was revised *vide* order dated 8.2.2008 in Petition No. 7/2002 as per Appellate Tribunal for Electricity (APTEL) judgment

dated 4.10.2006 in Appeal No. 135 of 2005. The tariff for the period from 1.4.2004 to 31.3.2009 was allowed *vide* order dated 14.12.2005 in Petition No. 135/2004 and was revised *vide* order dated 17.3.2008 in Petition No. 135/2004 as per the APTEL judgment dated 4.10.2006 in Appeal No. 135 of 2005.

d. The tariff for 2009-14 period was allowed *vide* order dated 4.7.2011 in Petition No. 91/2009. The tariff for 2009-14 period was trued up and tariff for 2014-19 period was determined *vide* order dated 17.12.2015 in Petition No. 9/TT/2015.

e. The Petitioner has sought revision of transmission tariff approved for the 2001-04 tariff period on account of change in Interest on Loan (IOL) and Interest on Working Capital (IWC) to the extent of revision in IOL and in Maintenance Spares in terms of the APTEL judgment dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases. The Petitioner has sought consequential revision of tariff allowed for 2009-14 tariff period and truing up of tariff of 2014-19 tariff period and determination of tariff for 2019-24 period for transmission system in Southern Region.

f. The APTEL in judgement dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters pertaining to generating stations of NTPC had considered 4 (four) issues. The issues considered by APTEL and its decisions are as follows:

Sr. No.	Issue	APTEL's decision/direction
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 interest on loan.	In view of the order of the APTEL dated 14.11.2016 in Appeal No. 94 of 2005 and Appeal No. 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.	The Commission's view upheld
3(b)	O&M Expenses: Non-inclusion of incentives and ex-gratia payment to employees.	The Commission's view upheld
4	Cost of spares for calculation of working capital	The Commission's view upheld

g. The APTEL in its judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters pertaining to generating stations of NTPC had considered 9 (nine) issues. The issues considered and the decisions of APTEL are given as follows:

Sr. No.	Issue	APTEL's decision/direction
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-capitalization of the assets on cumulative repayment of loan.	The cumulative repayment of the loan proportionate to the assets decapitalized 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	Foreign Exchange rate variation (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 Appeals No.135 to 140 of 2005. The Commission to act accordingly.
IX	Computation of interest on loan 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.

h. 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 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.

i. Based on APTEL's judgments dated 22.1.2007 in Appeal No. 81 of 2005 and dated 13.6.2007 in Appeal No. 139 of 2007 and the Commission's order dated 18.1.2019 in Petition No. 121/2007, the Petitioner had sought re-determination of transmission tariff of its transmission assets of 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 the Civil Appeals by the Hon'ble Supreme Court.

j. The Hon'ble Supreme Court vide order dated 10.4.2018, dismissed the said Civil Appeals. Thus, the said judgments of APTEL have attained finality.

k. Consequent to the Hon'ble Supreme Court's order dated 10.4.2018, Petition No. 121/2007 was listed for hearing before the Commission 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 petitions for 2014-19 tariff period in respect of concerned transmission assets.

l. Accordingly, the Petitioner has sought revision of transmission tariff approved for 2001-04 tariff period on account of change in IoL and IWC to the extent of revision in IoL and in Maintenance Spares in terms of the APTEL's judgements dated 22.1.2007 and 13.6.2007.

m. The instant petition was last heard on 11.2.2022 and in view of APTEL's judgment dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters along with judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases and the order of Hon'ble Supreme Court dated 10.4.2018, transmission tariff is being revised. Although, period-wise transmission tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods, suitable assumptions at certain places, if required, are being applied which are indicated.

n. The capital cost of ₹28065.86 lakh for the transmission asset as on 1.4.2001 has been approved by the Commission *vide* its order dated 8.2.2008 in Petition No. 07/2002. The tariff from 1.4.2001 was worked out based on the admitted capital cost as stated above. Accordingly, tariff is being revised for 2001-04 tariff period in terms of the APTEL's judgements dated 22.1.2007 and 13.6.2007.

4. The Respondents are distribution licensees, transmission licensees and power departments which are procuring transmission service from the Petitioner, mainly beneficiaries of the 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 newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments/objections have been received from the general public in response to the aforesaid notice published in the newspapers by the Petitioner. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), Respondent No.4, has filed its reply *vide* affidavit dated 5.6.2021. TANGEDCO has raised issues of claim of the Petitioner with retrospective effect for 2001-04, 2004-09 and 2009-14 tariff periods, Additional Capital Expenditure (ACE), sharing of transmission charges and GST. The Petitioner *vide* affidavit dated 28.6.2021 has filed rejoinder to the reply of TANGEDCO. The issues raised by TANGEDCO and the clarifications given by the Petitioner are considered in the relevant portions of this order.

Interest on Loan (IoL)

6. The APTEL while dealing with the issue of computation of IoL, *vide* judgement dated 22.1.2007 in Appeal No.81 of 2005 and batch matters 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 No. 94 of 2005 and Appeal No. 96 of 2005. The APTEL *vide* its judgement dated 14.11.2006 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005 set aside the Commission's methodology of computation of loan on 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 the IoL liability for the period from 1.4.1998 to 31.3.2001. In view of the judgement of APTEL, interest allowed for 2001-04 and 2004-09 tariff periods is revised on the basis of normative debt repayment methodology.

Additional Capital Expenditure (ACE)

7. APTEL in its judgement dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters held that ACE after commercial operation date (COD) should also be considered for computation of maintenance spares. In view of above judgement of APTEL, maintenance spares to be considered for computation of working capital for 2001-04 and 2004-09 tariff periods are also required to be revised taking into consideration ACE after COD.

Depreciation

8. As regards depreciation, APTEL in its judgement dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters 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. Accordingly, the outstanding loan allowed for the transmission asset for 2001-04 and 2004-09 tariff periods is revised in the instant order.

9. In view of the above directions of APTEL, outstanding loan allowed for the transmission asset for 2001-04 and 2004-09 period is revised in the instant order.

10. The revision of transmission tariff allowed for 2001-04 and 2004-09 tariff periods necessitate the revision of transmission tariff allowed for 2009-14 tariff period which is also being done in the present order. The implementation of the directions of APTEL in judgments dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases was kept pending in the 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 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.

11. This order is issued considering the submissions made by the Petitioner in its affidavits dated 14.1.2020, 7.10.2020, 7.10.2021 and 2.2.2022, reply filed by TANGEDCO vide affidavit dated 5.6.2021 and the Petitioner's rejoinder vide affidavit dated 28.6.2021.

12. Hearing in this matter was held on 11.2.2022 through video conference and order was reserved. Having heard the representatives of the Petitioner, Respondent and after perusal of the materials on record, we proceed to dispose of the petition.

13. TANGEDCO has raised the issue of retrospective revision of tariff in this petition and similar other petitions in the past. The contentions of TANGEDCO have already been rejected by the Commission in other petitions including in Petition No. 141/TT/2020. As TANGEDCO has not challenged the findings, the same have attained finality. Therefore, the contention of TANGEDCO regarding retrospective revision of tariff is rejected. The issues which are specific to the instant petition and not dealt by the Commission earlier are considered in the relevant paragraphs of this order.

REVISION OF TRANSMISSION CHARGES FOR 2001-04, 2004-09 and 2009-14 TARIFF PERIODS

2001-04 Period

14. The Commission vide order dated 8.2.2008 Petition No. 7/2002 approved the following transmission charges for the transmission asset for 2001-04 period:

(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Depreciation	781.81	781.81	459.37
Interest on Loan	66.87	16.47	0.00
Return on Equity	1544.48	1544.48	1544.48
Advance against Depreciation	158.52	158.52	0.00
O&M Expenses	936.16	992.33	1051.87
Interest on Working Capital	116.57	119.59	114.11
Total	**3604.40**	**3613.19**	**3169.83**

15. The Petitioner has claimed the following revised transmission charges for the transmission asset for 2001-04 period in the instant petition:

(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Depreciation	781.81	781.81	459.37
Interest on Loan	54.29	0.00	0.00
Return on Equity	1544.48	1544.48	1544.48
Advance against Depreciation	158.51	158.51	0.00
O&M Expenses	936.16	992.33	1051.87
Interest on Working Capital	116.33	119.27	114.11
Total	**3591.58**	**3596.40**	**3169.83**

16. We have considered the Petitioner's claim. The tariff is revised for the transmission asset for 2001-04 period on the basis of following:

a) The admitted capital cost of ₹28065.86 lakh for the transmission asset as on 1.4.2001 approved *vide* order dated 8.2.2008 in Petition No. 7/2002.

b) Weighted Average Rate of Interest (WAROI) on actual loan, Weighted Average Rate of Depreciation (WAROD), Rate of Interest for Working Capital

(IWC) and O&M Expenses have been adopted from order dated 8.2.2008 in Petition No. 7/2002.

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

(₹ in lakh)

Particulars	**2001-02**	**2002-03**	**2003-04**
Depreciation	781.81	781.81	459.37
Interest on Loan	66.87	16.47	0.00
Return on Equity	1544.48	1544.48	1544.48
Advance against Depreciation	158.51	158.51	0.00
Interest on Working Capital	116.57	119.59	114.11
O&M Expenses	936.16	992.33	1051.87
Total	**3604.40**	**3613.19**	**3169.83**

18. The Annual Fixed Charges (AFC) allowed for the transmission asset for 2001-04 period *vide* orders dated 30.6.2003 and 8.2.2008 in the Petition No. 7/2002, the revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

(₹ in lakh)

Particulars	**2001-02**	**2002-03**	**2003-04**
AFC approved vide order dated 30.6.2003 and 8.2.2008 in the Petition No. 7/2002	3604.40	3613.19	3169.83
AFC claimed by the Petitioner in the instant petition	3591.58	3596.40	3169.83
Allowed in this order	3604.40	3613.19	3169.83

2004-09 Period

19. The Commission *vide* order dated 14.12.2005 in Petition No. 135/2004 determined and subsequently revised the tariff for period from 1.4.2004 to 31.3.2009 *vide* order dated 17.3.2008 in Petition No. 135/2004 as per APTEL judgment dated 4.10.2006 in Appeal No. 135 of 2005 for 2004-09 tariff period. The revised tariff allowed vide order dated 17.3.2008 is as follows:

(₹ in lakh)

Particulars	**2004-05**	**2005-06**	**2006-07**	**2007–08**	**2008-09**
Depreciation	448.07	448.07	448.07	448.07	448.07
Interest on Loan	0.00	0.00	0.00	0.00	0.00

Particulars	2004-05	2005-06	2006-07	2007–08	2008-09
Return on Equity	1850.45	1850.45	1850.45	1850.45	1850.45
O & M Expenses	813.56	846.10	880.63	914.70	952.36
Interest on Working Capital	115.67	119.79	124.16	128.72	133.60
Total	**3227.76**	**3264.41**	**3303.31**	**3341.95**	**3384.48**

20. The Petitioner has submitted that entire loan has been repaid during 2003-04 period.

21. We have considered the Petitioner's claim. Since the entire loan has been repaid during 2003-04 period, there is no impact of repayment on IoL and, hence, there is no change in the tariff during 2004-09 period.

2009-14 Period

22. The Commission vide order dated 4.7.2011 in Petition No. 91/2009 approved the tariff for transmission asset for 2009-14 period and in order dated 17.12.2015 in Petition No. 9/TT/2015 trued up the tariff allowed for 2009-14 period in respect of the transmission asset and the same is as follows:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012–13	2013-14
Depreciation	450.74	450.74	450.74	464.89	484.82
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2468.24	2558.64	2561.15	2573.04	2619.61
O & M Expenses	1436.05	1517.65	1604.95	1696.89	1793.68
Interest on Working Capital	132.67	138.64	143.06	148.20	154.43
Total	**4487.69**	**4665.67**	**4759.90**	**4883.02**	**5052.54**

23. The Petitioner has submitted that entire loan has been repaid during 2003-04 period.

24. We have considered the Petitioner's claim. Since the entire loan has been repaid during 2003-04 period, there is no impact of repayment on IoL and, hence, there is no change in the tariff during 2009-14 period.

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

25. The Petitioner has revised its submission vide affidavit dated 7.10.2021 on account of de-capitalization of the replaced 3X167 MVA ICT at Somanahalli Sub-station and one number of 63 MVAR Line Reactor at Vizag Sub-station of 400 kV Vizag-Vijayawada which is covered in the instant transmission system. The details of the trued-up transmission charges claimed by the Petitioner in respect of the transmission asset for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	491.72	497.62	511.70	498.01	555.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2624.70	2641.29	2628.71	2615.42	2640.17
O&M Expenses	1642.74	1697.97	1754.51	1812.40	1872.66
Interest on Working Capital	162.48	166.05	169.21	171.79	176.80
Total	**4921.64**	**5002.93**	**5064.13**	**5097.62**	**5244.80**

26. The details of IWC claimed by the Petitioner *vide* affidavit dated 7.10.2021 in respect of the transmission asset are as follows:

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
O & M Expenses	136.90	141.50	146.21	151.03	156.06
Maintenance Spares	246.41	254.70	263.18	271.86	280.90
Receivables	820.28	833.82	844.02	849.60	872.69
Total Working Capital	1203.59	1230.02	1253.41	1272.49	1309.65
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	**162.48**	**166.05**	**169.21**	**171.79**	**176.80**

Capital Cost

27. The capital cost of the existing project has been calculated in accordance with Regulation 9(3) and Regulation 9(6) of 2014 Tariff Regulations. The Commission *vide* order dated 17.12.2015 in Petition No. 9/TT/2015 allowed capital cost as on 1.4.2014 of ₹28814.48 lakh and capital cost as on 1.4.2019 of ₹30277.49 lakh including net ACE of ₹1463.01 lakh for determination of tariff for 2014-19 period for transmission asset covered under instant petition and the same are summarised as follows:

(₹ in lakh)

Admitted Capital Cost as on 31.3.2014	Admitted Net ACE during 2014-19					Admitted Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
28814.48	0.00	154.03	431.12	473.36	404.50*	30277.49

**Net of De-capitalization of ₹64 lakh*

28. The Petitioner in the instant true-up petition has claimed the following capital cost in respect of the transmission asset for 2014-19 tariff period:

(₹ in lakh)

Admitted Capital Cost as on 1.4.2014		Net ACE						Total Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17		2017-18	2018-19		
	ACE	ACE	ACE	De-Capitalization	ACE	ACE	De-Capitalization	
28814.48	45.85	85.19	3.42	(308.59)	61.27	648.12	(64.33)	29285.41

29. The Petitioner has claimed the same capital cost as on 1.4.2014 of ₹28814.48 lakh which was admitted by the Commission *vide* order dated 17.12.2015 in Petition No. 9/TT/2015. Accordingly, admitted capital cost as on 1.4.2014 of ₹28814.48 lakh in respect of the transmission asset has been considered for truing up of tariff for 2014-19 tariff period.

Additional Capital Expenditure (ACE)

30. The Commission approved net ACE of ₹1463.01 lakh for transmission asset covered in the instant petition for 2014-19 period towards replacement of sub-station equipment under 400 kV Central Transmission Project-I(CTP-I) in Southern Region *vide* order dated 17.12.2015 in Petition No 9/TT/2015. Against this, the Petitioner has claimed actual ACE of ₹45.85 lakh, ₹85.19 lakh, ₹3.42 lakh, ₹61.27 lakh and ₹648.12 lakh for 2014-15, 2015-16, 2016-17, 2017-18 and 2018-19 respectively, de-capitalization of ₹308.59 lakh during 2016-17 towards replaced 3x167 MVA ICTs at Somanahalli Sub-station and ₹64.33 lakh during 2018-19 towards replacement of problematic/ defective equipment that are completing 25 years of service during 2014-

19 period and for efficient and secure operation of the transmission system under Regulation 14(3)(vii) and Regulation 14(3)(ix) of the 2014 Tariff Regulations.

31. The Petitioner vide affidavit dated 7.10.2021 has submitted that the Commission vide order dated 6.2.2021 in Petition No. 505/TT/2020 considered the APTEL judgement dated 25.4.2016 in Appeal No. 98 of 2015 regarding allowing tariff for the assets which have completed their useful life and are not in use. In Petition No. 505/TT/2020, 3X167 MVA ICT at Somanahalli has been replaced by 1X500 MVA ICT at Somanahalli. Accordingly, the replaced 3X167 MVA ICT at Somanahalli Sub-station covered in the instant petition is now decapitalized from actual date of removal i.e. 1.3.2017.

32. We have considered the submissions of the Petitioner. The actual ACE of ₹843.85 lakh towards replacement of problematic and defective equipment at various sub-stations is allowed under Regulation 14(3)(vii) and Regulation 14(3)(ix) of the 2014 Tariff Regulations.

33. The Petitioner has submitted that 3x167 MVA ICTs at Somanahalli Sub-station have completed their useful life of 25 years and the Petitioner has replaced 3x167 MVA ICTs at Somanahalli with 500 MVA ICT and replaced ICTs are decapitlaised on 1.3.2017. We have further considered that 3X167 MVA ICTs at Somanahalli Sub-station covered in the instant petition have completed their useful life and are de-capitalized form the original date of removal i.e. 1.3.2017.

34. The Petitioner has further decapitalized an amount of ₹64.33 lakh towards replacement of various sub-station equipment.

35. Accordingly, net ACE allowed for the transmission asset from 1.4.2014 to 31.3.2019 is as follows:

(₹ in lakh)

Admitted Capital Cost as on 1.4.2014	Net ACE							Total Capital Cost as on 31.3.2019
	2014-15	2015-16	1.4.2016 - 1.3.2017	2.3.2017 - 31.3.2017	2017-18	2018-19		
	ACE	ACE	ACE	De-Capitalization	ACE	ACE	De-Capitalization	
28814.48	45.85	85.19	3.42	(308.59)	61.27	648.12	(64.33)	29285.41

Debt-Equity ratio

36. 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, debt-equity ratio considered earlier for the purpose of determination of tariff of 2014-19 tariff period has been considered for the purpose of truing up of tariff of the transmission asset for 2014-19 tariff period. The debt-equity ratio of 70:30 has been considered for ACE allowed during 2014-19 tariff period in accordance with Regulation 19(5) of the 2014 Tariff Regulations. The details of the debt-equity ratio as on 1.4.2014 and 31.3.2019 in respect of the transmission asset are as follows:

Debt-Equity for Capital Cost as on 1.4.2014

Particulars	Capital Cost as on 1.4.2014 (₹ in lakh) (A)	(in %)
Debt	15437.52	53.58
Equity	13376.96	46.42
Total	**28814.48**	**100.00**

Debt-Equity for ACE and De-capitalization during 2014-19

Particulars	ACE (B)		ACE (C)		ACE (D)		De-capitalization* (E)	
	2014-15 (₹ in lakh)	(in %)	2015-16 (₹ in lakh)	(in %)	2016-17 (₹ in lakh)	(in %)	2016-17 (₹ in lakh)	(in %)
Debt	32.10	70.00	59.63	70.00	2.39	70.00	(154.30)	50.00
Equity	13.76	30.00	25.56	30.00	1.03	30.00	(154.30)	50.00
Total	**45.85**	**100.00**	**85.19**	**100.00**	**3.42**	**100.00**	**(308.59)**	**100.00**

Particulars	ACE (F)		ACE (G)		De-capitalization (H)	
	2017-18 (₹ in lakh)	(in %)	2018-19 (₹ in lakh)	(in %)	2018-19 (₹ in lakh)	(in %)
Debt	42.89	70.00	453.68	70.00	(32.17)	50.00
Equity	18.38	30.00	194.44	30.00	(32.17)	50.00
Total	**61.27**	**100.00**	**648.12**	**100.00**	**(64.33)**	**100.00**

**3X167 MVA ICT at Somanahalli Sub-station is now decapitalized from actual date of removal i.e. 1.3.2017*

(₹ in lakh)

Particulars	Capital cost as on 31.3.2019 (I)=(A)+(B)+(C)+(D)-(E)+(F)+(G)-(H)	(in %)
Debt	15841.76	54.09
Equity	13443.66	45.91
Total	**29285.41**	**100.00**

Depreciation

37. Depreciation has been worked out as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. The transmission asset has already completed 12 years of life before 1.4.2014. The gross block during the tariff period 2014-19 has been depreciated at Weighted Average Rate of Depreciation (WAROD) (as placed in Annexure-I). Accordingly, depreciation has been calculated based on the remaining depreciable value to be recovered over the balance useful life. The trued-up depreciation for 2014-19 tariff period in respect of the transmission asset is as follows:

(₹ in lakh)

Particular	2014-15	2015-16	1.4.2016 - 1.3.2017	2.3.2017 - 31.3.2017	2017-18	2018-19
Depreciation						
Opening Gross Block	28814.48	28860.33	28945.52	28636.93	28640.35	28701.62
Additional Capitalisation	45.85	85.19	3.42	3.42	61.27	648.12

Less: Decapitalization	0.00	0.00	0.00	0.00	0.00	64.33
Closing Gross Block	28860.33	28945.52	28948.94	28640.35	28701.62	29285.41
Average Gross Block	28837.41	28902.93	28947.23	28638.64	28670.99	28993.52
Freehold Land	421.20	421.20	421.20	421.20	421.20	421.20
Weighted Average Rate of Depreciation (WAROD) (in %)	1.71	1.72	1.73	1.47	1.74	1.89
Balance useful life of the asset	11	10	9	9	8	7
Elapsed life	21	22	23	23	24	25
Aggregated Depreciable Value	25574.58	25633.55	25673.43	25395.70	25424.81	25715.08
Remaining Aggregate Depreciable Value at the beginning of the year	5408.91	4976.16	4518.42	3781.28	4000.58	3790.78
Depreciation upto previous year	20165.67	20657.39	21155.01	21614.41	21424.23	21924.30
Combined Depreciation during the year	**491.72**	**497.62**	**459.41**	**35.68**	**500.07**	**541.54**
Cumulative depreciation for de-capitalization	0.00	0.00	0.00	-225.87	0.00	-49.19
Aggregate Cumulative Depreciation	20657.39	21155.01	21614.41	21424.23	21924.30	22416.65
Remaining Aggregate Depreciable Value	4917.20	4478.55	4059.01	3971.47	3500.51	3298.43

38. The details of depreciation approved *vide* order dated 17.12.2015 in Petition No. 9/TT/2015, claimed by the Petitioner in the instant petition and trued-up depreciation in respect of the transmission asset in the instant order are as follows:

(₹ in lakh)

Particulars	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Approved *vide* order dated 17.12.2015 in Petition No. 9/TT/2015	489.84	496.78	526.03	576.91	633.34
Claimed by the Petitioner in the instant petition	491.72	497.62	511.70	498.01	555.17
Allowed after true-up in this order	491.72	497.62	495.09	500.07	541.54

Interest on Loan (IoL)

39. The Petitioner has not claimed any interest on loan. Therefore, no interest on loan has been considered in this order.

Return on Equity (ROE)

40. The Petitioner has claimed RoE for the transmission asset in accordance with Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has

submitted that they are liable to pay income tax at MAT rates and has claimed following effective tax rates for 2014-19 tariff period:

Year	Claimed effective tax rate (in %)	Grossed up ROE [(Base Rate)/(1-t)] (in %)
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

41. We have considered the submissions of the Petitioner. The Commission *vide* order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate for the Petitioner based on the notified MAT rates and the same are as follows:

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

42. MAT rates considered for the purpose of grossing up of rate of RoE for truing up of tariff of 2014-19 tariff period in terms of the provisions of 2014 Tariff Regulations are as follows:

Year	Notified MAT rates (inclusive of surcharge & cess) (in %)	Base rate of RoE (in %)	Grossed up ROE [(Base Rate)/(1-t)] (in %)
2014-15	20.961	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

43. Trued-up RoE is allowed on the basis of MAT rate applicable in the respective years for the transmission asset for 2014-19 tariff period and the same is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	1.4.2016 - 1.3.2017	2.3.2017 - 31.3.2017	2017-18	2018-19
Opening Equity	13376.96	13390.72	13416.27	13261.98	13263.00	13281.38
Additions	13.76	25.56	1.03	1.03	18.38	194.44
Less: Decapitalization	0.00	0.00	0.00	0.00	0.00	(32.17)
Closing Equity	13390.72	13416.27	13417.30	13263.00	13281.38	13443.66
Average Equity	13383.84	13403.49	13416.79	13262.49	13272.19	13362.52
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.705	19.758
Return on Equity	**2624.63**	**2641.22**	**2419.29**	**221.96**	**2615.35**	**2640.10**

44. The details of RoE approved vide order dated 17.12.2015 in Petition No. 9/TT/2015, claimed 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
Approved vide order dated 17.12.2015 in Petition No. 9/TT/2015	2623.22	2627.75	2644.97	2671.57	2697.39
Claimed by the Petitioner in the instant petition	2624.70	2641.29	2628.71	2615.42	2640.17
Allowed after true-up in this order	2624.63	2641.22	2641.26	2615.35	2640.10

Operation & Maintenance Expenses (O&M Expenses)

45. O&M Expenses claimed by the Petitioner in respect of the elements of transmission asset are as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
19 Numbers of 400 kV Sub-station Bays					
O&M Expenses (₹ in lakh)	1145.70	1183.70	1223.03	1263.69	1305.49
1230.29 km Single Circuit (Double Conductor)					
O&M Expenses (₹ in lakh)	497.04	514.26	531.49	548.71	567.17
Total O&M Expenses (₹ in lakh)	**1642.74**	**1697.96**	**1754.52**	**1812.40**	**1872.66**

46. Regulation 29(4) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The norms specified in respect of the elements covered in the transmission 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
S/C (double Conductor)	₹0.404 lakh/km	₹0.418 lakh/km	₹0.432 lakh/km	₹0.446 lakh/km	₹0.461 lakh/km
400 kV Sub-station	₹60.30 lakh/bay	₹62.30 lakh/bay	₹64.37 lakh/bay	₹66.51 lakh/bay	₹68.71 lakh/bay

47. We have considered the submissions of the Petitioner. The O&M Expenses allowed in respect of the elements of transmission asset under Regulation 29(4) of the 2014 Tariff Regulations are as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
19 Number of 400 kV Sub-station Bays					
O&M Expenses (₹ in lakh)	1145.70	1183.70	1223.03	1263.69	1305.49
1230.29 km Single Circuit (Double Conductor)					
O&M Expenses (₹ in lakh)	497.04	514.26	531.49	548.71	567.17
Total O&M Expenses (₹ in lakh)	**1642.74**	**1697.96**	**1754.52**	**1812.40**	**1872.66**

48. The details of O&M Expenses approved vide order dated 17.12.2015 in Petition No. 9/TT/2015, O&M Expenses claimed by the Petitioner and trued up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 17.12.2015 in Petition No. 9/TT/2015	1642.74	1697.96	1754.52	1812.40	1872.66
Claimed by the Petitioner in the instant petition	1642.74	1697.96	1754.52	1812.40	1872.66
Allowed after true-up in this order	1642.74	1697.96	1754.52	1812.40	1872.66

Interest on Working Capital (IWC)

49. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and is allowed for transmission asset as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	1.4.2016 - 1.3.2017	2.3.2017 - 31.3.2017	2017-18	2018-19
Interest on Working Capital						
Working Capital for O&M Expenses (O&M Expenses for one month)	136.89	141.50	146.21	146.21	151.03	156.05

Working Capital for Maintenance Spares (15% of O&M Expenses)	246.41	254.69	263.18	263.18	271.86	280.90
Working Capital for Receivables (Equivalent to two months of annual fixed cost)	820.26	833.81	843.33	843.33	849.94	871.83
Total Working Capital	**1203.57**	**1230.00**	**1252.72**	**1252.72**	**1272.84**	**1308.78**
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	**162.48**	**166.05**	**154.75**	**14.36**	**171.83**	**176.69**

50. The details of IWC approved *vide* order dated 17.12.2015 in Petition No. 9/TT/2015, IWC claimed by the Petitioner and trued up in the instant order is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 17.12.2015 in Petition No. 9/TT/2015	162.41	165.72	169.91	174.90	180.12
Claimed by the Petitioner in the instant petition	162.48	166.05	169.21	171.79	176.80
Allowed after true-up in this order	162.48	166.05	169.12	171.83	176.69

Approved Annual Fixed Charges for the 2014-19 Tariff Period

51. The trued up AFC for the transmission asset for tariff period 2014-19 are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017–18	2018-19
Depreciation	491.72	497.62	495.09	500.07	541.54
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2624.63	2641.22	2641.26	2615.35	2640.10
O & M Expenses	1642.74	1697.96	1754.52	1812.40	1872.66
Interest on Working Capital	162.48	166.05	169.12	171.83	176.69
Total	**4921.57**	**5002.85**	**5059.98**	**5099.65**	**5230.98**

52. Accordingly, the Annual Transmission Charges as approved vide order dated 17.12.2015 in Petition No. 9/TT/2015, claimed by the Petitioner and approved after truing up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 17.12.2015 in Petition No. 9/TT/2015	4918.21	4988.21	5095.43	5235.78	5383.51
Claimed by the Petitioner in the instant petition	4921.64	5002.93	5064.13	5097.62	5244.80
Allowed after true-up in this order	4921.57	5002.85	5059.98	5099.65	5230.98

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

53. The Petitioner has revised its submission vide affidavit dated 7.10.2021 on account of de-capitalization of one number of 63 MVAR Line Reactor at Vizag end of 400 kV Vizag-Vijayawada which is covered in the instant transmission system. The details of the transmission charges claimed by the Petitioner in respect of transmission asset for 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	607.61	904.11	1539.67	2126.81	3038.27
Interest on Loan	0.00	33.83	82.23	78.41	29.99
Return on Equity	2526.43	2577.10	2668.71	2769.79	2818.80
O&M Expenses	1684.98	1745.01	1805.74	1869.74	1934.50
Interest on Working Capital	120.48	128.61	142.19	156.29	171.28
Total	**4939.50**	**5388.66**	**6238.54**	**7001.04**	**7992.84**

54. The details of IWC claimed by the Petitioner *vide* affidavit dated 7.10.2020 for 2019-24 period are as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	140.42	145.42	150.48	155.81	161.21
Maintenance Spares	252.75	261.75	270.86	280.46	290.18
Receivables	606.63	660.13	758.65	860.76	970.04
Total Working Capital	**999.80**	**1067.30**	**1179.99**	**1297.03**	**1421.43**
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	**120.48**	**128.61**	**142.19**	**156.29**	**171.28**

Capital Cost

55. 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 trued up by excluding liability, if any, as on 1.4.2019;
(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
(c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;

(d) *Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
(e) *Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*
(f) *Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.*

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

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

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

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

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

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

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

56. The Petitioner *vide* revised Auditor's Certificate has claimed the capital cost of ₹29594.00 lakh as on 31.3.2019 for the transmission asset. The admitted capital cost as on 31.3.2019 i.e. ₹29285.41 lakh is 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 and De-capitalization

57. The 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 additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:*
>
> *(a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
> *(b) Change in law or compliance of any existing law;*
> *(c) Deferred works relating to ash pond or ash handling system in the original scope of work;*
> *(d) Liability for works executed prior to the cut-off date;*
> *(e) Force Majeure events;*
> *(f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and*
> *(g) Raising of ash dyke as a part of ash disposal system.*
> *……"*

58. The Petitioner has projected net ACE of ₹6631.90 lakh after making adjustment of de-capitalisation during 2019-24 tariff period and has submitted the same *vide* affidavit dated 7.10.2020. The details of ACE are as follows:

(₹ in lakh)

Particulars	Amount	Claimed Under Regulation
Total Capital Cost as on 1.4.2019	**29594.00**	
ACE in 2019-20	124.64	₹58.81 lakh is claimed under Regulation 25(1)(f) of the 2019 Tariff Regulations and ₹65.83 lakh is claimed under Regulation 25(2)(d) of the 2019 Tariff Regulations
ACE in 2020-21	2541.41	₹29.08 lakh is claimed under Regulation 25(1)(f) of the 2019 Tariff Regulations, ₹567.85 lakh is claimed under Regulation 25(2)(d) of the 2019 Tariff Regulations and ₹1944.48 lakh has been proposed for replacement of some of the component/equipment in the system which have deteriorated due to ageing and may affect the stability and reliability of the Grid in case of sudden failure and are claimed under Regulation 25(2) of the 2019 Tariff Regulations.

ACE in 2021-22	2640.45	Proposed for replacement of some of the components/ equipment in the system which have deteriorated due to ageing and may affect the stability and reliability of the Grid in case of sudden failure and are claimed under Regulation 25 (2) of the 2019 Tariff Regulations
ACE in 2022-23	2304.41	
ACE in 2023-24	955.58	
De-Capitalization in 2020-21	(44.19)	
De-Capitalization in 2021-22	(296.42)	
De-Capitalization in 2022-23	(681.74)	
De-Capitalization in 2023-24	(132.48)	
De-Capitalization in 2024-25	(779.76)	
Total Capital Cost as on 31.3.2024	**36225.90**	

59. In response to the Commission's query regarding details of ACE and de-capitalization during 2019-24 tariff period, the Petitioner *vide* affidavit dated 7.10.2020 has submitted the following:

A. Replacement of 400 kV and 220 kV "ABB" and "CGL" make Pneumatically operated circuit breakers at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty & Gazuwaka (33 Numbers)

The Circuit Breakers (CB) supplied under CTP System are of pneumatically operated type. This type of Pneumatic technology has become obsolete and Original Equipment Manufacturer (OEM) has stopped production of these type of circuit breakers. The spares and service support from OEM was very poor for pneumatically operated CB and cost of spares are exorbitantly high and takes much longer time. Subsequently, OEM has stopped giving service support. Frequent maintenance problems are observed in the CB such as Pneumatic drive/Magnetic ventil failures, air leakages from various parts of the mechanisms, SF6 gas leakages, etc leading to frequent break-down, prolonged outages and unreliable operation. Such type of CBs where controlled switching devices 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. The letter of OEM for non-availability of service support has been submitted along with Technical Validation reply dated 7.10.2020. Therefore, it is proposed to replace 12 Numbers ABB make Pneumatic CBs and 21 Numbers CGL make Pneumatic CBs at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty and Gazuwaka.

B. Replacement of 400 kV and 220 kV "S&S" & "Hivelm" make HCB Isolators at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty & Gazuwaka (100 set)

The Isolators proposed to be replaced are of S&S and Hivelm make and have completed 25 years of useful life. These isolators 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 not available anymore mostly 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 during storms and high wind conditions and are getting opened in On Load condition which is dangerous to the system as well as to the operating personnel.

Due to rusting, many MOM boxes have been damaged leading to problem in components of MOM boxes and motorised operation of isolators are not possible. This leads to problem such as improper indication, control, interlock and remote operation of isolators, which is unsafe. Due to ageing, TBs inside the MOM boxes have become brittle and many times terminals come in contact with boxes and creates DC earth fault which is detrimental to the control and protection system.

Due to age and wear and tear, even local operation has become 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 the then "Hivelm") for non-availability of service support has been submitted along with Technical Validation reply dated 7.10.2020. Therefoer, it is proposed to replace 93 sets of 400 kV and 7 sets of 220 kV Isolators at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty and Gazuwaka station.

C. Replacement of 400 kV & 220 kV "BHEL" & "WSI" make dead tank type Porcelain CTs at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty & Gazuwaka station (144 Nos):

The CTs proposed for replacement under CTP project are more than 25 years old 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. As there is leakage in the current transformer, it may lead to low oil level, moisture ingress and subsequent failure in the long run. The current transformers 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. Manufacturer has also stopped manufacturing and repair works of these types of CTs. The relevant communication from OEM has been submitted along with TV reply dated 7.10.2020. Therefore, it is proposed to replace 132 numbers 400 kV and 12 numbers of 220 kV CTs at Somanahalli, Nagarjunsagar, Vijayawada, Khammam, Gooty and Gazuwaka.

D. Replacement of Hitachi/ELPRO make 390 kV & 216 kV Surge arrestors at Somanahalli (12 Numbers)

The 390 kV and 216 kV rated surge arrestors installed at Somanahalli Sub-station are Hitachi (imported from Japan) and Elpro make and are 28 years old. Due to aging, the performance of LAs has started deteriorating resulting into high number of failures and frequent preventive replacements on the basis of THRC. LA plays a vital role in protecting the equipment against lightning/ switching impulses and healthiness of LAs is vital to protection of other costly equipment from high surge voltage protection. Non-functioning of LAs may cause damage to Transformer/ Reactor. Therefore, it is proposed to replace 9 numbers of 390 kV and 3 numbers of 216 kV Surge arrestors at Somanhalli with LAs of latest specification which has high energy capability and superior performance.

E. Replacement of 400 kV CVTs at Somanahalli, Vijayawada, Khammam, Gooty & Gazuwaka (27 Numbers):

The 400 kV CVTs at Somanahalli are more than 25 years old. CVTs are used for protection and metering purpose. Due to ageing, leakage/seepage from multiple points such as EMU tank, oil level glass, secondary terminal boxes are also observed. Capacitance of the CVTs have changed due to internal failure of capacitor elements due to ageing resulting into drift in secondary voltage. CVT secondary output is used in metering and protection system. Therefore, it becomes vital for metering and protection. The variation in secondary voltage may result in inaccurate metering and wrong operation of protection relays of transmission elements. The 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, repair of the

CVTs at manufacturer works is not techno-economically viable due to change in design by the manufacturer and the repair requires change of majority part of CVT even if the problem is only in one part of equipment. Moreover, the manufacturer has also stopped manufacturing and repair works of these types of CVTs. The relevant communication from the OEM has been submitted along with Technical Validation reply dated 7.10.2020. Therefore, it is proposed to replace 18 numbers of 400 kV and 9 numbers of 220 kV CVTs at Somanahalli, Vijayawada, Khammam, Gooty and Gazuwaka.

F. Replacement of old & obsolete static /Electro mechanical type Protection relays at Somanahalli, Nagarjunsagar, Khammam, Gooty & Gazuwaka

The differential, REF/direction over-current cum earth fault, auto reclosure, master trip relays, etc used for protection of line/ ICT/ reactor are of static/ electro-mechanical type and are 25 years old. Due to ageing, the general performance of relays have 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 mal-operation and the only option is replacement. Further, these relays have following inherent drawbacks:

- Lack of self-diagnostics features
- No disturbance recording/event logging features.
- Impossible for remote monitoring /remote accessing.
- Lack of time synchronization facility.

Hence, detailed trip analysis is not possible in case of tripping. Therefore, old & obsolete static/ Electro mechanical type Protection relays are proposed to be replaced with IEC 61850 compliant numerical type relays which overcomes above mentioned disadvantages at Somanahalli, Nagarjunsagar, Vijayawada, Khammam,

Gooty and Gazuwaka.

G. Replacement of DCDB, ACDB & LT system including 33 kV CBVs, LT Transformer at Vijayawada, Khammam, Gooty & Gazuwaka stations

The station auxiliary supply system includes the auxiliary transformers and its associated bay equipment, LT switch gear such as ACDBs, DCDBs, and MLDBs, etc. The LT system provides reliable auxiliary power supply to all the switchyard equipment/relays/battery chargers/PLCC system etc., in the sub-station. Multiple oil leakages were observed in the LT transformers in these sub-stations due to ageing. Further, insulators/supports in ACDB & DCDB panels have become brittle and are breaking during tightening/maintenance. Further, due to continuous operation since last 30 years, moving parts of SFUs are also failing frequently and causing un-reliable auxiliary supply to the switch yard equipment/ relays/battery/ PLCC system, etc. As the model of these ACDBS and DCDBs are obsolete, spares of components used in the ACDBs/ DCCBs, etc are also not available in the market. These equipment have completed their useful life of 25 years. It is essential to replace these equipment for efficient and reliable operation of the system. Hence, it is proposed to replace the old Auxiliary LT Supply System and DCDBs at Vijayawada, Khammam, Gooty and Gazuwaka.

H. Replacement of old and obsolete station illumination system with energy efficient lighting system including cables at Vijayawada, Khammam, Gooty and Gazuwaka stations

Luminaires proposed for replacement have been installed more than 25 years ago which have become obsolete, require frequent maintenance, consume high energy as compared to present day energy efficient LED lights. Glass and reflector of lights fittings have become faded leading to poor illumination level during night. Also cables laid for illumination system has become brittle and are facing frequent break-

downs. Photos of fixtures and cables are submitted along with the TV reply dated 7.10.2020. Therefore, it is proposed to replace illumination system at Vijayawada, Khammam, Gooty and Gazuwaka stations.

I. Replacement of Firefighting System at Vijayawada, Khammam, Gooty and Gazuwaka stations

The pipe lines in the existing firefighting systems were laid underground and due to ageing, anti-rusting coat on the pipes has worn out causing the pipes to start rusting and causing frequent and perennial leakages in the pipelines. Identification and rectification of these leakages is a tedious and time consuming process due to which firefighting systems go out of service frequently for prolonged period causing risk on the ICT/ Reactor fire protection. Further, due to long service life, pumps, motors, deluge valves, sluice valves etc. are facing wear and tear, rusting which lead to frequent break-downs and unreliable operation of the same. The firefighting systems have completed their useful life of 25 years. Since these equipment are very old, the design has become obsolete and spares of these items are not available anymore. In view of significance of fire protection system, it is very important to keep the same operational all the times with minimum outage and maintenance requirement. Hence, it is proposed to replace the existing old and worn out fire protection system at Vijayawada, Khammam, Gooty and Gazuwaka stations with new firefighting system.

J. Replacement of conventional C&R panel to SAS based C&R panel at Vijayawada along with SCADA, SPR construction and necessary cables for SPR arrangement

- These relays are of electro-magnetic/static type and obsolete. The OEMs have themselves phased out these models of relays and there is no spares support.

- In case of any failures 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 the contact get stuck and other problem in the coils.
- These relays are not compatible with IEC 61850 resulting in difficulties in fault analysis.
- The cable, wiring and terminal blocks inside both control & protection panels and equipment MBs have become brittle leading to DC leakages and other circuit failures. TBs of suitable sizes are also not available in market for replacement and it is also not feasible to replace the TBs and wiring inside these panels.
- Due to ageing, most of the cables laid in the sub-station have been damaged, causing DC earth fault and sometimes mal-operation of system. Presently control & 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 along with power and control cables with SAS based C&R panels along with SCADA shall be the most feasible and techno-economical solution as it will require very less quantity of power and control cables and shall also comply with the latest technical requirement. In this case, the outage of the system shall also be lower.
- In view of above, it is proposed to replace line protection panel, transformer and reactor protection panels at Vijayawada Sub-station with SAS based C&R panel along with SCADA.

K. Installation of new back-up impedance relay for transformers at Gooty and Gazuwaka:

Over-current and earth fault protections are provided for ICTs as back-up protection for protecting ICTs from faults and also in case of non-operation of differential/ REF relays. With addition of ICTs in sub-stations, the fault currents of faults is divided between ICTs and due to low fault current, the back-up directional O/C and E/F relays are not clearing the faults within prescribed time due to its IDMT characteristics. To over-come this situation, back-up impedance protection is proposed to be installed for protection of ICTs at Vijayawada, Gooty and Gazuwaka.

L. Installation of new Travelling Wave fault Locator at Nagarjunsagar, Vijayawada, Khammam, Gooty and Gazuwaka

Traveling wave fault locators have been installed in many lines and it is observed that accuracy of fault location detection by TWFL is high. Hence, the implementation of TWFL in proposed lines will help in locating the faults early in case of line faults and in turn will result in quick restoration, lower outage and better reliability of system.

M. Replacement of 63 MVAR Bus Reactor at Gooty Year of Manufacturing: 1991 (29 Years old)

Condition based monitoring/maintenance of transformers/ reactors like DGA, tan delta measurement of bushings and windings, oil parameters, furan analysis, FDS, IR of core insulation, etc are being carried out by Powergrid to know the healthiness. From the test results of the said equipment, it was observed that furan content was high and ratio of CO2/CO was more than 10 which indicates degradation of solid insulation. CPRI (third party) was approached by Powergrid to analyse the test results of said equipment and to know the condition of the equipment. The test

results were analyzed by CPRI and based on that, CPRI has recommended for replacement of the said unit. The report of CPRI has been submitted along with technical validation reply dated 7.10.2020. The bus reactor plays a major role in controlling the system voltage of the station. The said reactor is about to complete 25 years of useful service life and the chances of its failure are always high due to ageing. In service, the failure of reactor will cause long outage of reactor. Non-availability of the reactor may lead to lack of reactive power support and high bus voltage during light load condition which may cause threat to the grid. Therefore, it is proposed to replace the 63 MVAR bus-reactor at Gooty.

60. The Petitioner has submitted that ACE is towards replacement of problematic/defective equipment that are going to complete 25 years and de-capitalization is on account of de-construction of old and dilapidated buildings that have completed 30 years of useful life. Further, the sub-station equipment proposed for replacement at sub-stations covered under CTP-I were executed in 1991 and 1992. Some of the equipment are going to complete the useful life during 2019-24 tariff period. The equipment are in use from the date of execution. The Petitioner has submitted that during various routine/alter tests, critical conditions have been observed and equipment are giving operational problems and are threat to the reliability and security of the grid. The designs have undergone substantial changes over the period and manufacturers have dis-continued the product models. The suppliers are unable to replenish parts required for quick restoration and repairs turned out unviable.

61. Further, buildings and other civil structures like overhead tanks etc. which have been constructed in the sub-stations have completed useful life of 30 years in accordance with Schedule–II, Company Act, 2013 Part-C (1b). The Petitioner has

stated that these buildings & civil structures have been constructed in 1987-88 and are in service for more than 30 years now and does not comply the earthquake resistant provisions of latest IS codes. The Petitioner has submitted that it is mandatory for all Government owned buildings and structures to be seismic resistant (Clause 3.2.6.1 National Disaster Management Authority). Some of these buildings and civil structures are in dilapidated and unsafe condition and need urgent re-construction to avoid any damage/threat to man or property. Thus, ACE/ de-capitalization proposed under the head building and civil structures correspond to demolition of such old buildings and construction of new buildings and civil structures. The Petitioner has submitted that test reports in respect of healthiness of buildings and civil structures shall be submitted shortly. The Petitioner has also submitted the following relevant provisions of authenticated documents which recommend for seismic retrofitting, demolishing and reconstruction.

a) Note of Appendix I, page 135 of 2019 Tariff Regulations

b) Schedule –II, Company Act, 2013 Part-C-I (b)

c) Clause 3.2.6.1 and Table 5 of National Disaster Management Guideline for Seismic retrofitting of Deficient Buildings and structures

d) Clause 13.1.4 of National Building code 2016 Volume-II Part 7

e) Clause 13.1.5.1 of National Building code 2016 Volume-II Part 7

f) Clause 7.4 of National Building Code 2016 Volume I Part 0

g) Clause 1.2.2 and 1.2.4 of National Disaster Management Guidelines for Seismic retrofitting of Deficient Buildings and structures.

h) Clause 4.5.1, 4.5.2, A 7.1 of IS 13935: 2009: Seismic Evaluation, Repair and Strengthening of Masonry buildings

62. TANGEDCO *vide* affidavit dated 5.6.2021 has submitted that the Petitioner has claimed ACE towards replacement of problematic/ defective equipment that are going to complete their useful life in the 2019-24 period and ACE on account of deconstruction of old/ dilapidated building that have completed 30 years of useful life. The revised net ACE claimed by the Petitioner is ₹6631.90 lakh after adjustment of decapitalisation during 2019-24 tariff period. As regards replacement of sub-station equipment, TANGEDCO has submitted that the Petitioner has stated that the sub-station equipment covered under the instant petition were executed during 1991 and 1992. During various routine/alter tests critical conditions are observed and the equipment are giving operational problems and are threat to the stability and reliability of the grid. In view of absence of proper support from suppliers, due to obsolescence of design, the maintenance of these equipment is not possible anymore. In this context, TANGEDCO has submitted that the Petitioner has not furnished the details of discussions held during the operation coordination committee meetings and the minutes of the meeting. TANGEDCO has submitted that it is essential to discuss and decide among LTTCs the necessity of life extension of the old assets on expiry of the useful life, since the entire cost is to be borne by the LTTCs. TANGEDCO has further submitted that the Petitioner should not be allowed to claim any ACE without discussing the issues with the beneficiaries and getting their consent.

63. TANGEDCO has submitted that with regard to ACE on account of demolition and reconstruction of the buildings that have served the useful life of 30 years, the Petitioner has stated that the buildings constructed in 1987-88 are in dilapidated and unsafe condition. However, to this effect the Petitioner has not furnished any detailed report (with photographs) along with test certificates revealing the status and life expectancy

and serviceability of the building. TANGEDCO has further submitted that the Petitioner has failed to discuss these issues in the RPC forums among the beneficiaries/ LTTCs and get their consent duly considering the useful life of the whole project. It is also evident from the statement of the Petitioner that the Petitioner has failed to maintain the buildings even though they are claiming huge O&M charges.

64. TANGEDCO has further submitted that just because the project elements/ assets have served their useful life, the Petitioner shall not be allowed to replace everything when the assets are in serviceable condition and spend the public money without any justification, in particular when the Discoms are struggling to survive due to dearth of funds. The defective/problematic equipment are all major elements i.e. Circuit Breakers, Bus Reactor, Isolators and DG set in addition to miscellaneous equipment. TANGEDCO has requested the Commission to direct the Petitioner to discuss the proposal of replacement/ retrofitting / R&M of the plant and machinery and also the buildings and structures with the beneficiaries in RPC and get their consent apart from compliance of the mandatory requirements under the Regulations.

65. In response, the Petitioner *vide* affidavit dated 28.6.2021 has submitted that it has not made any imprudent projection and ACE claimed is as per the Tariff Regulations. The Petitioner has further submitted that ACE has been claimed under Regulation 25(2) of the 2019 Tariff Regulations and not Regulation 26 of the 2019 Tariff Regulations as referred by TANGEDCO. Regulation 25(2) of the 2019 Tariff Regulations specifically recognizes replacement of assets. It is not open to TANGEDCO or any other procurer to deny such claim on the ground that it should be under some other Regulation. Such insistence would render the Regulation 25(2) of the 2019 Tariff Regulations redundant and meaningless.

66. The Petitioner has further submitted that with regard to building and civil works, the Petitioner had already made submissions in reply to Technical Validation letter dated 7.10.2020. The building and civil works form part of the project and are not an asset. Further, though the useful life of these old and dilapidated buildings have been completed, useful life of the project is getting completed only in 2026-27 i.e. after 2019-24 tariff period is over.

67. The Petitioner has further submitted that Regulation 25(2)(a) of the 2019 Tariff Regulations specifically recognizes replacement of assets when 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 this Regulation, which is as follows:

> "*(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;"*

68. The Petitioner has submitted that the contention of TANGEDCO appears to be that all assets to be replaced after useful life should be through renovation and modernisation. According to the Petitioner, if this contention of TANGEDCO is accepted, the above Regulation 25(2)(a) of the 2019 Tariff Regulations would be rendered meaningless. The said Regulation specifically deals with a situation of replacement of assets under the original scope and being replaced due to useful life not being commensurate with the useful life of the project. All conditions of the same are satisfied in the case of buildings. The buildings etc. were part of the original scope of work. The useful life is not commensurate with the project. The useful life of building is

30 years and is over, while the useful life of the project is still continuing. Thus, useful life of buildings and civil work are not commensurate with the useful life of project and it is fully depreciated.

69. The Petitioner has further submitted that in this case, the buildings, etc. cannot be considered under Renovation and Modernisation head. The Renovation and Modernisation with requirements of Detailed Project Report, analysis etc. or consent of beneficiaries would not be appropriate for the building project which is not an independent transmission system or element. The building is a necessary part of the project and is essential for continuous and stable functioning of the transmission system/project. Therefore, building and civil works should not be subject to consent of the beneficiaries.

70. The Petitioner has further submitted that there cannot be any dispute on the necessity of the buildings. Further, the Petitioner has submitted that it is seeking costs of construction of buildings only to the extent necessary. The decision for replacement was taken based on internal assessment and the details have already been submitted *vide* affidavit dated 7.10.2020. The Petitioner has submitted that it is only seeking construction of 28+12 quarters as against the original 66+65 quarters. Therefore, the Petitioner has submitted that it seeks to minimise the expenditure.

71. The Petitioner with regard to defective equipment has submitted that though equipment have completed their useful life, the transmission asset has not yet completed its useful life. Therefore, the same cannot be dealt under Renovation and Modernisation head. Further, the above replacement is under Regulation 25(2)(c) of the 2019 Tariff Regulations and replacement is necessitated as recommended by CPRI.

The Petitioner has submitted details of the sub-stations wherein equipment are getting replaced and have already been specified in ACE details submitted along with Technical Validation reply dated 7.10.2020. Further, the Petitioner has submitted that there cannot be any question of necessity of the equipment. In any case, the same are covered under Regulation 25(2)(c) of the 2019 Tariff Regulations and not under Renovation and Modernization. The Petitioner has submitted that there is no requirement of consent under Regulation 25 of the 2019 Tariff Regulations.

72. The Petitioner has denied that it is replacing assets that are in serviceable conditions. The Petitioner is seeking replacement of assets that are necessary and essential. The Petitioner has submitted that the allegation that the Petitioner is spending public money lavishly is misconceived and the Petitioner has no interest to unnecessarily incur costs.

73. The Petitioner has submitted that the alleged difficulties of distribution companies/ TANGEDCO due to dearth of funds is not acceptable and the same cannot be a reason to stop the maintenance of the transmission system. Absence of efficient transmission system would only cause loss to the Distribution Companies as well as other entities in the State. The Petitioner has submitted that it is necessary to anticipate and ensure reliable and continuous transmission of electricity and it is the distribution companies which would raise objections for any fault which may occur in transmission.

74. We have considered the submissions made by TANGEDCO and the Petitioner. The cost details for ACE/ de-capitalization proposed during 2019-24 as revised by the Petitioner vide Auditor's certificate dated 14.9.2021 are as follows:

(₹ in lakh)

Particulars	Building & Civil Works	Sub-station
Add: Estimated ACE in **2019-20**	0.00	124.64
Less: Estimated de-capitalization during **2019-20**	0.00	(44.19)
Add: Estimated ACE in **2020-21**	244.58	2296.83
Less: Estimated de-capitalization during **2020-21**	0.00	-476.30*
Add: Estimated ACE in **2021-22**	498.54	2141.91
Less: Estimated de-capitalization during **2021-22**	(266.85)	-414.90**
Add: Estimated ACE in **2022-23**	720.62	1583.79
Less: Estimated de-capitalization during **2022-23**	0.00	-132.48
Add: Estimated ACE in **2023-24**	120.10	835.48
Less: Estimated de-capitalization during **2023-24**	0.00	-779.76
Total ACE proposed during 2019-24	**2604.53**	**6982.65**
Total de-capitalization proposed during 2019-24	**(266.85)**	**(1847.63)**
New ACE proposed during 2019-24	**2337.68**	**5135.02**

** decapitalization value of ₹179.88 lakh is claimed in FY 2020-21 whereas the same has been capitalised in the books of account in FY 2021-22*

***decapitalization value of ₹308.59 lakh and ₹179.88 lakh is claimed in FY 2016-17 and FY 2020-21 based on actual date of dcapitalization and hence deducted from FY 2021-22*

75. The Petitioner has proposed net ACE of ₹5135.02 (₹6982.65 lakh-decapitalization of 1847.63 lakh) towards replacement of various sub-station equipment at Somanhalli, Nagarjuna Sagar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations. The Petitioner has claimed net ACE of ₹2337.68 lakh towards "building and civil works".

76. We have considered the submissions of the Petitioner and TANGEDCO. The details of ACE allowed/disallowed for 2019-24 tariff Period are as follows:

(a) Replacement of sub-station equipment

The Petitioner has submitted that the sub-station has already completed more than 25 years of useful life and majority of the sub-station equipment need to be replaced. The proposed ACE towards replacement of 33 number of Circuit Breakers (CBs) at Somahalli, Nagarjunasgar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, 93 sets of 400 kV and 7 sets of 220 kV isolators at

Somahalli, Nagarjunasgar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, 132 number of 400 kV and 12 number of 220 kV CTs at Somahalli, Nagarjunasgar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, 9 number of 390 kV and 3 number of 216 kV Surge Arrestors at Somanhalli Sub-station, 18 number of 400 kV and 9 number of 220 kV CVT at Somanhalli, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, replacement of old/obsolete electro-mechanical relay with IEC 61850 compliant numerical relays at Somahalli, Nagarjunasgar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, replacement of old auxiliary LT supply system and DC distribution Board (DCDB) at Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations, replacement of existing old and worn-out fire protection system at Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations with new firefighting system, replacement of conventional C&R panel to SAS based C&R panel at Vijayawada Sub-station, installation of new back-up impedance realy for transformers at Gooty and Gazuwaka Sub-stations and wave fault locator at Nagarjunasgar, Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations. These items are of critical nature and their failure may affect the stability and reliability of the grid. Hence, the replacement of these obsolete equipment and consequential ACE towards this is allowed allowed.. The Petitioner is directed to submit the details of abstract cost estimates and details of the actual cost of the replaced equipment sub-station wise and work wise at the time of truing up.

(b) *Replacement of 63 MVAR Bus Reactor at Gooty Sub-station*

i) The Petitioner has submitted that 63 MVAr Bus Reactor installed at Gooty sub-station was completed more than 25 years of useful life. The

Petitioner has proposed replacement of 63 MVAr, 400 kV Bus reactor at Gooty Sub-station. The Commission directed the Petitioner to submit RPC/ SCM approval for the replacement of 63 MVAR Bus Reactor at Gooty Sub-station. The Petitioner has submitted that 39th meeting of TCC of SR held on3.12.2021 and SRPC meeting held on 6.12.2021 has approved the upgradation of 63 MVAR Bus Reactor at Gooty with 125 MVAR Bus Reactor.

ii) We have considered the submissions of the Petitioner. The relevant extracts of the Minutes of the 39th meetings of TCC & SRPC held on 3.12.2021 are as follows:

> ***"O.24. Up gradation of 63MVAR Bus Reactors of Gooty and Gajuwaka with 125MVAR under Additional Capitalization for the tariff block 2019-24***
>
> *24.4 SRPC Deliberation:*
> *a) Considering the views of CTUIL & SRLDC in support of PGCIL's proposal of replacement/ up gradation of the reactors at Gazuwaka and Gooty substations by 125 MVAR reactors, the Constituents agreed the same.*
> *b) SRPC approved the Up-gradation of 63 MVAR Bus Reactors of Gooty and Gajuwaka with 125 MVAR under Additional Capitalization for the tariff block 2019-24."*

iii) SRPC has approved for the up-gradation of 63 MVAR Bus Reactors of Gooty with 125 MVAR Bus Rector. Taking into consideration the approval of SRPC and the technical requirement, the up-gradation of 63 MVAR Bus Reactors of Gooty with 125 MVAR Bus Rector is approved.

(c) Building and Civil Works

It is observed that the Petitioner has also projected ACE towards buildings and civil structures which are more than 30 years old. The Petitioner has proposed to demolish these structures which it has claimed to have dilapidated and unsafe and construct new buildings and structures during 2019-24 tariff period. As has

been directed by us in various orders regarding replacements of buildings and civil structures, the Petitioner may discuss the proposal for construction of buildings and civil structures in the RPC and thereafter approach the Commission with a fresh petition.

77. The Petitioner has claimed ACE towards indoor and outdoor Illumination at Vijayawada, Khammam, Gooty and Gazuwaka Sub-stations. However, we do not allow the same as ACE because it is in the nature of O&M Expenses, and, therefore, the same shall be met from O&M Expenses.

78. Accordingly, detailed break-up of ACE allowed under Regulation 25(2) of the 2019 Tariff Regulations in respect of the transmission asset in 2019-24 tariff period and and de-capitalisation allowed is as follows:

(₹ in lakh)

Particulars	Building & Civil Works	Sub-station
Add: Estimated ACE in **2019-20**	0.00	124.64
Less: Estimated de-capitalization during **2019-20**	0.00	(44.19)
Add: Estimated ACE in **2020-21**	0.00	2236.83
Less: Estimated de-capitalization during **2020-21**	0.00	-394.73
Add: Estimated ACE in **2021-22**	0.00	2141.91
Less: Estimated de-capitalization during **2021-22**	0.00	-414.90
Add: Estimated ACE in **2022-23**	0.00	1583.79
Less: Estimated de-capitalization during **2022-23**	0.00	-132.48
Add: Estimated ACE in **2023-24**	0.00	835.48
Less: Estimated de-capitalization during **2023-24**	0.00	-779.76
Total ACE allowed during 2019-24	**0.00**	**6922.65**
Total de-capitalization allowed during 2019-24	**0.00**	**(1766.06)**
New ACE allowed during 2019-24	**0.00**	**5156.59**

79. Accordingly, capital cost of the transmission asset as on 31.3.2024 approved is as follows:

(₹ in lakh)

Capital Cost as on 1.4.2019	2019-20		2020-21		2021-22		2022-23		2023-24		Capital Cost as on 31.3.2024
	ACE	De-capitalisation	ACE	De-capitalisation	ACE	De-capitalisation	ACE	De-capitalisation	ACE	De-capitalisation	
29285.41	124.64	(44.19)	2236.83	(394.73)	2141.91	(414.90)	1583.79	(132.48)	835.48	(779.76)	34442.00

Debt-Equity ratio

80. Regulation 18 of the 2019 Tariff Regulations provide as follows:

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

Provided that:

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

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

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

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

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

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

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

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

(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation."

81. The debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The decapitalisation of the transmission asset in the instant case is carried out in the debt-equity ratio as claimed by the Petitioner. The debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period is as follows:

Debt-Equity for Gross Capital Cost as on 1.4.2019

(₹ in lakh)

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh) (A)	(in %)
Debt	15841.76	54.09
Equity	13443.66	45.91
Total	**29285.41**	**100.00**

Debt-Equity for ACE and De-capitalization during 2019-24

Particulars	ACE (B)		De-capitalization (C)		ACE (D)		De-capitalization (E)		ACE (F)	
	2019-20 (₹ in lakh)	(in %)	2019-20 (₹ in lakh)	(in %)	2020-21 (₹ in lakh)	(in %)	2020-21 (₹ in lakh)	(in %)	2021-22 (₹ in lakh)	(in %)
Debt	87.25	70.00	22.10	50.00	1565.78	70.00	197.37	50.00	1499.34	70.00
Equity	37.39	30.00	22.10	50.00	671.05	30.00	197.37	50.00	642.57	30.00
Total	**124.64**	**100.00**	**44.19**	**100.00**	**2236.83**	**100.00**	**394.73**	**100.00**	**2141.91**	**100.00**

Particulars	De-capitalization (G)		ACE (H)		De-capitalization (I)		ACE (J)		De-capitalization (K)	
	2021-22 (₹ in lakh)	(in %)	2022-23 (₹ in lakh)	(in %)	2022-23 (₹ in lakh)	(in %)	2023-24 (₹ in lakh)	(in %)	2023-24 (₹ in lakh)	(in %)
Debt	207.45	50.00	1108.65	70.00	66.24	50.00	584.84	70.00	389.88	50.00
Equity	207.45	50.00	475.14	30.00	66.24	50.00	250.64	30.00	389.88	50.00
Total	**414.90**	**100.00**	**1583.79**	**100.00**	**132.48**	**100.00**	**835.48**	**100.00**	**779.76**	**100.00**

Debt-Equity for Capital Cost as on 31.3.2024

Particulars	Capital cost as on 31.3.2024 (₹ in lakh) (L)=(A)+(B)-(C)+(D)-(E)+(F)-(G)+(H)-(I)+(J)-(K)	(in %)
Debt	19804.58	57.50
Equity	14637.42	42.50
Total	**34442.00**	**100.00**

Depreciation

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

> ***"33. Depreciation:*** *(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:*
>
> *Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*
>
> *(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*
>
> *(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*
>
> *Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;*
>
> *Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:*

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

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

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

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

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

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

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

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

(9) Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (8) of this Regulation.

(10) Depreciation of the emission control system of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of-

a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or
b) balance useful life of the generating station or unit thereof plus fifteen years,

in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or
c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life."

83. 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 (upto 90% of the existing gross block of the transmission asset) to be recovered over the balance useful life upto 31.3.2023 and thereafter no depreciation is allowed on the existing transmission asset. WAROD has been worked out and placed as Annexure-II (A) and Annexure-II (B) after taking into account the depreciation rates as prescribed in the 2019 Tariff Regulations. Hence, depreciation for ACE (new additions) claimed during 2019-24 tariff period is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations, subject to submission of requisite documents/ information for ACE claimed at the time of truing-up. Depreciation allowed for the transmission asset for 2019-24 period is as follows:

(₹ in lakh)

	Existing Assets	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
A	Opening Gross Block	29285.41	29241.22	28846.49	28431.59	28299.11
B	ACE	0.00	0.00	0.00	0.00	0.00
C	Decapitalisation	44.19	394.73	414.90	132.48	779.76
D	Closing Gross Block (D)= (A+B-C)	29241.22	28846.49	28431.59	28299.11	27519.35
E	Average Gross Block (E)= (A+D)/2	29263.32	29043.86	28639.04	28365.35	27909.23
F	Freehold Land	421.20	421.20	421.20	421.20	421.20
G	Weighted Average rate of Depreciation (WAROD) (in %)	2.02%	1.92%	1.90%	2.01%	1.48%
H	Depreciable Value (E-F)*90%	25957.90	25760.39	25396.06	25149.74	24739.23
I	Cumulative Depreciation at the beginning	22416.65	22972.68	23220.64	23442.83	23911.86
J	Remaining Aggregate Depreciable Value at the beginning of the year (H-I)	3541.25	2787.71	2175.42	1706.91	827.37
K	Balance useful life of the asset (Year)	6	5	4	3	2
L	Elapsed life (Year)	26	27	28	29	30
M	**Depreciation J/K**	**590.21**	**557.54**	**543.85**	**568.97**	**413.68**
N	Depreciation adjustment on account of decapitalisation	(34.18)	(309.58)	(321.66)	(99.94)	(598.62)

O	Cumulative Depreciation at the end of the year (I+M+N)	22972.68	23220.64	23442.83	23911.86	23726.92
P	Remaining Depreciation Value at the end of the year (H-O)	2985.22	2539.75	1953.22	1237.87	1012.30

(₹ in lakh)

New Additions	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Gross Block (A)	0.00	124.64	2361.47	4503.38	6087.17
Additional Capitalisation (B)	124.64	2236.83	2141.91	1583.79	835.48
Closing Gross Block (C)= A+B	124.64	2361.47	4503.38	6087.17	6922.65
Average Gross Block (D) = (A+C)/2	62.32	1243.06	3432.43	5295.28	6504.91
Freehold Land	0.00	0.00	0.00	0.00	0.00
Weighted average rate of Depreciation (WAROD) (in %)	5.28%	5.28%	5.28%	5.28%	5.28%
Depreciable Value	56.09	1118.75	3089.18	4765.75	5854.42
Cumulative Depreciation at the beginning of the year	0.00	3.29	68.92	250.16	529.75
Depreciation	**3.29**	**65.63**	**181.23**	**279.59**	**343.46**
Cumulative Depreciation at the end of the year	3.29	68.92	250.16	529.75	873.21
Remaining Depreciable Value at the end of the year	52.80	1049.83	2839.03	4236.00	4981.21

Total Depreciation (Existing and New Assets)

(₹ in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Existing Assets	590.21	557.54	543.85	568.97	413.68
New Assets	3.29	65.63	181.23	279.59	343.46
Total Depreciation	**593.50**	**623.18**	**725.09**	**848.56**	**757.14**

Interest on Loan (IoL)

84. 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.

(5a) The rate of interest on loan for installation of emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company 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."

85. Gross normative loan has already been repaid prior to 1.4.2019 and, therefore, IoL has been considered on ACE (new additions). The weighted average rate of IoL has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period may be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of truing up.

86. The Petitioner has claimed IoL for 2020-21, 2021-22, 2022-23 and 2023-24 and not for the initial one year in 2019-24 tariff period. As depreciation of the new ACE has allowed, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of the transmission asset is as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	15841.76	15929.00	17494.78	18994.12	20102.77
Cumulative repayments up to previous year	15841.76	15845.05	15910.68	16091.91	16371.50
Net loan-opening	0.00	83.96	1584.11	2902.21	3731.27
Additions	87.25	1565.78	1499.34	1108.65	584.84
De-capitalisation	22.10	197.37	207.45	66.24	389.88
Repayment during the year	3.29	65.63	181.23	279.59	343.46
Adjustment of cumulative repayment pertaining to the decapitalised asset	22.10	197.37	207.44	66.24	389.88
Net loan-closing	83.96	1584.11	2902.20	3731.27	3972.65
Average Loan	41.98	834.03	2243.15	3316.74	3851.96
Weighted Average Rate of Interest on Loan (in %)	7.4570	7.4414	7.4346	7.4276	7.4204
Interest on Loan	**3.13**	**62.06**	**166.77**	**246.35**	**285.83**

Return on Equity (RoE)

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

> *"**30. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.*
>
> *(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of river generating station with pondage:*
>
> *Provided that return on equity in respect of additional capitalization after cutoff date beyond the original scope, excluding additional capitalization on 7 account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.*
>
> *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.

(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in which the date of operation (Ode) occurs plus 350 basis point, subject to ceiling of 14%;

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:

Rate of pre-tax return on equity = 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:

Rate of return on equity = 15.50/(1-0.2155) = 19.758%

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

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

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

88. 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 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 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 it. 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 2019-24 tariff period on yearly basis on receipt of Income Tax assessment order.

89. We have considered the submissions of the Petitioner. 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 the transmission asset is as follows:

(₹ in lakh)

Particulars	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Equity	13443.66	13458.95	13932.64	14367.76	14776.66
Additions	37.39	671.05	642.57	475.14	250.64
Less: Equity component due to Decapitalization	-22.10	-197.37	-207.45	-66.24	-389.88
Closing Equity	13458.95	13932.64	14367.76	14776.66	14637.42
Average Equity	13451.30	13695.79	14150.20	14572.21	14707.04
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
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	**2526.36**	**2572.28**	**2657.62**	**2736.88**	**2762.20**

Operation & Maintenance Expenses (O&M Expenses)

90. The O&M Expenses claimed by the Petitioner for the 2019-24 tariff period are as follows:

(₹ in lakh)

Details	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
19 Number of . 400 kV Sub-station bays	610.85	632.32	654.55	677.54	701.29
4 Number of . 400 kV Sub-station ICT (315 MVA ICT at Hyderabad,Gooty,Vijayawada,Gajuwaka)	451.08	467.46	483.84	501.48	517.86
1230.29 km S/C (Double Conductor)	618.84	640.98	663.13	686.50	711.11
PLCC (2% of ₹211.07)	4.22	4.22	4.22	4.22	4.22
Total	**1684.98**	**1745.01**	**1805.74**	**1869.74**	**1934.50**

91. The Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provide 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*
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 azuwaka BTB)	*834*	*864*	*894*	*925*	*958*
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	*1,666*	*1,725*	*1,785*	*1,848*	*1,913*
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	*2,252*	*2,331*	*2,413*	*2,498*	*2,586*
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	*2,468*	*2,555*	*2,645*	*2,738*	*2,834*

±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	*1,696*	*1,756*	*1,817*	*1,881*	*1,947*
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	*2,563*	*2,653*	*2,746*	*2,842*	*2,942*

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

Provided further that:

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

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

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

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

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

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

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

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

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

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

92. The Petitioner has claimed O&M Expenses separately for the PLCC under Regulation 35(4) of the 2019 @ 2% of its original project cost in the instant petition and the Petitioner has made similar claim in other petitions as well. Though PLCC is a communication system, it has been considered as part of the sub-station in the 2014 Tariff Regulations and the 2019 Tariff Regulations and the norms for sub-station has been specified accordingly. Accordingly, the Commission *vide* order dated 24.1.2021 in Petition No.126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations even though PLCC is a communication system. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

93. We have considered the submissions of the Petitioner. The O&M Expenses have been worked out as per the norms specified in the 2019 Tariff Regulations and the same are as follows:

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
O&M Expenses					
19 Number of 220 kV bays					
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
Total	610.85	632.32	654.55	677.54	701.29
4 Number of 400 kV Sub-station ICTs					
Norms (₹ lakh/Bay)	0.358	0.371	0.384	0.398	0.411
Total	451.08	467.46	483.84	501.48	517.86
1230.29 km S/C (Double Conductor)					
Norms (₹ lakh/km)	0.503	0.521	0.539	0.558	0.578
Total	618.84	640.98	663.13	686.50	711.11
Total O&M Expenses allowed (₹ in lakh)	**1680.77**	**1740.76**	**1801.52**	**1865.52**	**1930.26**

Interest on Working Capital (IWC)

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

> *"**34. Interest on Working Capital***
>
> *(1)…*
>
> ***(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:***
>
> *i. Receivables equivalent to 45 days of fixed cost;*
> *ii. Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*
> *iii. Operation and maintenance expenses, including security expenses for one month"*
>
> *(3)Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later:*
>
> *Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.*
>
> *(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.*
>
> *"3.Definitions …*
>
> *(7) **'Bank Rate'** means the one-year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;"*

95. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. The IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (RoI) 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 it has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.00% plus 350 basis points).

96. We have considered the submissions of the Petitioner. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations and the components of the working capital and interest allowed thereon for the transmission system for 2019-24 tariff period 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 one month)	140.06	145.06	150.13	155.46	160.85
Working Capital for Maintenance Spares (15% of O&M Expenses)	252.12	261.11	270.23	279.83	289.54
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	605.41	630.61	673.88	717.33	720.29
Total Working Capital	**997.58**	**1036.78**	**1094.23**	**1152.62**	**1170.68**
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	**120.21**	**116.64**	**114.89**	**121.02**	**122.92**

Annual Fixed Charges of 2019-24 Tariff Period

97. The transmission charges allowed for the transmission asset for 2019-24 tariff period are summarised as follows:

(₹ in lakh)

Particulars	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Depreciation	593.50	623.18	725.09	848.56	757.14
Interest on Loan	3.13	62.06	166.77	246.35	285.83
Return on Equity	2526.36	2572.28	2657.62	2736.88	2762.20
O & M Expenses	1680.77	1740.76	1801.52	1865.52	1930.26
Interest on Working Capital	120.21	116.64	114.89	121.02	122.92
Total	**4923.96**	**5114.92**	**5465.89**	**5818.34**	**5858.36**

Filing Fees and the Publication Expenses

98. The Petitioner has sought reimbursement of fees 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 Fees & RLDC Fees and Charges

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

Goods and Services Tax

100. 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.

101. TANGEDCO has submitted that the Government of India has exempted the transmission of electricity from GST. Hence, if GST is levied at any point of time in future, the same shall be charged and billed separately by the Petitioner.

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

Security Expenses

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

104. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses on projected basis for 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The said petition has already been disposed of by the Commission vide order dated 3.8.2021. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.

Capital Spares

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

Sharing of Transmission Charges

106. TANGEDCO has submitted that while the Petitioner has claimed for sharing as per the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (2010 Sharing Regulations) However, the new Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 (2020 Sharing Regulations) has been notified on 4.5.2020 and sharing from 1.11.2020 onwards should be as per the 2020 Sharing Regulations. Hence, it is necessary to segregate the additional cost and tariff liability

upto 31.10.2020 and from 1.11.2020 onwards as per the 2010 Sharing Regulations and 2020 Sharing Regulations respectively.

107. In response, the Petitioner has submitted that CTU will take into consideration both the 2010 Sharing Regulations and 2020 Sharing Regulations at the time of billing.

108. We have considered the submissions of the Petitioner and TANGEDCO. The 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, TANGEDCO's contention regarding splitting the capital cost of the transmission assets and the tariff components on the basis of the 2010 Sharing Regulations and the 2020 Sharing Regulations is not relevant. The concerns raised by TANGEDCO shall be taken care of at the time of billing.

109. During 2001-04, 2004-09 and 2009-14 tariff periods (upto 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 is governed by 2010 Sharing Regulations. With effect from 1.11.2020, sharing is governed 2020 Sharing Regulations. Accordingly, the liabilities of the 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 the Sharing Regulations and shall be recovered from the concerned DICs through Bill 2 under

Regulation 15(2)(b) of the 2020 Sharing Regulations. For subsequent period, the billing, collection and disbursement of the transmission charges approved in this order shall be governed by the provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

110. To summarise:

a) The revised AFC allowed for the transmission asset as per the APTEL's judgements for 2001-04 period are as follows:

(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
AFC	3604.40	3613.19	3169.83

b) The trued-up AFC allowed for the transmission asset for 2014-19 tariff period is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017–18	2018-19
AFC	4921.57	5002.85	5059.98	5099.65	5230.98

c) AFC allowed for the transmission asset for 2019-24 tariff period in this order is as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	4923.96	5114.92	5465.89	5818.34	5858.36

111. Annexure-I, Annexure-II (A) and Annexure-II (B) form part of the order.

112. This order disposes of Petition No. 154/TT/2020 in terms of the above discussions and findings.

sd/-	**sd/-**	**sd/-**
(P.K. Singh)	**(Arun Goyal)**	**(I.S. Jha)**
Member	**Member**	**Member**

Annexure-I

2014-19	Admitted Capital Cost as on 1.4.2014 / COD (₹ in lakh)	ACE/ Decapitalization (₹ in lakh)						Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (₹ in lakh)					
Capital Expenditure		**2015-16**	**2015-16**	**1.4.2016 - 1.3.2017**	**2.3.2017 - 31.3.2017**	**2017-18**	**2018-19**			**2014-15**	**2015-16**	**1.4.2016 - 1.3.2017**	**2.3.2017 - 31.3.2017**	**2017-18**	**2018-19**
Land - Freehold	421.20	0.00	0.00	0.00	0.00	0.00	0.00	421.20	0.00%	Spreading					
Land - Leasehold	47.42	0.00	0.00	0.00	0.00	0.00	0.00	47.42	3.34%						
Building Civil Works & Colony	1020.69	0.00	0.00	0.00	0.00	0.00	0.00	1020.69	3.34%						
Transmission Line	19666.79	0.00	0.00	0.00	0.00	0.00	0.00	19666.79	5.28%						
Sub Station	7574.93	0.00	0.00	0.00	-308.59	61.27	590.63	7918.24	5.28%						
PLCC	83.45	45.85	85.19	3.42	0.00	0.00	-6.84	211.07	6.33%						
IT Equipment (Incl. Software)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.28%						
Total	**28814.48**	**45.85**	**85.19**	**3.42**	**-308.59**	**61.27**	**583.79**	**29285.41**	**Total**	**491.72**	**497.62**	**459.41**	**35.68**	**500.07**	**541.54**
Average Gross Block (₹ in lakh)(A)										**28837.41**	**28902.93**	**28947.23**	**28638.64**	**28670.99**	**28993.52**
Remaining Depreciable Value (₹ in lakh)(B)										**5408.91**	**4976.16**	**4518.42**	**3781.28**	**4000.58**	**3790.78**
Balance Life (in years) (C)										**11**	**10**	**9**	**9**	**8**	**7**
Depreciation(D)										**491.72**	**497.62**	**459.41**	**35.68**	**500.07**	**541.54**
Weighted Average Rate of Depreciation (E)=[(A)/(D)]										**1.71%**	**1.72%**	**1.73%**	**1.47%**	**1.74%**	**1.87%**

Annexure-II (A) (Existing Assets)

2019-24	Combined Admitted Capital Cost as on 1.4.2019 / COD (₹ in lakh)	Projected Decapitalization (₹ in lakh)					Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (₹ in lakh)				
Capital Expenditure		**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**			**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Land - Freehold	421.20	0.00	0.00	0.00	0.00	0.00	421.20	-	Spreading				
Land - Leasehold	47.42	0.00	0.00	0.00	0.00	0.00	47.42	3.34%					
Building Civil Works & Colony	1020.69	0.00	0.00	0.00	0.00	0.00	1020.69	3.34%					
Transmission Line	19666.79	0.00	0.00	0.00	0.00	0.00	19666.79	5.28%					
Sub Station	7918.24	44.19	394.73	414.90	132.48	779.76	6152.18	5.28%					
PLCC	211.07	0.00	0.00	0.00	0.00	0.00	211.07	6.33%					
IT Equipment (Incl. Software)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00%					
Total	**29285.41**	**44.19**	**394.73**	**414.90**	**132.48**	**779.76**	**27519.35**	**Total**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Average Gross Block (₹ in lakh) (A)									**29263.32**	**29043.86**	**28639.04**	**28365.35**	**27909.23**
Remaining Depreciable Value (₹ in lakh) (B)									**3541.25**	**2787.71**	**2175.42**	**1706.91**	**827.37**
Balance Life (in years) (C)									**6.00**	**5.00**	**4.00**	**3.00**	**2.00**
Depreciation (D)									**590.21**	**557.54**	**543.85**	**568.97**	**413.68**
Weighted Average Rate of Depreciation (E)=[(D)/(A)]									**2.02%**	**1.92%**	**1.90%**	**2.01%**	**1.48%**

Annexure-II (B) (New Assets)

2019-24	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Projected ACE (₹ in lakh)						Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (₹ in lakh)				
Capital Expenditure		**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Total**			**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Sub Station	-	124.64	2236.83	2141.91	1583.79	835.48	6922.65	6922.65	5.28%	3.29	65.63	181.23	279.59	343.46
Total	**-**	**124.64**	**2236.83**	**2141.91**	**1583.79**	**835.48**	**6922.65**	**6922.65**		**3.29**	**65.63**	**181.23**	**279.59**	**343.46**
Average Gross Block (₹ in lakh)										**62.32**	**1243.06**	**3432.43**	**5295.28**	**6504.91**
Weighted Average Rateof Depreciation										**5.28%**	**5.28%**	**5.28%**	**5.28%**	**5.28%**