

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 274/TT/2020

Coram:

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

Date of Order: 02.06.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and revision of transmission tariff of 2004-09 and 2009-14 tariff periods, truing up of transmission tariff of 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 in respect of Transmission System associated with Kathalguri Gas based Combined Cycle Project in North Eastern Region.

And in the matter of:

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

.....Petitioner

Vs.

1. Assam Electricity Grid Corporation Limited,
(Formerly Assam State Electricity Board),
Bijulee Bhawan, Paltan Bazar,
Guwahati-781001, Assam.
2. Meghalaya Energy Corporation Limited,
(Formerly Meghalaya State Electricity Board),
Short Round Road, "Lumjingshai",
Shillong-793001, Meghalaya.
3. Government of Arunachal Pradesh,
Itanagar, Arunachal Pradesh.
4. Power and Electricity Department,
Government of Mizoram,
Aizawl, Mizoram.
5. Manipur State Electricity Distribution Company Limited,



(Formerly Electricity Department, Government of Manipur),
Keishampat, Imphal.

6. Department of Power,
Government of Nagaland,
Kohima, Nagaland.
7. Tripura State Electricity Corporation Limited,
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura (W)-799001, Tripura.

...Respondent(s)

For Petitioner: Shri S. S. Raju, PGCIL
Shri A. K. Verma, PGCIL
Shri V. P. Rastogi, PGCIL
Shri D. K. Biswal, PGCIL

For Respondents: None

ORDER

The instant Petition has been filed by Power Grid Corporation of India Limited, a deemed transmission licensee, for revision of transmission tariff of 2004-09 and 2009-14 tariff periods, truing-up of the capital expenditure 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 for determination of tariff of 2019-24 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of the following assets (hereinafter referred to as the “transmission assets”) under the Transmission System associated with Kathalguri Gas based Combined Cycle Project in North Eastern Region (hereinafter referred to as the “transmission system”):

Asset-1: 400 kV D/C Kathalguri-Mariani Transmission Line;

Asset-2: 400 kV D/C Mariani-Misa and 400 kV Kathalguri-Misa Transmission Lines;



Asset-3: 400 kV Misa- Balipara Ckt. I & II, 400 kV Balipara-Bongaigaon and Balipara-Tezpur Transmission Lines;

Asset-4: Bongaigaon-New Siliguri (inter-regional asset of Eastern Region and North Eastern Region) and

Asset-5: New Siliguri-Malda Transmission Line.

Asset-1, Asset-4 and Asset-5 have hereinafter been referred to as transmission assets while Asset-2 and Asset-3 have been termed as Combined Asset-2&3 during 2009-14 and 2014-19 tariff period. All the individual transmission assets have been combined during 2019-24 tariff period. Therefore, during 2019-24 period, assets have been referred to as Combined Asset in this order.

2. The Petitioner has made the following prayers in the instant Petition:

“1) Approve the revised Transmission Tariff for 2004-09 block and transmission tariff for 2009-14 block for the assets covered under this petition, as per para 8 above.

2) Approve the Add-cap incurred during 2014-19 and projected to be incurred during 2019-24.

3) Approve the trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition, as per para 9 and 10 above.

4)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.

5) 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.

6) 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.

7) 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.

8) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the respondents.

9) 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.

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

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

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

Background

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

a. The administrative approval and expenditure sanction for the transmission system was originally accorded by the Central Government in Ministry of Power vide its letter dated 22.2.1995 for ₹68119 lakh. The estimated cost of the transmission system was revised, and sanction was accorded by the Central Government, Ministry of Power vide letter dated 22.3.2001 for the revised cost estimate of ₹101010 lakh. The estimated cost in respect of the transmission system was further revised by Ministry of Power by its letter dated 2.12.2005 and accorded its approval for the second revised cost estimate (RCE-II) of ₹105990 lakh.

b. The scope of work covered under the Project is broadly as follows:

Transmission lines:

- (i) 400 kV D/C Kathalguri-Misa (LILO of one Ckt. at Mariani) to be charged at 200 kV
- (ii) 400 kV D/C Misa-Balipara Transmission Line
- (iii) 400 kV D/C Balipara-Bongaigaon Transmission Line
- (iv) 400 kV D/C Bongaigaon-Malda Transmission Line
- (v) 220 kV S/C (on D/C towers) Balipara-Tezpur Transmission Line



Sub-station:

- (i) New 400/220 kV Sub-stations at Misa, Balipara and Bongaigaon
- (ii) Extension of 400 kV Malda Sub-station
- (iii) Extension of 220 kV Mariani (ASEB) by two 220 kV Bays and Tezpur (ASEB) Sub-station by one 220 kV bay

c. The complete scope of the work is covered in the instant petition. The details of the transmission assets covered under transmission system is as follows:

Assets	Asset Name	COD	Remarks
Asset-1	400 kV D/C Kathalguri-Mariani Transmission Line	1.8.1995	
Asset-2	400 kV D/C Mariani-Misa & 400 kV Kathalguri-Misa Transmission Lines	1.4.1998	Asset combined on notional COD as 1.2.2000.
#Asset-3	400 kV Misa- Balipara Ckt I & Ckt II, 400 kV Balipara-Bongaigaon & Balipara-Tezpur Transmission Lines	1.2.2000	
Asset-4	Bongaigaon-New Siliguri (inter-regional asset of Eastern Region and North Eastern Region)	1.4.2000	
Asset-5	New Siliguri-Malda Transmission Line	1.4.2000	
	Combined assets for Kathalguri Transmission system for 2019-24	15.10.1999	(Effective COD)

In Petition No. 68/TT/2021, Petitioner has submitted that the existing 4 x 105 MVA, 400/220 kV, 1-Ph ICTs is replaced with 1x500 MVA, 400/220 kV, 3Ph ICT at Misa Sub-station and it is kept as a Regional spare, which is a part of the instant transmission system.

d. The relevant extract from order dated 2.3.2022 in Petition No. 68/TT/2021 is as below:

“10. We have considered the submissions of the Petitioner. We observe that the replacement of the 4X105 MVA ICT with 500 MVA ICT and to keep the replaced 4X105 MVA ICTs as a regional spare was discussed in the 4th Meeting of Standing Committee on Power System Planning of North Eastern Region held on 13.12.2014. The relevant extracts of the Minutes of the 4th Meeting of Standing Committee on Power System Planning of North Eastern Region held on 13th December 2014 are as under:

“6.0 Augmentation of Transformation Capacity at 400/220/33 kV Misa substation of POWEWRGRID.

6.1 Director (SP&PA), CEA stated that existing transformation capacity at 400/220 kV level at Misa is 2x315 MVA out of which one is a bank of 4x105 MVA (incl. one spare) single phase transformers. The loading on both the ICTs is more



than 300 MW and it has recorded maximum loading of 410 MW. It is proposed to augment the transformation capacity by addition of 2x500 MVA in place of the bank of single phase transformers.

6.2 AGM, POWERGRID informed that there is severe space constraint at Misa. Accordingly, space created after removal of 4x105 MVA single phase transformers would be utilized for installation of 2 no. 500 MVA transformers with GIS bays.

6.3 SE, NERPC informed that GIS bays have been agreed considering the space constraint at Misa in the last OCC meeting.

6.4 MD, MSPCL said that timing for replacement of transformer be chosen so as there is minimum disruption of power supply to the NER constituents.

6.5 After further deliberations, Members agreed for implementation of following scheme by POWERGRID • Dismantling / Removal of 4x105 MVA, 400/220 kV ICT at Misa sub-station of POWERGRID • Addition of 2x500 MVA, 400/200 kV ICT with GIS bays in the space vacated after removal of 4x105 MVA, 400/220 kV ICT at Misa sub-station of POWERGRID

6.6 4x105 MVA, 400/220 kV ICT thus released shall be kept as regional spare.”

11. Taking into consideration the minutes of the 4th meeting of Standing Committee on Power System Planning of North Eastern Region, we approve the replaced 4x105 MVA, 400/220 kV ICT at Misa Sub-station as regional spare”

- e. In the North-Eastern Region (NER), a Uniform Common Pooled Transmission Tariff (UCPTT) in terms of “paise per kWh” was being followed from 1991-92, The Commission vide order dated 1.1.2002 in Petition No. 40/2000 had provisionally approved UCPTT up to 31.3.2004 in respect of the transmission assets.
- f. Further, vide order dated 27.4.2007 in Petition No. 87/2006, the Commission made the following observations:

“7. Energy availability from Central generating stations in NER has gradually gone up in the recent years. On the other hand, the annual transmission charges, had they been calculated following the principles laid down in the Commission’s tariff regulations, would have been coming down with repayment of loans over the years. A stage has thus come where continuation of the UCPTT is no longer beneficial to the NER States. The UCPTT scheme has already continued much beyond the date contemplated by the Commission for its termination in the order dated 1.1.2002. We are therefore keen that NER system switches over without further delay from the UCPTT Scheme, in which the Petitioner’s revenue depends on the energy generated in the region (which is outside the Petitioner’s control), to a scheme of annual transmission charges based on the Petitioner’s investment in the regional system. Since this change-over has to be effected from the beginning of a financial year, it is proposed from 1.4.2007. This had also been indicated by the Commission during the hearing on 30.11.2006.”



- g. Subsequently, vide order dated 16.4.2008 in Petition No. 87/2006, the Commission held that with effect from 1.4.2007, the transmission charges for all the transmission assets in the NER are to be determined under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as “the 2004 Tariff Regulations”).
- h. Accordingly, the transmission tariff for the period from 1.4.2007 to 31.3.2009 in respect of Asset-1, Asset-2 and Asset-3 was determined based on provisionally approved capital cost as per order dated 27.4.2007 in the Petition No. 87/2006 and same for erstwhile combined Asset-4 and Asset-5 was determined as per order dated 14.1.2006 in Petition No. 121/2004. The transmission tariff in respect of Asset-1, Asset-2 and Asset-3 was revised on account of Additional Capital Expenditure (ACE) during 1999-2006 and de-capitalization during 2004-09 period vide order dated 16.4.2008 in Petition No. 87/2006. The tariff was further revised vide order dated 7.9.2009 in Petition No. 87/2006 as per APTEL’s judgement dated 4.11.2008 in Appeal No. 81/2008. The Commission vide order dated 24.9.2007 in Petition No. 80/2007 recognised the changed status and allowed apportionment of transmission charges between Asset-4 and Asset-5. The transmission tariff for Asset-4 and Asset-5 was revised vide order dated 15.5.2009 in Petition No. 75/2008.
- i. The transmission tariff for the period from 1.4.2009 to 31.3.2014, was determined vide order dated 23.11.2011 in Petition No. 313/2010. The tariff for 2009-14 period was trued-up and tariff for the period from 1.4.2014 to 31.3.2019 was determined vide order dated 29.1.2016 in Petition No. 380/TT/2014.
- j. The Petitioner has sought revision of the approved transmission tariff for 2004-09 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 Appellate Tribunal for Electricity (“APTEL”) judgments dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and 13.6.2007 in Appeal No. 139/2006 and batch matters. The Petitioner has sought consequential revision of tariff allowed for 2009-14 period, truing up of tariff of 2014-19 period and determination of tariff of 2019-24 period of the



transmission asset. The Petitioner has further submitted that the revised transmission charges for 2004-09 tariff period has been calculated and the same is effective from 1.4.2007 and claimed the revision of tariff from 2007-08 onwards.

- k. The APTEL in judgment 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 given in the following table:

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

- l. 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 the APTEL are given in the following table:



Sl. No.	Issue	APTEL's decision/ direction
I	Computation of outstanding loan at the beginning of the tariff period i.e. 1.4.2004	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	Commission to consider the issue afresh
III	Treating depreciation available as deemed repayment of loan	Commission to make a fresh computation of outstanding loan
IV	Admissibility of depreciation up to 90%	Commission to consider the issue afresh
V	Cost of Maintenance Spares	Commission to consider the issue afresh
VI	Impact of de-capitalisation of the assets on cumulative repayment of Loan	The cumulative repayment of the loan proportionate to the assets decapitalized required to be reduced. Commission to act accordingly
VII	Non-consideration of normative transit loss for coal import	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 Appeal Nos.135 to 140 of 2005. 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. Commission shall re-compute the interest accordingly.

m. 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.

n. Based on the APTEL's judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and dated 13.6.2007 in Appeal No. 139/2006 and batch matters,



the Petitioner sought revision of tariff of its transmission assets for 2001-04 and 2004-09 tariff periods in the Petition No. 121/2007. The Commission after taking into consideration the pendency of Appeals before the Hon'ble Supreme Court adjourned the matter *sine die* and directed that the same be revived after the disposal of the Civil Appeals by the Hon'ble Supreme Court.

- o. The Hon'ble Supreme Court vide its judgment dated 10.4.2018 dismissed the said Civil Appeals. Thus, the judgments of the APTEL have attained finality.
- p. Consequent to the Hon'ble Supreme Court's judgment dated 10.4.2018 in NTPC matters, Petition No. 121/2007 was listed for hearing on 8.1.2019 before the Commission. The Commission, vide order dated 18.1.2019 in the Petition No. 121/2007, directed the Petitioner to submit its claim separately for the assets at the time of filing of truing up of the Petitions for the 2014-19 period in respect of concerned transmission assets.
- q. The instant petition was heard on 10.9.2021 and in view of APTEL's judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and dated 13.6.2007 in Appeal No. 139/2006 and the order of Hon'ble Supreme Court dated 10.4.2018, tariff is being revised. Period wise tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods and suitable assumptions have been made at certain places and applied, which are indicated.
- r. The capital cost of ₹8219.37 lakh for Asset-1, ₹18171.56 lakh for Asset-2 and ₹43985.64 lakh for Asset-3 as on 1.4.2004 has been approved by the Commission and considering the expenditure of ₹6.30 lakh for Asset-3 during 2005-06, the capital cost approved by the Commission vide its order dated 7.9.2009 in Petition No. 87/2006 is ₹8219.37 lakh for Asset-1, ₹18171.56 lakh for Asset-2, and ₹43991.94 lakh for Asset-3 as on 1.4.2006. The capital cost of ₹35579.13 lakh for combined Asset-4 and Asset-5 in the instant order as on 1.4.2004 and apportioned cost of ₹21109.68 lakh for Asset-4 and ₹14469.44 lakh for Asset-5 as on 1.10.2005 has been approved by the Commission vide order dated 15.5.2009 in Petition No. 75/2008. Accordingly, tariff is being



revised for 2007-09 and 2009-14 tariff periods in terms of the APTEL's judgements dated 22.1.2007 and 13.6.2007.

4. The Respondents are transmission utilities, distribution licensees and power departments, which are procuring transmission service from the Petitioner, mainly beneficiaries of the North Eastern Region.

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

Interest on Loan ("IoL")

6. The APTEL while dealing with the issue of computation of IoL, in judgment dated 22.1.2007 observed that IoL for the period from 1.4.1998 to 31.3.2001 shall be computed only on normative loan repayment as per its judgment dated 14.11.2006 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005. APTEL vide its judgment dated 14.11.2006 had set aside the Commission's methodology of computation of loan on the actual repayment basis or normative repayment whichever is higher and held that the Commission is required to adopt normative debt repayment methodology for working out IoL liability for the period 1.4.1998 to 31.3.2001. In view of the above, the interest allowed for 2004-09 period is revised on the basis of the normative debt repayment methodology.

Additional Capital Expenditure ("ACE")

7. The APTEL vide judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters held that ACE after COD should also be considered for computation of



maintenance spares. In view of the above, the maintenance spares to be considered for computation of working capital for 2004-09 period are also required to be revised taking into consideration ACE after COD.

Depreciation

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

9. The revision of tariff allowed for 2007-09 tariff period necessitates the revision of transmission tariff allowed for 2009-14 period, which is also allowed in the instant order. The implementation of the directions of the APTEL vide 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 matters in case of the Petitioner was kept pending, awaiting for 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 2007-09 period and 2009-14 tariff period. Therefore, the Petitioner is directed not to claim or pay any carrying cost from/to the beneficiaries for the difference, if any, in the tariff allowed earlier and the tariff being in the instant order. Further, the said difference in tariff shall be recovered over a period of six months from the date of issue of this order.



10. This order is issued considering the submissions made by the Petitioner vide affidavits dated 14.1.2020 and 14.7.2021.

11. The hearing in this matter was held on 10.9.2021 through *video* conference and order was reserved.

12. Having heard the representatives of the Petitioner and having perused the materials on record, we proceed to dispose of the petition.

REVISION OF TRANSMISSION CHARGES ALLOWED FOR 2004-09 AND 2009-14 TARIFF PERIODS

2004-09 tariff period

13. The Commission approved the transmission charges for 2007-09 period vide order dated 27.4.2007 in Petition No. 87/2006 w.r.t. Asset-1, Asset-2 and Asset-3 and revised it on account of ACE during the 1999-2004 period and de-capitalization during 2004-05 period *vide* order dated 16.4.2008 in Petition No. 87/2006. The tariff approved w.r.t. Asset-1, Asset-2 and Asset-3 was further revised vide order dated 7.9.2009 in Petition No. 87/2006 as per APTEL's judgement dated 4.11.2008 in Appeal No. 81/2008. The Commission approved the transmission charges for 2007-09 period for erstwhile combined Asset-4 and Asset-5 vide order dated 14.1.2006 in Petition No. 121/2004. The Commission vide order dated 24.9.2007 in Petition No. 80/2007 recognised the changed status and allowed apportionment of transmission charges between Asset-4 and Asset-5. The transmission tariff for Asset-4 and Asset-5 was revised vide order dated 15.5.2009 in Petition No. 75/2008. The transmission charges allowed for 2007-09 tariff period in respect of the transmission assets are as follows:

Asset-1

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	214.68	214.68



Interest on Loan	95.69	82.59
Return on Equity	575.36	575.36
Advance against Depreciation	0.00	0.00
O&M Expenses	73.16	76.22
Interest on Working Capital	34.22	35.09
Total	993.10	983.94

Asset-2

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	500.46	500.46
Interest on Loan	211.09	180.56
Return on Equity	1279.40	1279.40
Advance against Depreciation	0.00	0.00
O&M Expenses	248.62	259.06
Interest on Working Capital	73.10	74.76
Total	2312.67	2294.24

Asset-3

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	1219.38	1219.38
Interest on Loan	815.63	665.19
Return on Equity	2565.69	2565.69
Advance against Depreciation	954.22	858.61
O&M Expenses	894.47	930.98
Interest on Working Capital	187.62	188.36
Total	6637.01	6428.22

Asset-4

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	587.57	587.57
Interest on Loan	447.68	347.55
Return on Equity	987.08	987.08
Advance against Depreciation	792.30	709.58
O&M Expenses	237.33	247.19
Interest on Working Capital	88.22	87.28
Total	3140.18	2966.26

Asset-5

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	371.86	371.86
Interest on Loan	306.83	238.20
Return on Equity	676.59	676.59
Advance against Depreciation	573.86	517.17
O&M Expenses	109.51	114.23
Interest on Working Capital	59.08	58.39
Total	2097.72	1976.43



14. As discussed above, the Petitioner has claimed the following revised transmission charges in respect of the transmission system with effect from 1.4.2007:

Asset-1

(₹ in lakh)		
Particulars	2007-08	2008-09
Depreciation	214.68	214.68
Interest on Loan	99.47	87.76
Return on Equity	575.36	575.36
Advance against Depreciation	0.00	0.00
O&M Expenses	73.16	76.22
Interest on Working Capital	34.29	35.18
Total	996.95	989.21

Asset-2

(₹ in lakh)		
Particulars	2007-08	2008-09
Depreciation	500.46	500.46
Interest on Loan	223.76	197.43
Return on Equity	1279.40	1279.40
Advance against Depreciation	0.00	0.00
O&M Expenses	248.62	259.06
Interest on Working Capital	73.32	75.05
Total	2325.56	2311.41

Asset-3

(₹ in lakh)		
Particulars	2007-08	2008-09
Depreciation	1219.38	1219.38
Interest on Loan	815.42	665.27
Return on Equity	2565.69	2565.69
Advance against Depreciation	954.22	858.62
O&M Expenses	894.47	930.98
Interest on Working Capital	192.60	193.65
Total	6641.79	6433.59

Asset-4

(₹ in lakh)		
Particulars	2007-08	2008-09
Depreciation	587.57	587.57
Interest on Loan	447.68	347.55
Return on Equity	987.08	987.08
Advance against Depreciation	792.30	709.58
O&M Expenses	237.33	247.19
Interest on Working Capital	88.22	87.28
Total	3140.18	2966.25



Asset-5

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	371.86	371.86
Interest on Loan	306.83	238.20
Return on Equity	676.59	676.59
Advance against Depreciation	573.86	517.17
O&M Expenses	109.51	114.23
Interest on Working Capital	59.08	58.39
Total	2097.73	1976.44

15. We have considered the Petitioner's claim. The transmission charges allowed in respect of the transmission assets for 2007-09 tariff period are being revised based on the following:

- a. The admitted capital cost and ACE approved by the Commission for 2004-09 period are as follows:

Asset-1

Admitted Capital Cost as on 1.4.2004	ACE					Admitted Capital Cost as on 31.3.2009
	2004-05	2005-06	2006-07	2007-08	2008-09	
8219.37	0.00	0.00	0.00	0.00	0.00	8219.37

Asset-2

Admitted Capital Cost as on 1.4.2004	ACE					Admitted Capital Cost as on 31.3.2009
	2004-05	2005-06	2006-07	2007-08	2008-09	
18171.56	0.00	0.00	0.00	0.00	0.00	18171.56

Asset-3

Admitted Capital Cost as on 1.4.2004	ACE					Admitted Capital Cost as on 31.3.2009
	2004-05	2005-06	2006-07	2007-08	2008-09	
43985.64	0.00	6.30	0.00	0.00	0.00	43991.94

Asset-4

Admitted Capital Cost as on 1.4.2004	ACE					Admitted Capital Cost as on 31.3.2009
	2004-05	2005-06	2006-07	2007-08	2008-09	
21109.68	0.00	0.00	0.00	0.00	0.00	21109.68



Asset-5

Admitted Capital Cost as on 1.4.2004	ACE					Admitted Capital Cost as on 31.3.2009
	2004-05	2005-06	2006-07	2007-08	2008-09	
14469.44	0.00	0.00	0.00	0.00	0.00	14469.44

b. The composition of capital cost approved by the Commission vide order dated 7.9.2009 in Petition No. 87/2006 for Asset-1, Asset-2 and Asset-3 and order dated 15.5.2009 in Petition No. 75/2008 for Asset-4 and Asset-5 is as follows:

Asset-1

Funding	As on 1.4.2004 (₹ in lakh)	Debt: Equity Ratio as on 1.4.2004 (in %)	ACE	As on 31.3.2009 (₹ in lakh)	Debt:Equity Ratio as on 31.3.2009 (in %)
			2004-09 (₹ in lakh)		
Debt	4109.69	50.00	0.00	4109.69	50.00
Equity	4109.69	50.00	0.00	4109.69	50.00
Total	8219.37	100.00	0.00	8219.37	100.00

Asset-2

Funding	As on 1.4.2004 (₹ in lakh)	Debt: Equity Ratio as on 1.4.2004 (in %)	ACE	As on 31.3.2009 (₹ in lakh)	Debt:Equity Ratio as on 31.3.2009 (in %)
			2004-09 (₹ in lakh)		
Debt	9033.00	49.71	0.00	9033.00	49.71
Equity	9138.56	50.29	0.00	9138.56	50.29
Total	18171.56	100.00	0.00	18171.56	100.00

Asset-3

Funding	As on 1.4.2004 (₹ in lakh)	Debt: Equity Ratio as on 1.4.2004 (in %)	ACE	As on 31.3.2009 (₹ in lakh)	Debt:Equity Ratio as on 31.3.2009 (in %)
			2004-09 (₹ in lakh)		
Debt	25661.18	58.34	4.41	25665.59	58.34
Equity	18324.46	41.66	1.89	18326.35	41.66
Total	43985.64	100.00	6.30	43991.94	100.00

Asset-4

Funding	As on 1.4.2004 (₹ in lakh)	Debt: Equity Ratio as on 1.4.2004 (in %)	ACE	As on 31.3.2009 (₹ in lakh)	Debt:Equity Ratio as on 31.3.2009 (in %)
			2004-09 (₹ in lakh)		
Debt	14059.09	66.60	0.00	14059.09	66.60
Equity	7050.59	33.40	0.00	7050.59	33.40
Total	21109.68	100.00	0.00	21109.68	100.00



Asset-5

Funding	As on 1.4.2004 (₹ in lakh)	Debt: Equity Ratio as on 1.4.2004 (in %)	ACE	As on 31.3.2009 (₹ in lakh)	Debt: Equity Ratio as on 31.3.2009 (in %)
			2004-09 (₹ in lakh)		
Debt	9636.67	66.60	0.00	9636.67	66.60
Equity	4832.77	33.40	0.00	4832.77	33.40
Total	14469.44	100.00	0.00	14469.44	100.00

- c. ACE of ₹245.31 lakh during 2000-01 and ₹943.00 lakh during 2003-04 i.e. from COD to till 31.3.2004 w.r.t. Asset-3 was there, due to which the maintenance spares as on 1.4.2004 are revised for calculating IWC.
- d. Weighted Average Rate of Interest (WAROI) on actual loan is derived from order dated 7.9.2009 in the Petition No. 87/2006 and order dated 15.5.2009 in the Petition No. 75/2008.
- e. Weighted Average Rate of Depreciation (WAROD), Rate of IWC and O&M Expenses as per order dated 7.9.2009 in the Petition No. 87/2006 and order dated 15.5.2009 in the Petition No. 75/2008.

16. In view of the above, the revised AFC allowed in respect of the transmission assets for 2007-09 tariff period are as follows:

Asset-1

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	214.68	214.68
Interest on Loan	99.47	87.76
Return on Equity	575.36	575.36
Advance against Depreciation	0.00	0.00
O&M Expenses	73.16	76.22
Interest on Working Capital	34.29	35.18
Total	996.95	989.20

Asset-2

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	500.46	500.46
Interest on Loan	223.76	197.43
Return on Equity	1279.40	1279.40
Advance against Depreciation	0.00	0.00



O&M Expenses	248.62	259.06
Interest on Working Capital	73.32	75.05
Total	2325.56	2311.41

Asset-3

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	1219.38	1219.38
Interest on Loan	815.63	665.19
Return on Equity	2565.69	2565.69
Advance against Depreciation	954.22	858.62
O&M Expenses	894.47	930.98
Interest on Working Capital	189.25	190.09
Total	6638.65	6429.95

Asset-4

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	587.57	587.57
Interest on Loan	447.68	347.55
Return on Equity	987.08	987.08
Advance against Depreciation	792.30	709.58
O&M Expenses	237.33	247.19
Interest on Working Capital	88.22	87.28
Total	3140.18	2966.26

Asset-5

(₹ in lakh)

Particulars	2007-08	2008-09
Depreciation	371.86	371.86
Interest on Loan	306.83	238.20
Return on Equity	676.59	676.59
Advance against Depreciation	573.86	517.17
O&M Expenses	109.51	114.23
Interest on Working Capital	59.08	58.39
Total	2097.73	1976.44

17. Annual Fixed Charges (AFC) allowed vide order dated 7.9.2009 in the Petition No. 87/2006 and order dated 15.5.2009 in the Petition No. 75/2008 for 2007-09 period, the revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:



Asset-1

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC allowed vide order dated 7.9.2009 in Petition No. 87/2006	993.10	983.94
AFC claimed by the Petitioner in the petition	996.95	989.21
AFC approved in the instant order	996.95	989.20

Asset-2

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC allowed vide order dated 7.9.2009 in Petition No. 87/2006	2312.67	2294.24
AFC claimed by the Petitioner in the petition	2325.56	2311.41
AFC approved in the instant order	2325.56	2311.41

Asset-3

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC allowed vide order dated 7.9.2009 in Petition No. 87/2006	6637.01	6428.22
AFC claimed by the Petitioner in the petition	6641.79	6433.59
AFC approved in the instant order	6638.65	6429.95

Asset-4

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC allowed vide order dated 15.5.2009 in Petition No. 75/2008	3140.18	2966.26
AFC claimed by the Petitioner in the petition	3140.18	2966.25
AFC approved in the instant order	3140.18	2966.26

Asset-5

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC allowed vide order dated 15.5.2009 in Petition No. 75/2008	2097.72	1976.43
AFC claimed by the Petitioner in the petition	2097.73	1976.44
AFC approved in the instant order	2097.73	1976.44

2009-14 Tariff Period

18. Asset-2 and Asset-3 were combined during 2009-14 period. The Commission vide order dated 23.11.2011 in the Petition No. 313/2010 approved the tariff for 2009-14 tariff period and subsequently vide order dated 29.1.2016 in the Petition No. 380/TT/2014 had trued-up the tariff allowed for 2009-14 tariff period as follows:



Asset-1

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	144.98	144.98	145.31	145.74	150.65
Interest on Loan	71.62	62.78	54.24	45.75	40.90
Return on Equity	767.43	795.57	796.76	797.29	812.67
O&M Expenses	138.80	146.76	155.17	164.02	173.34
Interest on Working Capital	27.45	28.25	28.53	28.81	29.60
Total	1150.27	1178.33	1180.01	1181.62	1207.17

Combined Asset-2&3

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	3213.62	3225.32	3235.74	1171.85	1187.66
Interest on Loan	673.55	474.59	287.39	152.32	90.83
Return on Equity	5131.70	5332.74	5349.06	5357.45	5441.65
O&M Expenses	1502.32	1588.39	1679.31	1775.29	1876.58
Interest on Working Capital	263.12	267.71	268.92	228.06	233.93
Total	10784.31	10888.75	10820.42	8684.97	8830.65

Asset-4

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1089.19	1089.19	1089.19	320.92	328.93
Interest on Loan	276.19	198.49	131.84	77.84	54.70
Return on Equity	1316.60	1364.87	1366.19	1366.19	1392.60
O&M Expenses	345.82	365.64	386.57	408.66	431.95
Interest on Working Capital	73.20	73.57	73.26	57.23	58.63
Total	3100.99	3091.77	3047.05	2230.84	2266.81

Asset-5

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	763.99	763.99	763.99	192.08	192.08
Interest on Loan	188.77	134.46	87.69	51.27	33.51
Return on Equity	902.45	935.54	936.44	936.44	947.73
O&M Expenses	134.63	142.36	150.52	159.11	168.13
Interest on Working Capital	45.40	45.35	44.80	32.55	32.86
Total	2035.24	2021.69	1983.44	1371.45	1374.31

19. The Petitioner has claimed the following revised transmission charges for the transmission system for the 2009-14 tariff period in this petition:



Asset-1

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	144.98	144.98	145.31	145.74	150.65
Interest on Loan	77.49	68.65	60.11	51.62	46.77
Return on Equity	767.43	795.57	796.76	797.29	812.67
O&M Expenses	138.80	146.76	155.17	164.02	173.34
Interest on Working Capital	27.57	28.38	28.65	28.94	29.72
Total	1156.28	1184.33	1186.00	1187.61	1213.16

Combined Asset-2&3

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	3213.62	3225.32	3235.74	1171.85	1187.66
Interest on Loan	692.74	493.39	306.18	170.16	107.36
Return on Equity	5131.70	5332.74	5349.06	5357.45	5441.65
O&M Expenses	1502.32	1588.39	1679.31	1775.29	1876.58
Interest on Working Capital	263.52	268.11	269.31	228.43	234.28
Total	10803.90	10907.94	10839.60	8703.18	8847.52

Asset-4

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1089.19	1089.19	1089.19	320.92	328.93
Interest on Loan	276.19	198.49	131.84	77.84	54.70
Return on Equity	1316.60	1364.87	1366.19	1366.19	1392.60
O&M Expenses	345.82	365.64	386.57	408.66	431.95
Interest on Working Capital	73.20	73.57	73.26	57.23	58.63
Total	3100.99	3091.76	3047.05	2230.84	2266.80

Asset-5

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	763.99	763.99	763.99	192.08	192.08
Interest on Loan	188.73	134.42	87.65	51.24	33.48
Return on Equity	902.45	935.54	936.44	936.44	947.73
O&M Expenses	134.63	142.36	150.52	159.11	168.13
Interest on Working Capital	45.40	45.34	44.80	32.55	32.86
Total	2035.20	2021.65	1983.39	1371.42	1374.28

20. We have considered the Petitioner's claim. The tariff is allowed w.r.t. the transmission assets on the basis of the following:

- a) The admitted capital cost and ACE approved by the Commission for 2009-14 period 29.1.2016 in the Petition No. 380/TT/2014 are as follows:



Asset-1

(₹ in lakh)

Admitted Capital Cost as on 1.4.2009	ACE	Decapitalisation	Admitted Capital Cost as on 31.3.2014
	2009-14	2009-14	
8219.37	213.53	2.51	8430.39

Combined Asset-2&3

(₹ in lakh)

Admitted Capital Cost as on 1.4.2009	ACE	Decapitalisation	Admitted Capital Cost as on 31.3.2014
	2009-14	2009-14	
62163.50	1184.94	24.58	63323.86

Asset-4

(₹ in lakh)

Admitted Capital Cost as on 1.4.2009	ACE	Decapitalisation	Admitted Capital Cost as on 31.3.2014
	2009-14	2009-14	
21109.68	338.31	0.00	21447.98

Asset-5

(₹ in lakh)

Admitted Capital Cost as on 1.4.2009	ACE	Decapitalisation	Admitted Capital Cost as on 31.3.2014
	2009-14	2009-14	
14469.44	0.00	0.00	14469.44

b) WAROI on actual derived from order dated 29.1.2016 in the Petition No. 380/TT/2014.

c) WAROD, Rate of IWC and O&M Expenses as per order dated 29.1.2016 in the Petition No. 380/TT/2014.

21. In view of above, the revised transmission charges allowed in respect of the transmission assets for 2009-14 tariff period are as follows:

Asset-1

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	144.98	144.98	145.31	145.74	150.65
Interest on Loan	77.49	68.65	60.11	51.62	46.77
Return on Equity	767.43	795.57	796.76	797.29	812.67
O&M Expenses	138.80	146.76	155.17	164.02	173.34
Interest on Working Capital	27.57	28.37	28.65	28.94	29.72
Total	1156.26	1184.32	1186.00	1187.61	1213.14

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Combined Asset-2&3

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	3213.62	3225.32	3235.74	1171.85	1187.66
Interest on Loan	692.74	493.39	306.18	170.16	107.35
Return on Equity	5131.70	5332.74	5349.06	5357.45	5441.65
O&M Expenses	1502.32	1588.39	1679.31	1775.29	1876.58
Interest on Working Capital	263.52	268.11	269.31	228.43	234.28
Total	10803.90	10907.94	10839.59	8703.18	8847.51

Asset-4

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1089.19	1089.19	1089.19	320.92	328.93
Interest on Loan	276.19	198.49	131.84	77.84	54.70
Return on Equity	1316.60	1364.87	1366.19	1366.19	1392.61
O&M Expenses	345.82	365.64	386.57	408.66	431.95
Interest on Working Capital	73.20	73.57	73.26	57.23	58.63
Total	3100.99	3091.77	3047.05	2230.84	2266.82

Asset-5

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	763.99	763.99	763.99	192.08	192.08
Interest on Loan	188.73	134.42	87.65	51.23	33.48
Return on Equity	902.45	935.54	936.44	936.44	947.74
O&M Expenses	134.63	142.36	150.52	159.11	168.13
Interest on Working Capital	45.40	45.34	44.80	32.55	32.86
Total	2035.20	2021.66	1983.40	1371.41	1374.30

22. AFC allowed in respect of the transmission assets vide order dated 29.1.2016 in Petition No. 380/TT/2014 for 2009-14 tariff period, the revised AFC claimed in the instant petition and AFC approved in the instant order are as follows:

Asset-1

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
AFC allowed vide order dated 29.11.2016 in Petition No. 380/TT/2014	1150.27	1178.33	1180.01	1181.62	1207.17
AFC claimed by the Petitioner in the petition	1156.28	1184.33	1186.00	1187.61	1213.16
AFC approved in the instant order	1156.26	1184.32	1186.00	1187.61	1213.14



Combined Asset-2&3

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
AFC allowed <i>vide</i> order dated 29.11.2016 in Petition No. 380/TT/2014	10784.31	10888.75	10820.42	8684.97	8830.65
AFC claimed by the Petitioner in the petition	10803.90	10907.94	10839.60	8703.18	8847.52
AFC approved in the instant order	10803.90	10907.94	10839.59	8703.18	8847.51

Asset-4

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
AFC allowed <i>vide</i> order dated 29.11.2016 in Petition No. 380/TT/2014	3100.99	3091.77	3047.05	2230.84	2266.81
AFC claimed by the Petitioner in the petition	3100.99	3091.76	3047.05	2230.84	2266.80
AFC approved in the instant order	3100.99	3091.77	3047.05	2230.84	2266.82

Asset-5

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
AFC allowed <i>vide</i> order dated 29.11.2016 in Petition No. 380/TT/2014	2035.24	2021.69	1983.44	1371.45	1374.31
AFC claimed by the Petitioner in the petition	2035.20	2021.65	1983.39	1371.42	1374.28
AFC approved in the instant order	2035.20	2021.66	1983.40	1371.41	1374.30

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

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

Asset-1

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	156.59	157.49	157.49	157.49	158.48
Interest on Loan	42.67	35.27	33.68	20.02	6.82
Return on Equity	819.89	824.60	824.18	824.18	827.24
O&M Expenses	157.35	162.66	168.02	173.58	179.37
Interest on Working Capital	32.15	32.40	32.65	32.65	32.76
Total	1208.65	1212.42	1216.02	1207.92	1204.67



Combined Asset-2&3

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1207.19	1218.71	1221.59	1222.42	1222.86
Interest on Loan	57.77	15.10	0.00	0.00	0.00
Return on Equity	5468.66	5506.60	5506.84	5507.66	5522.88
O&M Expenses	1719.98	1777.37	1836.24	1897.17	1960.15
Interest on Working Capital	250.01	253.34	256.31	259.72	263.56
Total	8703.61	8771.12	8820.98	8886.97	8969.45

Asset-4

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	337.39	337.39	337.39	337.39	337.39
Interest on Loan	41.71	21.95	8.54	2.41	0.00
Return on Equity	1403.60	1410.03	1409.32	1409.32	1413.11
O&M Expenses	394.81	408.03	421.52	435.51	449.96
Interest on Working Capital	62.84	63.27	63.69	64.32	65.15
Total	2240.35	2240.67	2240.46	2248.95	2265.61

Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	192.08	192.08	192.08	192.08	192.08
Interest on Loan	23.00	11.91	4.39	1.09	0.00
Return on Equity	948.43	952.78	952.30	952.30	954.86
O&M Expenses	151.81	156.96	162.12	167.49	173.07
Interest on Working Capital	35.17	35.30	35.40	35.62	35.96
Total	1350.49	1349.03	1346.29	1348.58	1355.97

24. The details of the trued-up IWC claimed by the Petitioner in respect of the transmission assets for 2014-19 tariff period are as follows:

Asset-1

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	13.11	13.56	14.00	14.47	14.95
Maintenance Spares	23.60	24.40	25.20	26.04	26.91
Receivables	201.44	202.07	202.67	201.32	200.78
Total Working Capital	238.15	240.03	241.87	241.83	242.64
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	32.15	32.40	32.65	32.65	32.76



Combined Asset-2&3

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	143.33	148.11	153.02	158.10	163.35
Maintenance Spares	258.00	266.61	275.44	284.58	294.02
Receivables	1450.60	1461.85	1470.16	1481.16	1494.91
Total Working Capital	1851.93	1876.57	1898.62	1923.84	1952.28
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	250.01	253.34	256.31	259.72	263.56

Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	32.90	34.00	35.13	36.29	37.50
Maintenance Spares	59.22	61.20	63.23	65.33	67.49
Receivables	373.39	373.44	373.41	374.83	377.60
Total Working Capital	465.51	468.64	471.77	476.45	482.59
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	62.84	63.27	63.69	64.32	65.15

Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	12.65	13.08	13.51	13.96	14.42
Maintenance Spares	22.77	23.54	24.32	25.12	25.96
Receivables	225.08	224.84	224.38	224.76	226.00
Total Working Capital	260.50	261.46	262.21	263.84	266.38
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	35.17	35.30	35.40	35.62	35.96

Capital Cost

25. The capital cost of the transmission assets has been calculated in accordance with Regulation 9(3) of the 2014 Tariff Regulations.

26. The capital cost of ₹8430.39 lakh for Asset-1, ₹63323.86 lakh for Combined Asset-2 and 3, ₹21447.99 lakh for Asset-4 and ₹14469.44 lakh for Asset-5 as on 31.3.2014 was admitted by the Commission vide order dated 29.1.2016 in the Petition No. 380/TT/2014 and the same has been considered as opening capital cost as on 1.4.2014 for truing up the tariff for 2014-19 tariff period.



Additional Capital Expenditure (“ACE”)

27. The Commission vide order dated 29.1.2016 in the Petition No. 380/TT/2014 allowed ACE of ₹36.63 lakh for Asset-1 and ₹447.23 lakh for Combined Asset-2 and 3 subject to true up on actual basis as follows:

Assets	Admitted Capital Cost as on 1.4.2014	ACE	Admitted Capital Cost as on 31.3.2019
		2014-15*	
Asset-1	8430.39	36.63	8467.02
Combined Asset- 2&3	63323.86	447.23	63771.09
Asset-4	21447.99	0.00	21447.99
Asset-5	14469.44	0.00	14469.44

* For Asset-1: ACE has been approved towards balance/retention payment against replacement of old PLCC and tower strengthening work. For Combined Asset-2&3: ACE has been approved towards tower strengthening work as approved in 15th NERPC and TCC meeting held on 20.8.2015.

28. The Petitioner in the instant true up petition has submitted ACE of ₹60.69 lakh w.r.t. Asset-1 during 2014-19 tariff period towards replacement of old PLCC and strengthening work of 400 kV D/C Kathalguri-Mariani Transmission Line and ₹467.73 lakh for the Combined Asset-2&3 during 2014-19 tariff period towards balance and retention payment against replacement of old PLCC and Tower strengthening work for LOC-288 of 400 kV D/C Bongaigaon-Balipara Transmission Line due to change in river course and wind zone as approved in 15th TCC and 15th NERPC meeting dated 21.8.2015 for the provision Expenditure against retention payment. The Petitioner has claimed ACE under Regulation 14(3)(vii) and 14(3)(ix) of the 2014 Tariff Regulations. The details of ACE claimed by the Petitioner are as follows:

Asset-1

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
8430.39	32.01	0.00	0.00	0.00	28.68	8491.08



Combined Asset-2&3

(₹ in lakh)

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
63323.86	351.59	83.56	18.86	8.81	4.91	63791.59

Asset-4

(₹ in lakh)

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
21447.99	0.00	0.00	0.00	0.00	0.00	21447.99

Asset-5

(₹ in lakh)

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
14469.44	0.00	0.00	0.00	0.00	0.00	14469.44

29. In response to the query regarding the claimed ACE of ₹60.69 lakh in respect of Asset-1 and of ₹467.73 lakh in respect of Combined Asset-2 and Asset-3 for true-up of 2014-19 tariff period against ₹36.63 lakh and ₹447.23 lakh respectively as approved by the Commission vide order dated 29.1.2016 in the Petition No. 380/TT/2014, the Petitioner vide affidavit dated 14.7.2021 has submitted that ACE incurred during 2014-19 is mainly on account of balance and retention payment and package-wise and vendor details are as follows:

Asset-1

(₹ in lakh)

Name of Contractor	Particulars	Year of ACE	Amount	Remarks
Sun Steel Industries (Pvt.) Limited	Transmission Line	2014-15	32.01	Balance & Retention Payment
		2018-19	28.68	
Total			60.69	



Combined Asset-2&3

(₹ in lakh)

Name of Contractor	Particulars	Year of ACE	Amount	Remarks
City Engineering	Transmission Line	2014-15	10.56	Balance & Retention Payment
Subin Das			7.48	
Sun Steel Industries (Pvt.) Ltd.			301.23	
Rutul Ali			14.42	Addition in Gross block
Sujit Nandy			17.90	
Total for 2014-15			351.59	
Selim Construction	Transmission Line	2015-16	0.31	Balance Payment
Rutul Ali			25.87	Addition in Gross block
Sujit Nandy			45.10	
ABB Limited			PLCC	12.28
Total for 2015-16			83.56	
Sun Steel Industries (Pvt.) Limited	Transmission Line	2016-17	0.09	Balance & Retention Payment
Rutul Ali			3.72	
Uttam Patar			15.05	
Total for 2016-17			18.86	
Rutul Ali	Transmission Line	2017-18	8.81	Balance Payment
Total for 2017-18			8.81	
Sujit Nandy	Transmission Line	2018-19	4.91	Balance Payment
Total for 2018-19			4.91	

30. Further in response to technical validation letter dated 30.6.2021, the Petitioner has submitted that the actual equity infused is as follows:

Assets	Year	ACE	Actual Deployment (₹ in lakh)		% of Deployment	
			Equity	Loan	Equity	Loan
Asset-1	2014-15	32.01	9.60	22.41	30.00	70.00
	2018-19	28.68	8.60	20.08	30.00	70.00
Combined Asset-2&3	2014-15	351.59	140.73	210.86	40.03	59.97
	2015-16	83.56	74.96	8.60	89.71	10.29
	2016-17	18.86	18.80	0.06	99.68	0.32
	2017-18	8.81	8.81	0.00	100.00	0.00
	2018-19	4.91	4.91	0.00	100.00	0.00

31. The Petitioner while computing AFC has considered the debt-equity in the ratio of 70:30 as per the 2014 tariff regulations and the same has been considered by the Commission.



32. We have considered the submissions made by the Petitioner. ACE towards the replacement of PLCC and tower strengthening work is approved in 15th TCC and 15th NERPC meeting held on 21.9.2015. The actual ACE claimed towards old PLCC and tower strengthening work towards 400 kV D/C Bongaigaon-Balipara transmission line towards Asset-1 and Combined Asset-2 and 3 is allowed under Regulation 14(3)(vii) and 14(3)(ix) of the 2014 Tariff Regulations. ACE allowed in respect of the transmission assets from 1.4.2014 to 31.3.2019 is as follows:

Asset-1

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost allowed as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
8430.39	32.01	0.00	0.00	0.00	28.68	8491.08

Combined Asset-2&3

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost allowed as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
63323.86	351.59	83.56	18.86	8.81	4.91	63791.59

Asset-4

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost allowed as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
21447.99	0.00	0.00	0.00	0.00	0.00	21447.99

Asset-5

Admitted Capital Cost as on 1.4.2014	ACE					Capital Cost allowed as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19	
14469.44	0.00	0.00	0.00	0.00	0.00	14469.44

Debt-Equity ratio

33. Debt-equity ratio has been allowed in accordance with Regulation 19(3) of the 2014 Tariff Regulations. Accordingly, debt-equity ratio for the period ending on



31.3.2014 has been considered for the purpose of determination of tariff and truing up of the tariff of the transmission assets for 2014-19 tariff period. The details of debt-equity ratio in respect of the transmission asset as on 1.4.2014 and as on 31.3.2019 of the transmission asset are as follows:

Asset-1

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	Debt-Equity Ratio as on 1.4.2014 (in %)	ACE		Capital Cost as on 31.3.2019 (₹ in lakh)	Debt-Equity Ratio as on 31.3.2019 (in %)
			(₹ in lakh)			
			2014-19 (₹ in lakh)	Debt-Equity Ratio for ACE 2014-19 (in %)		
Debt	4257.40	50.50	42.48	70.00	4299.89	50.64
Equity	4172.99	49.50	18.21	30.00	4191.19	49.36
Total	8430.39	100.00	60.69	100.00	8491.08	100.00

Combined Asset-2&3

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	Debt-Equity Ratio as on 1.4.2014 (in %)	ACE		Capital Cost as on 31.3.2019 (₹ in lakh)	Debt-Equity Ratio as on 31.3.2019 (in %)
			(₹ in lakh)			
			204-19 (₹ in lakh)	Debt-Equity Ratio for ACE 2014-19 (in %)		
Debt	35510.84	56.08	327.41	70.00	35838.25	56.18
Equity	27813.02	43.92	140.32	30.00	27953.34	43.82
Total	63323.86	100.00	467.73	100.00	63791.59	100.00

Asset-4

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	Debt-Equity Ratio as on 1.4.2014 (in %)	ACE		Capital Cost as on 31.3.2019 (₹ in lakh)	Debt-Equity Ratio as on 31.3.2019 (in %)
			(₹ in lakh)			
			2014-19 (₹ in lakh)	Debt-Equity Ratio for ACE		
Debt	14295.91	66.65	0.00	0.00	14295.91	66.65
Equity	7152.08	33.35	0.00	0.00	7152.08	33.35
Total	21447.99	100.00	0.00	0.00	21447.99	100.00

Asset-5

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	Debt-Equity Ratio as on 1.4.2014 (in %)	ACE		Capital Cost as on 31.3.2019 (₹ in lakh)	Debt-Equity Ratio as on 31.3.2019 (in %)
			(₹ in lakh)			
			2014-19 (₹ in lakh)	Debt-Equity Ratio for ACE		
Debt	9636.67	66.60	0.00	0.00	9636.67	66.60
Equity	4832.77	33.40	0.00	0.00	4832.77	33.40
Total	14469.44	100.00	0.00	0.00	14469.44	100.00



Depreciation

34. The transmission system has already completed 12 years of life before 31.3.2014. The Commission vide order dated 29.1.2016 in the Petition No. 380/TT/2014 considered the balance useful life of the Asset-1 as 17 years, Combined Asset-2 and 3 as 18 years, Asset-4 as 18 years and Asset-5 as 21 years as on 31.3.2014. Accordingly, depreciation has been calculated based on the remaining depreciable value to be recovered over the balance useful life. The Gross Block during 2014-19 tariff period has been depreciated at weighted average rate of depreciation (WAROD) and working of WAROD is at Annexure-1(A), Annexure-1(B), Annexure-1(C) and Annexure-1(D) for Asset-1, Combined Asset-2 and 3, Asset-4 and Asset-5 respectively. Thus, the trued-up depreciation allowed during 2014-19 period is as follows:

Asset-1

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	8430.39	8462.40	8462.40	8462.40	8462.40
ACE	32.01	0.00	0.00	0.00	28.68
Closing Gross Block	8462.40	8462.40	8462.40	8462.40	8491.08
Average Gross Block	8446.40	8462.40	8462.40	8462.40	8476.74
Weighted average rate of Depreciation (WAROD) (in %)	1.85	1.86	1.86	1.86	1.87
Balance useful life of the asset (Year)	17	16	15	14	13
Lapsed life at the beginning of the year (Year)	18	19	20	21	22
Depreciable Value	7601.76	7616.16	7616.16	7616.16	7629.07
Depreciation during the year	156.60	157.50	157.50	157.50	158.49
Aggregate Cumulative Depreciation at the end of the year	5096.22	5253.71	5411.21	5568.70	5727.19
Remaining Aggregate Depreciable Value at the end of the year	2505.54	2362.45	2204.95	2047.46	1901.87

Combined Asset-2&3



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	63323.86	63675.45	63759.01	63777.87	63786.68
ACE	351.59	83.56	18.86	8.81	4.91
Closing Gross Block	63675.45	63759.01	63777.87	63786.68	63791.59
Average Gross Block	63499.66	63717.23	63768.44	63782.28	63789.14
Freehold Land	51.75	51.75	51.75	51.75	51.75
Weighted average rate of Depreciation (WAROD) (in %)	1.90	1.91	1.92	1.92	1.92
Balance useful life of the asset (Year)	18	17	16	15	14
Lapsed life at the beginning of the year (Year)	14	15	16	17	18
Depreciable Value	57103.11	57298.93	57345.02	57357.47	57363.65
Depreciation during the year	1207.16	1218.68	1221.56	1222.39	1222.83
Aggregate Cumulative Depreciation at the end of the year	36581.37	37800.05	39021.62	40244.01	41466.84
Remaining Aggregate Depreciable Value at the end of the year	20521.74	19498.88	18323.41	17113.47	15896.81

Asset-4

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	21447.99	21447.99	21447.99	21447.99	21447.99
ACE	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	21447.99	21447.99	21447.99	21447.99	21447.99
Average Gross Block	21447.99	21447.99	21447.99	21447.99	21447.99
Freehold Land	113.89	113.89	113.89	113.89	113.89
Weighted average rate of Depreciation (WAROD) (in %)	1.57	1.57	1.57	1.57	1.57
Balance useful life of the asset (Year)	18	17	16	15	14
Lapsed life at the beginning of the year (Year)	14	15	16	17	18
Depreciable Value	19200.69	19200.69	19200.69	19200.69	19200.69
Depreciation during the year	337.39	337.39	337.39	337.39	337.39
Aggregate Cumulative Depreciation at the end of the year	13465.04	13802.43	14139.82	14477.21	14814.60
Remaining Aggregate Depreciable Value at the end of the year	5735.65	5398.26	5060.87	4723.48	4386.08



Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	14469.44	14469.44	14469.44	14469.44	14469.44
ACE	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	14469.44	14469.44	14469.44	14469.44	14469.44
Average Gross Block	14469.44	14469.44	14469.44	14469.44	14469.44
Weighted average rate of Depreciation (WAROD) (in %)	1.33	1.33	1.33	1.33	1.33
Balance useful life of the asset (Year)	21	20	19	18	17
Lapsed life at the beginning of the year (Year)	14	15	16	17	18
Depreciable Value	13022.50	13022.50	13022.50	13022.50	13022.50
Depreciation during the year	192.08	192.08	192.08	192.08	192.08
Aggregate Cumulative Depreciation at the end of the year	9180.96	9373.03	9565.11	9757.19	9949.26
Remaining Aggregate Depreciable Value at the end of the year	3841.54	3649.46	3457.39	3265.31	3073.23

35. The details of depreciation allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, as claimed by the Petitioner in the instant petition and true-up depreciation in the instant order are as follows:

Asset-1

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	156.72	157.75	157.75	157.75	157.75
Claimed by the Petitioner in the petition	156.59	157.49	157.49	157.49	158.48
Approved after true-up in this order	156.60	157.50	157.50	157.50	158.49

Combined Asset-2&3

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	1209.55	1221.39	1221.39	1221.39	1221.39



Claimed by the Petitioner in the petition	1207.19	1218.71	1221.59	1222.42	1222.86
Approved after true-up in this order	1207.16	1218.68	1221.56	1222.39	1222.83

Asset-4

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	337.39	337.39	337.39	337.39	337.39
Claimed by the Petitioner in the petition	337.39	337.39	337.39	337.39	337.39
Approved after true-up in this order	337.39	337.39	337.39	337.39	337.39

Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	192.08	192.08	192.08	192.08	192.08
Claimed by the Petitioner in the petition	192.08	192.08	192.08	192.08	192.08
Approved after true-up in this order	192.08	192.08	192.08	192.08	192.08

Interest on Loan (“IoL”)

36. The Petitioner has claimed the weighted average rate of IoL based on its actual loan portfolio and rate of interest. We have considered the submissions of the Petitioner. IoL has been calculated based on actual interest rate submitted by the Petitioner in accordance with Regulation 26 of the 2014 Tariff Regulations. The trued-up IoL approved in respect of the transmission asset is as follows:

Asset-1

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	4257.40	4279.81	4279.81	4279.81	4279.81
Cumulative Repayments up to Previous Year	3498.52	3655.12	3812.61	3970.11	4127.61
Net Loan-Opening	758.88	624.69	467.20	309.70	152.20
Additions due to ACE	22.41	0.00	0.00	0.00	20.08
Repayment during the year	156.60	157.50	157.50	157.50	158.49
Net Loan-Closing	624.69	467.20	309.70	152.20	13.79



Average Loan	691.79	545.94	388.45	230.95	83.00
Weighted Average Rate of Interest on Loan (in %)	6.1679	6.4599	8.6678	8.6678	8.2137
Interest on Loan	42.67	35.27	33.67	20.02	6.82

Combined Asset-2&3

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	35510.84	35756.96	35815.45	35828.65	35834.82
Cumulative Repayments up to Previous Year	33933.48	35140.64	35815.45	35828.65	35834.82
Net Loan-Opening	1577.36	616.31	0.00	0.00	0.00
Additions due to ACE	246.11	58.49	13.20	6.17	3.44
Repayment during the year	1207.16	674.80	13.20	6.17	3.44
Net Loan-Closing	616.31	0.00	0.00	0.00	0.00
Average Loan	1096.83	308.16	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan (in %)	5.2670	4.9011	4.3332	4.8495	4.8495
Interest on Loan	57.77	15.10	0.00	0.00	0.00

Asset-4

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	14295.91	14295.91	14295.91	14295.91	14295.91
Cumulative Repayments up to Previous Year	13127.66	13465.05	13802.44	14139.83	14295.91
Net Loan-Opening	1168.25	830.86	493.47	156.07	0.00
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Repayment during the year	337.39	337.39	337.39	156.07	0.00
Net Loan-Closing	830.86	493.47	156.07	0.00	0.00
Average Loan	999.55	662.16	324.77	78.04	0.00
Weighted Average Rate of Interest on Loan (in %)	4.1731	3.3154	2.6292	3.0855	4.0389
Interest on Loan	41.71	21.95	8.54	2.41	0.00

Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	9636.67	9636.67	9636.67	9636.67	9636.67
Cumulative Repayments up to Previous Year	8989.53	9181.61	9373.68	9565.76	9636.67
Net Loan-Opening	647.14	455.06	262.99	70.91	0.00
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Repayment during the year	192.08	192.08	192.08	70.91	0.00
Net Loan-Closing	455.06	262.99	70.91	0.00	0.00
Average Loan	551.10	359.03	166.95	35.46	0.00
Weighted Average Rate of Interest on Loan (in %)	4.1741	3.3162	2.6292	3.0855	4.0389
Interest on Loan	23.00	11.91	4.39	1.09	0.00



37. The details of IoL allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, as claimed by the Petitioner in the instant petition and true-up IoL in the instant order are as follows:

Asset-1

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	36.43	27.62	17.99	8.37	1.78
Claimed by the Petitioner in the petition	42.67	35.27	33.68	20.02	6.82
Approved after true-up in this order	42.67	35.27	33.67	20.02	6.82

Combined Asset-2&3

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	40.82	7.50	0.00	0.00	0.00
Claimed by the Petitioner in the petition	57.77	15.10	0.00	0.00	0.00
Approved after true-up in this order	57.77	15.10	0.00	0.00	0.00

Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	40.29	20.44	6.27	1.51	0.00
Claimed by the Petitioner in the petition	41.71	21.95	8.54	2.41	0.00
Approved after true-up in this order	41.71	21.95	8.54	2.41	0.00

Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	22.55	11.11	3.23	0.69	0.00
Claimed by the Petitioner in the petition	23.00	11.91	4.39	1.09	0.00
Approved after true-up in this order	23.00	11.91	4.39	1.09	0.00



Return on Equity (“RoE”)

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

Year	Claimed effective tax (in %)	Grossed-up RoE (in %) [(Base Rate)/(1-t)]
2014-15	21.018	19.625
2015-16	21.382	19.716
2016-17	21.338	19.705
2017-18	21.337	19.704
2018-19	21.549	19.758

39. The Commission vide order dated 27.4.2020 in Petition No.274/TT/2019 had arrived at the effective tax rate for the Petitioner based on the notified MAT rates and the same is as follows:

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

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

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



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

Asset-1

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	4172.99	4182.59	4182.59	4182.59	4182.59
Additions due to ACE	9.60	0.00	0.00	0.00	8.60
Closing Equity	4182.59	4182.59	4182.59	4182.59	4191.19
Average Equity	4177.79	4182.59	4182.59	4182.59	4186.89
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity	819.26	824.18	824.18	824.18	827.25

Combined Asset-2&3

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	27813.02	27918.50	27943.56	27949.22	27951.86
Additions due to ACE	105.48	25.07	5.66	2.64	1.47
Closing Equity	27918.50	27943.56	27949.22	27951.86	27953.34
Average Equity	27865.76	27931.03	27946.39	27950.54	27952.60
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity	5464.47	5503.81	5506.84	5507.65	5522.87

Asset-4

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	7152.08	7152.08	7152.08	7152.08	7152.08
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	7152.08	7152.08	7152.08	7152.08	7152.08
Average Equity	7152.08	7152.08	7152.08	7152.08	7152.08
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758



Return on Equity	1402.52	1409.32	1409.32	1409.32	1413.11
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Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	4832.77	4832.77	4832.77	4832.77	4832.77
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	4832.77	4832.77	4832.77	4832.77	4832.77
Average Equity	4832.77	4832.77	4832.77	4832.77	4832.77
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity	947.71	952.30	952.30	952.30	954.86

42. The details of RoE allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, as claimed by the Petitioner in the instant petition and trued-up RoE in the instant order are as follows:

Asset-1

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	819.42	820.50	820.50	820.50	820.50
Claimed by the Petitioner in the Petition	819.89	824.60	824.18	824.18	827.24
Approved after true-up in this order	819.26	824.18	824.18	824.18	827.25

Combined Asset-2&3

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	5467.51	5480.57	5480.57	5480.57	5480.57
Claimed by the Petitioner in the Petition	5468.66	5506.60	5506.84	5507.66	5522.88
Approved after true-up in this order	5464.47	5503.81	5506.84	5507.65	5522.87



Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	1402.56	1402.56	1402.56	1402.56	1402.56
Claimed by the Petitioner in the Petition	1403.60	1410.03	1409.32	1409.32	1413.11
Approved after true-up in this order	1402.52	1409.32	1409.32	1409.32	1413.11

Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	947.73	947.73	947.73	947.73	947.73
Claimed by the Petitioner in the Petition	948.43	952.78	952.30	952.30	954.86
Approved after true-up in this order	947.71	952.30	952.30	952.30	954.86

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

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

Asset-1

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
220 kV Bays:					
Number of Bays	1	1	1	1	1
Norms (₹ lakh/bays)	42.21	43.61	45.06	46.55	48.10
Line: D/C Twin/Triple Conductor					
Line Length (km)	162.864	162.864	162.864	162.864	162.864
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	157.35	162.66	168.02	173.58	179.37

Combined Asset-2&3

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV Bays:					
Number of Bays	15	15	15	15	15
Norms (₹ lakh/bays)	60.30	62.30	64.37	66.51	68.71
220 kV Bays:					
Number of Bays	7	7	7	7	7
Norms (₹ lakh/bays)	42.21	43.61	45.06	46.55	48.1
132 kV Bays:					



Number of Bays	3	3	3	3	3
Norms (₹ lakh/bays)	30.15	31.15	32.18	33.25	34.36
Line: S/C Single Conductor					
Line Length (km)	8.623	8.623	8.623	8.623	8.623
Norms (₹ lakh/bays)	0.202	0.209	0.216	0.223	0.230
Line: D/C Twin/Triple Conductor					
Line Length (km)	605.128	605.128	605.128	605.128	605.128
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	1719.98	1777.37	1836.24	1897.17	1960.15

Asset-4

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV Bays:					
Number of Bays	4	4	4	4	4
Norms (₹ lakh/bays)	60.30	62.30	64.37	66.51	68.71
Line: D/C Twin/Triple Conductor					
Line Length (km)	217.275	217.275	217.275	217.275	217.275
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	394.81	408.03	421.52	435.51	449.96

Asset-5

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Line: D/C Twin/Triple Conductor					
Line Length (km)	214.725	214.725	214.725	214.725	214.725
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	151.81	156.96	162.12	167.49	173.07

44. We have considered the submissions of the Petitioner. O&M Expenses are allowed in respect of the transmission assets as per the norms specified in the 2014 Tariff Regulations and are as follows:

Asset-1

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1 Number 220 kV line Bay of 400 kV kathalguri-Mariani					
Number of Bays	1	1	1	1	1
Norms (₹ lakh/bays)	42.21	43.61	45.06	46.55	48.10
Line: 400 kV kathalguri-Mariani D/C (Twin/Triple Conductor) Transmission Line					
Line Length (km)	162.864	162.864	162.864	162.864	162.864
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	157.35	162.66	168.02	173.58	179.37



Combined Asset-2&3

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV Bays:					
Number of Bays	15	15	15	15	15
Norms (₹ lakh/bays)	60.30	62.30	64.37	66.51	68.71
220 kV Bays:					
Number of Bays	7	7	7	7	7
Norms (₹ lakh/bays)	42.21	43.61	45.06	46.55	48.1
132 kV Bays:					
Number of Bays	3	3	3	3	3
Norms (₹ lakh/bays)	30.15	31.15	32.18	33.25	34.36
Line: S/C Single Conductor					
Line Length (km)	8.623	8.623	8.623	8.623	8.623
Norms (₹ lakh/bays)	0.202	0.209	0.216	0.223	0.230
Line: D/C Twin/Triple Conductor					
Line Length (km)	605.128	605.128	605.128	605.128	605.128
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	1719.99	1777.37	1836.24	1897.17	1960.15

Asset-4

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV Bays:					
Number of Bays	4	4	4	4	4
Norms (₹ lakh/bays)	60.30	62.30	64.37	66.51	68.71
Line: D/C Twin/Triple Conductor					
Line Length (km)	217.275	217.275	217.275	217.275	217.275
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	394.81	408.03	421.52	435.51	449.96

Asset-5

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Line: D/C Twin/Triple Conductor					
Line Length (km)	214.725	214.725	214.725	214.725	214.725
Norms (₹ lakh/bays)	0.707	0.731	0.755	0.780	0.806
Total O&M Expenses (₹ in lakh)	151.81	156.96	162.12	167.49	173.07

45. The details of O&M Expenses allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, claimed by the Petitioner in the instant petition and tried-up O&M Expenses in the instant petition are as follows:



Asset-1

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	157.35	162.66	168.02	173.58	179.37
Claimed by the Petitioner in the instant petition	157.35	162.66	168.02	173.58	179.37
Approved after true-up in this order	157.35	162.66	168.02	173.58	179.37

Combined Asset-2&3

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	1719.99	1777.37	1836.24	1897.17	1960.15
Claimed by the Petitioner in the instant petition	1719.99	1777.37	1836.24	1897.17	1960.15
Approved after true-up in this order	1719.99	1777.37	1836.24	1897.17	1960.15

Asset-4

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	394.81	408.03	421.52	435.51	449.96
Claimed by the Petitioner in the instant petition	394.81	408.03	421.52	435.51	449.96
Approved after true-up in this order	394.81	408.03	421.52	435.51	449.96

Asset-5

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	151.81	156.96	162.12	167.49	173.07
Claimed by the Petitioner in the instant petition	151.81	156.96	162.12	167.49	173.07
Approved after true-up in this order	151.81	156.96	162.12	167.49	173.07

Interest on Working Capital (“IWC”)

46. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and allowed as follows:



Asset-1

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses (O&M Expenses for one month)	13.11	13.56	14.00	14.47	14.95
Maintenance Spares (15% of O&M Expenses)	23.60	24.40	25.20	26.04	26.91
Receivables (Equivalent to two months of annual fixed cost)	201.34	202.00	202.67	201.32	200.78
Total Working Capital	238.05	239.95	241.88	241.82	242.63
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	32.14	32.39	32.65	32.65	32.76

Combined Asset-2&3

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses (O&M Expenses for one month)	143.33	148.11	153.02	158.10	163.35
Maintenance Spares (15% of O&M Expenses)	258.00	266.61	275.44	284.58	294.02
Receivables (Equivalent to two months of annual fixed cost)	1449.88	1461.37	1470.16	1481.16	1494.90
Total Working Capital	1851.22	1876.09	1898.62	1923.83	1952.27
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	249.91	253.27	256.31	259.72	263.56

Asset-4

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses (O&M Expenses for one month)	32.90	34.00	35.13	36.29	37.50
Maintenance Spares (15% of O&M Expenses)	59.22	61.20	63.23	65.33	67.49
Receivables (Equivalent to two months of annual fixed cost)	373.21	373.32	373.41	374.83	377.60
Total Working Capital	465.33	468.53	471.77	476.45	482.59
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	62.82	63.25	63.69	64.32	65.15

Asset-5

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses (O&M Expenses for one month)	12.65	13.08	13.51	13.96	14.42
Maintenance Spares (15% of O&M Expenses)	22.77	23.54	24.32	25.12	25.96



Receivables (Equivalent to two months of annual fixed cost)	224.96	224.76	224.38	224.76	225.99
Total Working Capital	260.38	261.38	262.21	263.84	266.38
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	35.15	35.29	35.40	35.62	35.96

47. The details of IWC allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, as claimed by the Petitioner in the instant petition and true-up IWC in the instant petition are as follows:

Asset-1

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
IWC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	32.00	32.14	32.21	32.30	32.47
Claimed by the Petitioner in the instant petition	32.15	32.40	32.65	32.65	32.76
Approved after true-up in this order	32.14	32.39	32.65	32.65	32.76

Combined Asset-2&3

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
IWC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	249.65	252.62	255.70	259.07	262.55
Claimed by the Petitioner in the instant petition	250.01	253.34	256.31	259.72	263.56
Approved after true-up in this order	249.91	253.27	256.31	259.72	263.56

Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
IWC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	62.79	63.06	63.48	64.14	64.91
Claimed by the Petitioner in the instant petition	62.84	63.27	63.69	64.32	65.15
Approved after true-up in this order	62.82	63.25	63.69	64.32	65.15



Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
IWC allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	35.13	35.16	35.27	35.50	35.80
Claimed by the Petitioner in the instant petition	35.17	35.30	35.40	35.62	35.96
Approved after true-up in this order	35.15	35.29	35.40	35.62	35.96

Approved annual fixed charges for 2014-19 tariff period

48. The trued-up Annual Fixed Charges (AFC) in respect of the transmission assets for 2014-19 tariff period are as follows:

Asset-1

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	156.60	157.50	157.50	157.50	158.49
Interest on Loan	42.67	35.27	33.67	20.02	6.82
Return on Equity	819.26	824.18	824.18	824.18	827.25
O&M Expenses	157.35	162.66	168.02	173.58	179.37
Interest on Working Capital	32.14	32.39	32.65	32.65	32.76
Total	1208.02	1212.00	1216.02	1207.92	1204.68

Combined Asset-2&3

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1207.16	1218.68	1221.56	1222.39	1222.83
Interest on Loan	57.77	15.10	0.00	0.00	0.00
Return on Equity	5464.47	5503.81	5506.84	5507.65	5522.87
O&M Expenses	1719.99	1777.37	1836.24	1897.17	1960.15
Interest on Working Capital	249.91	253.27	256.31	259.72	263.56
Total	8699.31	8768.24	8820.95	8886.93	8969.41

Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	337.39	337.39	337.39	337.39	337.39
Interest on Loan	41.71	21.95	8.54	2.41	0.00
Return on Equity	1402.52	1409.32	1409.32	1409.32	1413.11
O&M Expenses	394.81	408.03	421.52	435.51	449.96
Interest on Working Capital	62.82	63.25	63.69	64.32	65.15
Total	2239.26	2239.94	2240.46	2248.95	2265.61



Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	192.08	192.08	192.08	192.08	192.08
Interest on Loan	23.00	11.91	4.39	1.09	0.00
Return on Equity	947.71	952.30	952.30	952.30	954.86
O&M Expenses	151.81	156.96	162.12	167.49	173.07
Interest on Working Capital	35.15	35.29	35.40	35.62	35.96
Total	1349.75	1348.53	1346.28	1348.57	1355.96

49. The details of the Annual Transmission Charges in respect of the transmission assets allowed vide order dated 29.1.2016 in the Petition No. 380/TT/2014, as claimed by the Petitioner and approved after truing up in the instant order are as follows:

Asset-1

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	1201.92	1200.67	1196.48	1192.50	1191.86
AFC claimed by the Petitioner in the petition	1208.65	1212.42	1216.02	1207.92	1204.67
AFC approved in the instant order	1208.02	1212.00	1216.02	1207.92	1204.68

Combined Asset-2&3

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	8687.42	8739.46	8793.91	8858.20	8924.66
AFC claimed by the Petitioner in the petition	8703.61	8771.12	8820.98	8886.97	8969.45
AFC approved in the instant order	8699.31	8768.24	8820.95	8886.93	8969.41

Asset-4

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed vide order dated 29.1.2016 in Petition No. 380/TT/2014	2237.82	2231.45	2231.19	2241.09	2254.79
AFC claimed by the Petitioner in the petition	2240.35	2240.67	2240.46	2248.95	2265.61
AFC approved in the instant order	2239.26	2239.94	2240.46	2248.95	2265.61



Asset-5

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
AFC allowed <i>vide</i> order dated 29.1.2016 in Petition No. 380/TT/2014	1349.00	1343.04	1340.42	1343.49	1348.67
AFC claimed by the Petitioner in the petition	1350.49	1349.03	1346.29	1348.58	1355.97
AFC approved in the instant order	1349.75	1348.53	1346.28	1348.57	1355.96

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

50. The Petitioner has combined the transmission assets for 2019- 24 period and has claimed the combined tariff of the assets with Effective COD (E-COD) as 15.10.1999. The Petitioner has claimed the following transmission charges for 2019-24 period in respect of the Combined Asset:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1805.80	1806.40	1806.41	2093.88	1984.38
Interest on Loan	0.38	0.00	0.00	0.00	0.00
Return on Equity	8288.87	8289.35	8289.35	8290.78	8292.20
O&M Expenses	2244.08	2323.13	2404.45	2488.88	2574.75
Interest on Working Capital	249.61	253.58	257.13	263.06	266.74
Total	12588.74	12672.46	12757.34	13136.60	13118.07

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

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
WC for O&M Expenses	187.01	193.59	200.37	207.41	214.56
WC for Maintenance Spares	336.61	348.47	360.67	373.33	386.21
WC for Receivables	1547.80	1562.36	1572.82	1602.31	1612.88
Total Working Capital	2071.42	2104.42	2133.86	2183.05	2213.65
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	249.61	253.58	257.13	263.06	266.74



Effective Date of Commercial Operation (E-COD)

52. The Petitioner has stated that E-COD of the Combined Asset works out to be 15.10.1999. E-COD of the Combined Asset has been worked out based on the trued-up capital cost and COD of the individual assets which is as follows:

Assets	Capital Cost as on 31.3.2019 (₹ in lakh)	COD	Number of days from COD	Weight of cost	Weighted days
Asset-1	8491.08	1.8.1995	1705	7.85%	133.80
Combined Asset-2&3	63791.59	1.2.2000	60	58.96%	35.37
Asset-4	21447.99	1.4.2000	0	19.82%	0.00
Asset-5	14469.44	1.4.2000	0	13.37%	0.00
Total	108200.10				169.18
Effective COD (latest COD – total weighted days)				14.10.1999	

53. E-COD is used to determine the lapsed life of the project as a whole which works out as 19 (nineteen) years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019 from E-COD).

Weighted Average Life (“WAL”)

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

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

56. WAL has been determined based on the admitted capital cost of individual elements as on 31.3.2019 and their respective life as specified in the 2019 Tariff Regulations. The element-wise life as defined in the Tariff Regulations prevailing at the time of actual COD of individual assets has been ignored for this purpose. The life as



defined in the 2019 Tariff Regulations has been considered for determination of WAL. Accordingly, WAL of all the transmission assets commissioned during 1995-2000 has been worked out as 33 years as follows:

Particulars	Life (in years) (1)	Capital Cost as on 31.3.2019 (₹ in lakh) (2)	Weighted Cost (₹ in lakh) (3) = [(1)*(2)]	Weighted Average Life of Asset (in years) (4) = [(3)/(2)]
Building Civil Works & Colony	25	4662.64	116566.00	32.68 years (rounded off to 33 years)
Transmission Line	35	83330.78	2916577.30	
Sub Station	25	19680.15	492003.75	
PLCC	15	360.89	5413.35	
Total		108034.46	3530560.40	

57. WAL as on 1.4.2019 as determined above is applicable prospectively (i.e. for 2019-24 tariff period onwards) and no retrospective adjustment of depreciation in previous tariff period is required to be done. As discussed above, E-COD of the Combined Asset is 14.10.1999 and the lapsed life of the project as a whole works out as 19 years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019 from E-COD). Accordingly, WAL has been used to determine the remaining useful life as on 31.3.2019 to be 14 years.

Capital Cost

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

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

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

- (a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*



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

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

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

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

- (a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and



(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.

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

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

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

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

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

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

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

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

59. The Petitioner has claimed capital cost of ₹108200.10 lakh in respect of the Combined Asset and the same capital cost has been worked out by the Commission. Accordingly, ₹108200.10 lakh has been considered as opening capital cost in respect of the Combined Asset as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (ACE) and De-capitalisation

60. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provides as follows:

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

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

(a) Undischarged liabilities recognized to be payable at a future date;



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

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

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

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

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

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

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

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

61. The Petitioner has claimed ACE of ₹2314.26 lakh and de-capitalisation of ₹1617.35 lakh during 2019-20 and 2022-23 under Regulations 25(2)(c) of the 2019 Tariff Regulations (replacement of such asset or equipment after the cut-off date, which



has become necessary on account of obsolescence of technology). The Petitioner has submitted that ACE claimed during 2019-20 of ₹17.34 lakh is on account of expenditure towards balance/retention payment against tower strengthening work for LOC-288 of 400 kV D/C Bongaigaon-Balipara Transmission Line and ACE of ₹2296.92 lakh and de-capitalisation of ₹1617.35 lakh claimed during 2022-23 is for replacement of old and obsolete Isolator, CT, CVT, line protection panel at Misa Sub-stations. The Petitioner further submitted that due to ageing of Isolator, there is problem of misalignment, jamming, improper closing/opening, over travel, sluggishness in operating mechanism and hot spots. Frequent oil leakage in CT, DGA & tan Delta violation and hot spots are being routinely observed due to the ageing. In some cases, repairs from manufacturer are either not possible due to obsolesce (Transferred to live tank from dead tank) or techno-economically not beneficial. Further, the line protection and bus bar protection relays at Misa, Balipara and Bongiangoan sub-station are of static/electromechanical type and giving frequent problem and also obsolete. These need to be retrofitted with numerical type relays which may support latest communication protocol. The details as claimed by the Petitioner are summarised as follows:

Capital Cost as on 1.4.2019	ACE					De-capitalisation	Capital Cost as on 31.3.2024
	2019-20	2020-21	2021-22	2022-23	2023-24	2022-23	
108200.10	17.34	0.00	0.00	2296.92	0.00	1617.35	108897.01

62. The Petitioner vide affidavit dated 14.7.2021 has submitted that ACE projected during 2019-20 is on account of work completed/ to be completed as approved during 2014-19 and payment to be release as per contractual obligation. The vendor details of ACE during 2019-20 are as follows:



(₹ in lakh)

Name of Contractor	Particulars	Year	Amount	Remarks
Sujit Nandy	Transmission Line	2019-20	2.46	Balance Payment
Sun Steel Industries (Pvt.) Limited			1.18	
Rutul Ali			0.60	Addition in Gross block
Sujit Nandy			11.64	
ABB Limited	PLCC	2019-20	1.46	Balance Payment
Total			17.34	

63. As regards projected ACE during 2022-23, the Petitioner vide affidavit dated 14.7.2021 has submitted details for replacement of equipment as follows:

(A) Isolators (2 set)

(i) The isolators are of S&S power make and were commissioned in 1998. These are going to complete 25 years of service life by the end of tariff block 2019-24.

(ii) These isolators are mainly of horizontal double break (HDB) type and frequent problem of misalignment are being faced. Rusting has been observed in gear assembly and mechanism box. Due to these constraints, despite all efforts in maintaining isolators, frequent breakdown is being experienced. 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 sometimes getting opened in ON LOAD condition which is dangerous to system as well as to the operating personal.

(iii) Due to rusting, many MOM boxes got damaged leading to problem in components of MOM boxes and motorised operation of isolators are not possible. This leads to problem of improper indication, control, interlock and remote operation of isolators, which is not safe. Due to ageing the TBs inside the MOM boxes has become brittle and many times terminals comes in contact with boxes and creates DC earth fault, which is detrimental to the control and protection system.

(iv) Many times, even local operation also becomes difficult. Further, timely support is not available from OEM due to old design. Therefore, it is proposed to replace 2 sets of 220 kV Isolators at Misa.



(B) Current Transformer (CT-109 numbers)

(i) The CTs of BHEL/WSI make and going to complete 25 years service by the end of 2019-24 tariff period.

(ii) 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 CT's. Due to leakage in the CTs, there may be moisture ingress and failure of the CTs. The CTs are hermetically sealed type and major repairing of the same at site is not recommended. Manufacturer has also stopped manufacturing and repair works of these types of CTs. Therefore, repairing of the CTs at manufacturer works is also not techno economically viable. The relevant communication from the OEM has been submitted by the Petitioner. Therefore, 36 numbers CT at Bongaigaon, 48 numbers at Balipara and 25 numbers at Misa Sub-station are proposed to be replaced.

(C) Potential Transformers (PT-3 numbers)

(i) The potential transformers (TELK make) were commissioned in 1998 and going to complete 25 years of service by 2019-24 tariff period. Due to ageing leakage from multiple points are observed. In many cases oil seepage from the bottom of the tank, gauge or secondary terminal boxes are also observed. Due to ageing, the variation in secondary voltage is observed. PT plays a major role for metering and protection system. The variation in secondary voltage may result into improper metering and undesired tripping of transmission elements. The PTs are hermetically sealed equipment and repairing of this equipment at site level; is not possible. After 25 years of service repairing at manufacturing works is also not techno-economically viable.

(ii) A PT installed at Misa blasted in May, 2018 which caused consequential damage to nearby equipment and critical injury to one of the executive. The old PTs are potential threat to the healthiness of system. Therefore, to replace 3 number 220 kV PTs at Misa Sub-station is proposed.



(D) Replacement of Control panels and protection panels with SAS based C&R panel along with SCADA

(i) The panels were installed during 1998 and going to complete 25 years of service life by the end of 2019-24 tariff period.

(ii) The relays are of electromagnetic/ static type and obsolete. OEMs have itself phased out these models of relays and there is no spares support.

(iii) In case of non-availability of healthy spares, the relays are to be kept out of service to avoid mal operation and the only option is replacement.

(iv) Due to ageing, problem of mal operation/non-operation occurs because of sticking up of contacts and problem in the coils. Following are some examples of mal operation/ non-operation:

(a) The auto re-closure relays are electromechanical type and often fail to reclose after single pole tripping. It is very hard to diagnose and pinpoint the reason for failure of the relay to operate.

(b) The Carrier Direct Trip Lock Out relays and Auto reclose lock out relays often mal operate and it is very hard to diagnose and pinpoint the reason for mal operation.

(c) The contacts of the Bus Voltage selection relays often fail to make in, resulting is loss of secondary voltage to protection and metering circuits.

(v) These relays are not IEC 61850 compliant and also do not have DR facility resulting in difficulties in fault analysis.

(vi) The Cable, Wiring and Terminal Blocks inside both Control and 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.

(vii) The presently installed bus bar relays are of high impedance static type. Due to these static relays, difficulties are being faced in analysis of fault.



(viii) 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 and power cables are laid between central control room and switchyard equipment. Replacement of the cables may require long outage of the sub-station, which may not be feasible. Replacement of old C&R panels along with control and power 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 control and power cables and shall also comply with latest technical requirement. In this case, the outage of system can also be minimised. Therefore, to replace line protection panel, transformer and reactor protection panels and bus bar protection panels at Bongaigaon, Balipara and Misa Sub-station with SAS based C&R panel along with SCADA as per latest practice is proposed.

(E) 50 MVAR Bus Reactor at Bongaigaon

[Year of Manufacturing: 1987 (33 Years old)]

(i) The 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. is being carried out by the Petitioner's company 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 indicate degradation of solid insulation. M/s CPRI (Third party) was approached by the Petitioner's company to analyse the test results of said equipment and to know the condition of the equipment. The test results were analysed by CPRI and based on that, CPRI has recommended for replacement of the said unit.

(ii) The bus reactor plays a major role in controlling the system voltage of the station. Those reactors has already completed more than 25 years of useful service life and due to ageing chances of its failure is always high. In service 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, replacement of 50 MVAR bus reactor at Bongaigaon is proposed.



64. The Petitioner vide affidavit dated 14.7.2021 also submitted that ACE approval has been accorded by Director (Operations), POWERGRID and requested to consider the same for approval so that execution of work will be carried out keeping provisions in the budget which is approved by Board of Directors on annual basis.

65. We have considered the submissions of the Petitioner. ACE allowed/ not allowed is as follows:

a. The Petitioner has claimed ACE of ₹17.34 lakh towards balance and retention payment and the same is allowed.

b. It is observed that the Petitioner has proposed fresh ACE towards 2 sets of 220 kV Isolators at Misa Sub-station, 26 numbers of CTs at Bongaigaon Sub-station, 48 numbers of CTs at Balipara Sub-station and 25 numbers of CTs at Misa Sub-station, 3 numbers of 220 kV PTs at Misa Sub-station, replacement of line protection panel, transformer and Reactor protection panels, Bus bar protection panels at Bongaigaon, Balipara and Misa Sub-station with SAS based C&R panels along with SCADA. These items are of critical nature and their failure may affect the stability and reliability of the grid. As such, the replacement of these equipment and consequential ACE is approved under Regulation 25(2)(c) of the 2019 Tariff Regulations, subject to true-up on actual basis. The Petitioner is directed to submit the details of cost estimates and the actual cost of the replaced equipment Sub-station wise at the time of truing up.

c. It is further observed that the Petitioner has not submitted OEM Certificate in respect of the sub-station equipment which is sought to be replaced during 2019-24 tariff period. The Petitioner is directed to submit OEM Certificate in respect of sub-station equipment which are sought to be replaced along with actual cost details of the replaced equipment and cost details of the new equipment sub-station-wise at the time of truing up.

d. The Petitioner has proposed to replace 50 MVAR bus reactor at Bongaigaon Sub-station. The reactor is major element of the transmission system which is critical and is a high value element. So, we are of the view that if such



items are to be replaced, it is prudent to discuss in RPC and with the concerned beneficiaries. Accordingly, the projected ACE towards 50 MVAR bus reactor is not allowed at this stage. The Petitioner is directed to seek approval from RPC for the said proposed replacements and file a separate petition for ACE towards “ICTs and Reactors” for consideration by the Commission. The ACE claimed by the Petitioner of ₹1996.92 lakhs during 2022-23 does not contain item-wise expenditure. Therefore, we are not able to ascertain the capital cost claimed towards 50 MVAR bus reactor. Accordingly, due to non-availability of proposed cost towards 50 MVAR bus reactor, ACE of ₹300.00 lakh on an estimation basis towards 50 MVAR bus reactor has been disallowed. Similarly, due to non-availability of item-wise details for de-capitalisation of ₹1617.35 lakh claimed during 2022-23, de-capitalisation of full amount has been considered and allowed for 2022-23. However, the Petitioner is at liberty to furnish all the relevant details along with supporting documents corresponding to ACE and de-capitalisation at the time of truing up for the consideration of the Commission.

66. In view of the above, the details of ACE and de-capitalisation allowed with respect to the transmission system during 2019-24 tariff period are as follows:

Capital Cost as on 1.4.2019	ACE					De-capitalisation	Capital Cost as on 31.3.2024
	2019-20	2020-21	2021-22	2022-23	2023-24	2022-23	(₹ in lakh)
108200.10	17.34	0.00	0.00	1996.92	0.00	1617.35	108597.01

Debt-Equity ratio

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

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

Provided that:

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



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

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

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

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

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

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

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as ACE 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.”

68. Debt-equity ratio considered for the purpose of computation of tariff for the 2019-24 tariff period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. Debt-equity considered for the purpose of computation of tariff for 2019-24 tariff period is as follows:



Funding	Capital Cost as on 1.4.2019 (₹ in lakh)	(in %)	ACE 2019-24 (₹ in lakh)	(in %)	De-capitalisation 2019-24 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	64070.72	59.22	1409.98	70.00	943.40	58.33	64537.30	59.43
Equity	44129.38	40.78	604.28	30.00	673.95	41.67	44059.71	40.57
Total	108200.10	100.00	2014.26	100.00	1617.35	100.00	108597.01	100.00

Depreciation

69. 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 project or element thereof including communication project. In case of the tariff of all the units of a generating station or all elements of a transmission project including communication project 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 project 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 project, 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 project, weighted average life for the generating station of the transmission project 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.”

70. The transmission system has already completed more than 12 years before 1.4.2019. Accordingly, depreciation has been calculated based on the remaining depreciable value (up to 90% of existing gross block of the transmission system) to be recovered over the balance useful life. The Petitioner has claimed depreciation for the proposed ACE over the useful life. We are of the view that the replaced equipment are likely to provide service much beyond the useful life and, therefore, these assets need to be depreciated on normative basis. Hence, depreciation for ACE (new additions) is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations.



The working of WAROD is at Annexure-2 (A) (Existing Assets) and Annexure-2 (B) (New Assets). Depreciation allowed in respect of the Combined Asset for 2019-24 tariff period is as follows:

(₹ in lakh)

A. Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block (A)	108200.10	108200.10	108200.10	108200.10	106582.75
ACE (B)					
De-capitalisation (C)	0.00	0.00	0.00	1617.35	0.00
Closing Gross Block (D)= (A+B-C)	108200.10	108200.10	108200.10	106582.75	106582.75
Average Gross Block (E)= [(A+D)/2]	108200.10	108200.10	108200.10	107391.43	106582.75
Freehold Land	165.64	165.64	165.64	165.64	165.64
Weighted average rate of Depreciation (WAROD) (in %)	1.67	1.67	1.67	1.73	1.68
Depreciable Value	97231.01	97231.01	97231.01	96503.21	95775.40
Cumulative Depreciation at the beginning of the year	71957.90	73763.12	75568.34	77373.57	77916.69
Depreciation adjustment on account of de-capitalization	0.00	0.00	0.00	1315.53	0.00
Net Cumulative Depreciation after adjustment for de-capitalization	71957.90	73763.12	75568.34	76058.04	77916.69
Remaining Depreciation Value at the beginning of the year (F)	25273.11	23467.89	21662.67	20445.17	17858.71
Balance useful life of the asset (Year) (G)	14.00	13.00	12.00	11.00	10.00
Elapsed life (Year)	19.00	20.00	21.00	22.00	23.00
Depreciation (H)= (F/G)	1805.22	1805.22	1805.22	1858.65	1785.87
Cumulative Depreciation at the end of the year	73763.12	75568.34	77373.57	77916.69	79702.56
Remaining Depreciation recoverable at the end of the year	23467.89	21662.67	19857.45	18586.52	16072.84

(₹ in lakh)

B. New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block (A)	0.00	17.34	17.34	17.34	2014.26
Additional Capitalisation (B)	17.34	0.00	0.00	1996.92	0.00
Closing Gross Block (C)= (A+B)	17.34	17.34	17.34	2014.26	2014.26
Average Gross Block (D) = [(A+C)/2]	8.67	17.34	17.34	1015.80	2014.26
Weighted average rate of Depreciation (WAROD) (in %) (E)	5.37	5.37	5.37	5.28	5.28
Depreciable Value	7.80	15.61	15.61	914.22	1812.83
Cumulative Depreciation at the beginning of the year	0.00	0.47	1.40	2.33	55.98
Depreciation (F)= (D*E)	0.47	0.93	0.93	53.65	106.37



Cumulative Depreciation at the end of the year	0.00	1.40	2.33	55.98	162.35
Remaining Depreciation recoverable at the end of the year	7.34	14.68	13.74	858.24	1650.49

(₹ in lakh)

Total Depreciation (Existing and New Assets)	2019-20	2020-21	2021-22	2022-23	2023-24
Existing Assets (A)	1805.22	1805.22	1805.22	1858.65	1785.87
New Assets (B)	0.47	0.93	0.93	53.65	106.37
Total Depreciation (A+B)	1805.69	1806.15	1806.15	1912.30	1892.24

Interest on Loan (“IoL”)

71. 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.”*

72. The Weighted Average Rate of Interest on loan has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period may be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of truing up.

73. The Petitioner has claimed IoL for 2019-20 and not for the last four years in 2019-24 tariff period. As discussed above, depreciation for existing and new assets has been allowed separately. Similarly, IoL has been calculated separately for existing assets and new assets. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of the Combined Asset is as follows:

(₹ in lakh)					
Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	64070.72	64070.72	64070.72	64070.72	63127.32
Cumulative Repayments up to Previous Year	64056.93	64070.72	64070.72	64070.72	63127.32
Net Loan-Opening	13.79	-	-	-	-
Additions	-	-	-	-	-
De-capitalisation	-	-	-	943.40	-
Repayment during the year	13.79	-	-	-	-
Adjustment of cumulative repayment pertaining to the decapitalised asset	-	-	-	943.40	-
Net Loan-Closing	-	-	-	-	-
Average Loan	6.89	-	-	-	-
Weighted Average Rate of Interest on Loan (in %)	5.4563	5.6486	6.0272	7.0293	8.5583
Interest on Loan	0.38	-	-	-	-

(₹ in lakh)					
New assets	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	-	12.14	12.14	12.14	1409.98
Cumulative Repayments up to Previous Year	-	0.47	1.40	2.33	55.98
Net Loan-Opening	-	11.67	10.74	9.81	1354.01



Additions	12.14	-	-	1397.84	-
Repayment during the year	0.47	0.93	0.93	53.65	106.37
Net Loan-Closing	11.67	10.74	9.81	1354.01	1247.64
Average Loan	5.84	11.21	10.28	681.91	1300.82
Weighted Average Rate of Interest on Loan (in %)	5.4563	5.6486	6.0272	7.0293	8.5583
Interest on Loan	0.32	0.63	0.62	47.93	111.33

(₹ in lakh)

Total IoL (Existing and New Assets)	2019-20	2020-21	2021-22	2022-23	2023-24
Existing Assets (A)	0.38	-	-	-	-
New Assets (B)	0.32	0.63	0.62	47.93	111.33
Total IoL (A+B)	0.69	0.63	0.62	47.93	111.33

Return on Equity (“RoE”)

74. 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 cut-off date beyond the original scope excluding additional capitalization on 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:

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

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

Illustration-

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

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

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



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

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

75. 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 in respect of the Combined Asset is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	44129.38	44134.59	44134.59	44134.59	44059.71
Additions due to ACE	5.20	0.00	0.00	599.08	0.00
De-capitalisation	0.00	0.00	0.00	673.95	0.00
Closing Equity	44134.59	44134.59	44134.59	44059.71	44059.71
Average Equity	44131.98	44134.59	44134.59	44097.15	44059.71
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
Return on Equity	8288.87	8289.36	8289.36	8282.33	8275.29

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

76. O&M Expenses claimed by the Petitioner in respect of the Combined Asset for 2019-24 tariff period are as follows:

(₹ in lakh)					
Details	2019-20	2020-21	2021-22	2022-23	2023-24
19 Numbers 400 kV Sub-station Bays	610.85	632.32	654.55	677.54	701.29
8 Numbers 220 kV Sub-station Bays	180.08	186.40	192.95	199.68	206.72



3 Numbers 132 kV and below Sub-station Bays	48.24	49.92	51.69	53.49	55.38
3 Numbers 105 MVA 400 kV Sub-station ICTs	338.31	350.61	362.88	376.11	388.41
8.623 km Single Circuit (Single Conductor)	2.17	2.24	2.33	2.41	2.49
1199.992 km Double Circuit (Twin Conductor)	1057.18	1094.39	1132.79	1172.40	1213.21
PLCC (2% of ₹362.35 lakh)	7.25	7.25	7.25	7.25	7.25
Total	2244.08	2323.13	2404.45	2488.88	2574.75

77. The norms specified under Regulation 35(3)(a) of the 2019 Tariff Regulations provides as follows:

“35. Operation and Maintenance Expenses:

...

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
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					
<i>HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)</i>	834	864	894	925	958
<i>Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)</i>	1,666	1,725	1,785	1,848	1,913
<i>500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)</i>	2,252	2,331	2,413	2,498	2,586
<i>±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)</i>	2,468	2,555	2,645	2,738	2,834
<i>±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)</i>	1,696	1,756	1,817	1,881	1,947
<i>±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)</i>	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;*
- ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;*
- iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);*
- iv. the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and*
- vi. the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.*



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

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

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

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

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

79. O&M Expenses have been worked out as per the as per the norms specified in the 2019 Tariff Regulations and the same is as follows:

	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses					
19 Numbers of 400 kV Sub-station 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
8 Numbers of 220 kV Sub-station bays					
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
Total	180.08	186.40	192.96	199.68	206.72
3 Numbers of 132 kV and below Sub-station bays					
Norms (₹ lakh/Bay)	16.08	16.64	17.23	17.83	18.46
Total	48.24	49.92	51.69	53.49	55.38
8.623 km S/C (Single Conductor)					
Norms (₹ lakh/km)	0.252	0.26	0.27	0.279	0.289
Total	2.17	2.24	2.33	2.41	2.49
1199.992 km D/C (Twin/Triple Conductor)					
Norms (₹ lakh/km)	0.881	0.912	0.944	0.977	1.011
Total	1057.19	1094.39	1132.79	1172.39	1213.19
3 Numbers of 105 MVA 400 kV Sub-station ICT					
Norms (₹ lakh/MVA)	0.358	0.371	0.384	0.398	0.411
Total	338.31	350.60	362.88	376.11	388.40
Total O&M Expenses allowed (₹ in lakh)	2236.85	2315.87	2397.20	2481.62	2567.47

Interest on Working Capital (“IWC”)

80. Regulation 34(1)(c), Regulation 34(3), Regulation 34(4) and Regulation 3(7) of the 2019 Tariff Regulations provide 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;”

81. 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%.

82. 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, ROI for 2020-21 has been considered as 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) whereas ROI for 2021-22 onwards has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon 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)	186.40	192.99	199.77	206.80	213.96
Working Capital for Maintenance Spares (15% of O&M Expenses)	335.53	347.38	359.58	372.24	385.12
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	1546.89	1559.37	1567.81	1596.90	1607.96
Total Working Capital	2068.82	2099.74	2127.16	2175.95	2207.04
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	249.29	236.22	223.35	228.47	231.74



Annual Fixed Charges of 2019-24 Tariff Period

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

	(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1805.69	1806.15	1806.15	1912.30	1892.24
Interest on Loan	0.69	0.63	0.62	47.93	111.33
Return on Equity	8288.87	8289.36	8289.36	8282.33	8275.29
O&M Expenses	2236.85	2315.87	2397.20	2481.62	2567.47
Interest on Working Capital	249.29	236.22	223.35	228.47	231.74
Total	12581.39	12648.23	12716.68	12952.65	13078.07

Filing Fee and Publication Expenses

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

Licence Fee & RLDC Fees and Charges

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

Goods and Services Tax

86. 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.

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

Security Expenses

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

89. 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 wherein the Commission approved security expenses from 1.4.2019 to 31.3.2024. Accordingly, security expenses will be shared in terms of order dated 3.8.2021 in Petition No. 260/MP/2020. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.

Capital Spares

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

Sharing of Transmission Charges

91. During 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 system was governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2010. With effect from 1.11.2020, sharing of transmission charges shall be governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2020 (in short, “the 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 the respective Tariff Regulations and Sharing Regulations and shall be recovered from the concerned DICs through Bill 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.

92. To summarise:

(a) The revised Annual Fixed Charges (AFC) approved in respect of the transmission assets for 2007-09 tariff period as per the APTEL’s judgements are as follows:

Particulars	(₹ in lakh)	
	2007-08	2008-09
Asset-1	996.95	989.20
Asset-2	2325.56	2311.41
Asset-3	6638.65	6429.95
Asset-4	3140.18	2966.26
Asset-5	2097.73	1976.44

(b) The revised AFC approved in respect of the transmission assets for 2009-14 tariff period are as follows:



(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Asset-1	1156.26	1184.32	1186.00	1187.61	1213.14
Combined Asset- 2&3	10803.90	10907.94	10839.59	8703.18	8847.51
Asset-4	3100.99	3091.77	3047.05	2230.84	2266.82
Asset-5	2035.20	2021.66	1983.40	1371.41	1374.30

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	1208.02	1212.00	1216.02	1207.92	1204.68
Combined Asset- 2&3	8699.31	8768.24	8820.95	8886.93	8969.41
Asset-4	2239.26	2239.94	2240.46	2248.95	2265.61
Asset-5	1349.75	1348.53	1346.28	1348.57	1355.96

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

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Annual Fixed Charges	12581.39	12648.23	12716.68	12952.65	13078.07

93. The Annexure-1 and Annexure-2 given hereinafter shall form part of the order.

94. This order disposes of Petition No. 274/TT/2020 in terms of the above discussion and findings.

sd/
(P. K. Singh)
Member

sd/
(Arun Goyal)
Member

sd/
(P. K. Pujari)
Chairperson



Annexure- 1(A)

2014-19 Capital Expenditure	Capital Cost as on 1.4.2014/ COD (₹ in lakh)	ACE (₹ in lakh)						Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Depreciation as per Regulations (₹ in lakh)				
		2014-15	2015-16	2016-17	2017-18	2018-19	Total			2014-15	2015- 16	2016- 17	2017- 18	2018-19
Transmission Line	8149.28	32.01	0.00	0.00	0.00	28.68	60.69	8209.97	5.28%	Spreading over balance useful life				
Sub Station	235.57	0.00	0.00	0.00	0.00	0.00	0.00	235.57	5.28%					
PLCC	45.54	0.00	0.00	0.00	0.00	0.00	0.00	45.54	6.33%					
Total	8430.39	32.01	0.00	0.00	0.00	0.00	28.68	60.69	8491.08	156.60	157.50	157.50	157.50	158.49
Average Gross Block (₹ in lakh)										8446.40	8462.40	8462.40	8462.40	8476.74
Remaining Depreciable Value (₹ in lakh)										2662.14	2519.94	2362.45	2204.95	2060.36
Balance life (in years)										17.00	16.00	15.00	14.00	13.00
Weighted Average Rate of Depreciation (in %)										1.85%	1.86%	1.86%	1.86%	1.87%

Annexure- 1(B)



2014-19	Capital Cost as on 1.4.2014/ COD (₹ in lakh)	ACE (₹ in lakh)						Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Depreciation as per Regulations (₹ in lakh)					
Capital Expenditure		2014-15	2015-16	2016-17	2017-18	2018-19	Total			2014-15	2015-16	2016-17	2017-18	2018-19	
Land – Freehold	51.75	0.00	0.00	0.00	0.00	0.00	0.00	51.75	-	Spreading over balance useful life					
Building Civil Works & Colony	3643.54	0.00	0.00	0.00	0.00	0.00	0.00	3643.54	3.34%						
Transmission Line	45212.94	351.59	71.28	18.86	8.81	4.91	455.45	45668.39	5.28%						
Sub Station	14149.42	0.00	0.00	0.00	0.00	0.00	0.00	14149.42	5.28%						
PLCC	266.21	0.00	12.28	0.00	0.00	0.00	12.28	278.49	6.33%						
Total	63323.86	351.59	83.56	18.86	8.81	4.91	467.73	63791.59		1207.16	1218.68	1221.56	1222.39	1222.83	
										Average Gross Block (₹ in lakh)	63499.66	63717.23	63768.44	63782.28	63789.14
										Remaining Depreciable Value (₹ in lakh)	21728.90	20717.56	19544.97	18335.86	17119.64
										Balance life (in years)	18.00	17.00	16.00	15.00	14.00
										Weighted Average Rate of Depreciation (in %)	1.90%	1.91%	1.92%	1.92%	1.92%



Annexure-1(C)

2014-19 Capital Expenditure	Capital Cost as on 1.4.2014/ COD (₹ in lakh)	ACE (₹ in lakh)						Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Depreciation as per Regulations (₹ in lakh)				
		2014-15	2015-16	2016-17	2017-18	2018-19	Total			2014-15	2015-16	2016-17	2017-18	2018-19
Land – Freehold	113.89	0.00	0.00	0.00	0.00	0.00	0.00	113.89	-	Spreading over balance useful life				
Building Civil Works & Colony	1019.10	0.00	0.00	0.00	0.00	0.00	0.00	1019.10	3.34%					
Transmission Line	14982.98	0.00	0.00	0.00	0.00	0.00	0.00	14982.98	5.28%					
Sub Station	5295.16	0.00	0.00	0.00	0.00	0.00	0.00	5295.16	5.28%					
PLCC	36.86	0.00	0.00	0.00	0.00	0.00	0.00	36.86	6.33%					
Total	21447.99	0.00	0.00	0.00	0.00	0.00	0.00	21447.99		337.39	337.39	337.39	337.39	337.39
Average Gross Block (₹ in lakh)										21447.99	21447.99	21447.99	21447.99	21447.99
Remaining Depreciable Value (₹ in lakh)										6073.04	5735.65	5398.26	5060.87	4723.48
Balance life (in years)										18.00	17.00	16.00	15.00	14.00
Weighted Average Rate of Depreciation (in %)										1.57%	1.57%	1.57%	1.57%	1.57%



Annexure- 1(D)

2014-19	Capital Cost as on 1.4.2014/ COD (₹ in lakh)	ACE (₹ in lakh)						Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation as per Regulations	Depreciation as per Regulations (₹ in lakh)				
Capital Expenditure		2014-15	2015-16	2016-17	2017-18	2018-19	Total			2014-15	2015-16	2016-17	2017-18	2018-19
Transmission Line	14469.44	0.00	0.00	0.00	0.00	0.00	0.00	14469.44	5.28%	Spreading over balance useful life				
Total	14469.44	0.00	0.00	0.00	0.00	0.00	0.00	14469.44		192.08	192.08	192.08	192.08	192.08
									Average Gross Block (₹ in lakh)	14469.44	14469.44	14469.44	14469.44	14469.44
									Remaining Depreciable Value (₹ in lakh)	4033.62	3841.54	3649.46	3457.39	3265.31
									Balance life (in years)	21.00	20.00	19.00	18.00	17.00
									Weighted Average Rate of Depreciation (in %)	1.33%	1.33%	1.33%	1.33%	1.33%



Annexure-2 (A)

2019-24 Capital Expenditure	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	Projected De-Capitalisation (₹ in lakh)					Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations	Annual Depreciation as per Regulations (Post Completion of 12 years of Useful Life) (₹ in lakh)				
		2019-20	2020-21	2021-22	2022-23	2023-24			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	165.64	0.00	0.00	0.00	0.00	0.00	165.64	-	Spreading over balance useful life				
Land - Leasehold	-	0.00	0.00	0.00	0.00	0.00	-	3.34%					
Building Civil Works & Colony	4662.64	0.00	0.00	0.00	0.00	0.00	4662.64	3.34%					
Transmission Line	83330.78	0.00	0.00	0.00	0.00	0.00	83330.78	5.28%					
Sub Station	19680.15	0.00	0.00	0.00	1617.35	0.00	18062.80	5.28%					
PLCC	360.89	0.00	0.00	0.00	0.00	0.00	360.89	6.33%					
IT Equipment (Incl. Software)	-	0.00	0.00	0.00	0.00	0.00	-	15.00%					
Total	108200.10	0.00	0.00	0.00	1617.35	0.00	106582.75		1805.22	1805.22	1805.22	1858.65	1785.87
								Average Gross Block (₹ in lakh)	108200.10	108200.10	108200.10	107391.43	106582.75
								Remaining Depreciable Value (₹ in lakh)	25273.11	23467.89	21662.67	20445.17	17858.71
								Balance life (in years)	14.00	13.00	12.00	11.00	10.00
								Weighted Average Rate of Depreciation (in %)	1.67%	1.67%	1.67%	1.73%	1.68%



Annexure- 2 (B)

2019-24 Capital Expenditure	Capital Cost as on 1.4.2019 (₹ in lakh)	Projected ACE (₹ in lakh)			Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of Depreciation as per Regulations	Depreciation as per Regulations (₹ in lakh)				
		2019-20	2022-23	Total			2019-20	2020-21	2021-22	2022-23	2023-24
Transmission Line	0.00	15.88	0.00	15.88	15.88	5.28%	0.42	0.84	0.84	0.84	0.84
Sub Station	0.00	0.00	1996.92	1996.92	1996.92	5.28%	-	-	-	52.72	105.44
PLCC	0.00	1.46	0.00	1.46	1.46	6.33%	0.05	0.09	0.09	0.09	0.09
Total	0.00	17.34	1996.92	2014.26	2014.26		0.47	0.93	0.93	53.65	106.37
Average Gross Block (₹ in lakh)							8.67	17.34	17.34	1015.80	2014.26
Weighted Average Rate of Depreciation (in %)							5.37%	5.37%	5.37%	5.28%	5.28%

