

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 315/TT/2020

Coram:

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

Date of order: 26.08.2021

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and revision of transmission tariff for 2004-09 and 2009-14 periods and truing up of transmission tariff of 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff for 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for "ATS of Kopili-Khandong (additional transmission Gohpur-Itanagar)" in the North Eastern Region.

And in the matter of:

Power Grid Corporation of India Limited,
SAUDAMINI, Plot No-2,
Sector-29, Gurgaon-122001 (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 D.K. Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Shri A.K. Verma, 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 periods; truing up of transmission tariff for the period from 1.4.2014 to 31.3.2019 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”); and for determination of tariff under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for the period from 1.4.2019 to 31.3.2024 in respect of “ATS of Kopili-Khandong (additional transmission Gohpur-Itanagar) in the North Eastern Region (hereinafter referred to as “the transmission asset”).



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 adjust the cumulative depreciation by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful life and to recover the unrecovered depreciation in case of Asset separately on account of de-capitalization.

7) Allow the petitioner to 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.

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"

Backdrop of the case

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

a) The transmission asset was transferred from NTPC, NHPC, NLC and NEEPCO to the Petitioner on 1.4.1992 which included 33 kV transmission lines in NER at a book value of ₹4901.65 lakh which is also the admitted capital cost as per Uniform Common Pooled Transmission Tariff (UCPTT). The scope of the work covered in the transmission asset is as follows:

Transmission lines:

- (i) 132 kV S/C Khandong-Kopili Transmission line
- (ii) 220 kV D/C Kopili- Misa Transmission line
- (iii) 220 kV D/C Misa-Samaguri Transmission line
- (iv) 132 kV S/C Khandong-khleiriat Transmission line
- (v) 132 kV S/C Haflong-Jiribam Transmission line
- (vi) 132 kV S/C Khandong- Haflong Transmission line
- (vii) 132 kV S/C Jiribam-Aizwal Transmission line
- (viii) 132 kV S/C Aizwal-Zeamabwk Transmission line
- (ix) 132 kV S/C Aizwal-kumarghat Transmission line
- (x) 132 kV S/C Gohpur-Itanagar Transmission line

Sub-station

- (i) 132 kV Jiribam Sub-station
 - 1 Number 132 kV Haflong bay
 - 1 Number 132 kV Aizwal bay
 - 1 Number 132 kV Palipool bay
 - 1 Number 132 kV ICT bay
 - 1 Number 132 kV Loktak I bay



(ii) 132 kV Aizwal Sub-station

- 1 Number 132 kV Jiribam bay
- 1 Number 132 kV Kumarghat bay
- 1 Number 132 kV Zemabawk bay

(iii) 132 kV Kumarghat Sub-station

- 1 Number 132 kV Aizwal bay
- 2 Numbers 132 kV ICT bays
- 1 Number 132 kV Agartala bay (Now PKB Bay)
- 1 Number 132 kV Kumarghat bay
- 1 Number 132 kV Manu bay

(iv) 132 kV Haflong Sub-station

- 1 Number 132 kV Jiribam bay
- 1 Number 132 kV Khandong bay
- 1 Number 132 kV ASEB bay

(v) 132 kV Nirjuli Sub-station

- 1 Number 132 kV Gohpur bay
- 1 Number each 132 kV ICT-I and ICT-II bays and 1 Number each 33 kV ICT-I and ICT-II bays
- 1 Number 132 kV Arunachal bay-I, II and III

(vi) 132 kV Gohpur Sub-station

- 1 Number 132 kV Nirjuli bay

(vii) 132 kV Khleriat Sub-station

- 1 Number 132 kV bay at Khleriat (Powergrid)

(viii) Samaguri Sub-station of ASEB

- 1 Number 220 kV Misa bay-I&II

b) In the North-Eastern Region (NER), UCPTT in terms of “paise per kWh” was being followed from 1991-92. The UCPTT rate adopted and applied in NER through mutual consent of the regional constituents did not conform to the



Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2001, applicable for the period from 1.4.2001 to 31.3.2004. However, the Commission vide order dated 1.1.2002 in Petition No. 40/2000 had provisionally approved UCPTT scheme up to 31.3.2004 for the transmission asset.

c) Further, vide order dated 27.4.2007 in Petition No. 90/2006, 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.”

d) Further, vide order dated 21.8.2009 in Petition No. 90/2006, the Commission directed the following:

“41. The petitioner has been paid UCPTT for the period up to 31.3.2007 based on various order of the Commission, and thereafter the transmission charges in accordance with the order dated 19.2.2008. The petitioner shall recover from the beneficiaries the additional transmission charges in three monthly instalments.”

e) Subsequently, vide order dated 16.1.2008 in Petition No. 85/2006, the Commission held that with effect from 1.4.2007, the transmission charges for all the transmission assets in 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”).

f) Accordingly, the transmission tariff for the period from 1.4.2007 to 31.3.2009 for the transmission system was determined based on admitted capital cost as per order dated 21.8.2009 in Petition No. 90/2006. The transmission tariff for the period from 1.4.2007 to 31.3.2009 was revised on account of refinancing of Government of India loan with LIC-III loan during 2007-08 and 2008-09 vide order dated 9.5.2011 in Petition No. 341/2010.



g) The transmission tariff was determined for the period from 1.4.2009 to 31.3.2014 vide order dated 13.8.2012 in Petition No. 334/2010. 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. 276/TT/2014.

h) The Petitioner has sought revision of transmission tariff approved for 2004-09 tariff period with effect from 1.4.2007 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) judgment dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and 13.6.2007 in Appeal No. 139 of 2006 and batch matters. The Petitioner has sought consequential revision of tariff allowed for 2009-14 tariff period, truing up of tariff of 2014-19 tariff period and determination of tariff for 2019-24 period in respect of the transmission asset.

i) APTEL, vide judgement dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters pertaining to generating stations of NTPC had considered 4 (four) issues. The issues considered and decisions of APTEL are given in the following table:

Sl. No.	Issue	APTEL's decision/direction
1	Whether APTEL can enquire into the validity of Regulations framed by the Commission	Challenge to the validity of Regulations framed by the Commission falls outside the purview of APTEL
2	Computation of interest on loan	In view of the order of the APTEL dated 14.11.2016 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005 and order dated 24.1.2007 passed in Appeal Nos. 81 to 87, 89 to 93 of 2005, computation of loan has to be based on loan repayment on normative basis. 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
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j) APTEL vide its judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters pertaining to generating stations of NTPC had considered 9 (nine) issues. The issues considered and the decisions of APTEL are given 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	The Commission is required to recalculate the loan outstanding as on 31.3.2004 based on loan repayment on normative basis.
II	Consequence of refinance of loan	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-capitalization 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 Appeals No.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.

k) 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.

l) Based on APTEL's judgments dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and 13.6.2007 in Appeal No. 139 of 2007 and batch matters, the Petitioner had sought revision of tariff of its transmission assets for 2001-04 and 2004-09 tariff periods in Petition No. 121/2007. The Commission, after taking into consideration the pendency of Appeals before the Hon'ble Supreme Court, adjourned the said petition sine die and directed that the same be revived after the disposal of the Civil Appeals by the Hon'ble Supreme Court.

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

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

o) The instant petition was heard on 8.6.2021 and in view of APTEL's judgment dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters along with judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters and the order of Hon'ble Supreme Court dated 10.4.2018, transmission tariff is being revised. Although, period-wise transmission tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods, suitable assumptions at certain places, if required, are being applied which are indicated.

4. The Respondents are 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 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 reply in the matter.

Re: Interest on Loan (IoL)

6. APTEL while dealing with the issue of computation of IoL, *vide* judgement dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters observed that IoL for the period from 1.4.1998 to 31.3.2001 shall be computed only on normative loan repayment as per its judgement dated 14.11.2006 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005. APTEL *vide* its judgement dated 14.11.2006 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005 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 the IoL liability for the period from 1.4.1998 to 31.3.2001. In view of the judgement of APTEL, interest allowed for 2004-09 period is to be revised on the basis of the normative debt repayment methodology.

Re: Additional Capital Expenditure (ACE)

7. APTEL *vide* its judgement dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters held that ACE after commercial operation date (COD) should also be considered for computation of maintenance spares. In view of the judgement of APTEL, 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.



Re: Depreciation

8. As regards depreciation, APTEL *vide* its judgement dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters observed that depreciation is an expense and it cannot be deployed for deemed repayment of loan and accordingly directed the Commission to compute the outstanding loan afresh. Accordingly, the outstanding loan allowed for the transmission asset for 2004-09 period is revised in the instant order.

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

10. The revision of transmission tariff allowed for 2004-09 period necessitates the revision of transmission tariff allowed for 2009-14 period, which is also being done in the present order. The implementation of the directions of APTEL in judgements 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 was kept pending in the case of the Petitioner awaiting the outcome of the Civil Appeals filed before the Hon'ble Supreme Court. Taking into consideration the facts of the case and keeping in view the interest of the consumers, we are of the view that the beneficiaries should not be burdened with the carrying cost for the difference in the tariff allowed earlier and allowed in the instant order for 2001-04, 2004-09 and 2009-14 tariff periods. Therefore, we direct that the Petitioner will neither claim nor pay any carrying cost from or to the beneficiaries for the difference, if any, in the tariff allowed earlier and the tariff being allowed in the instant order. Further, the said difference in tariff shall be recovered/paid over a period of six months from the date of issue of this order.



11. This order is issued considering the submissions made by the Petitioner vide affidavits dated 9.1.2020, 23.7.2020, and 18.6.2021.

12. The hearing in this matter was held on 8.6.2021 through video conference and order was reserved. Having heard the representatives of the Petitioner and 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

2007-09 Period

13. The Commission vide orders dated 27.4.2007 and 21.8.2009 in Petition No. 90/2006 and order dated 9.5.2011 in Petition No. 341/2010 had approved the following transmission charges in respect of the transmission asset for 2007-09 period:

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	149.55	149.60
Interest on Loan	14.10	1.62
Return on Equity	387.51	387.51
Advance against Depreciation	0.00	0.00
Interest on Working Capital	52.30	54.08
O&M Expenses	1117.24	1162.69
Total	1720.70	1755.50

14. The Petitioner has claimed the following revised transmission charges in respect of the transmission asset for 2007-09 period in the instant petition:

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	149.55	100.77
Interest on Loan	15.47	0.00
Return on Equity	387.51	387.51
Advance against Depreciation	0.00	0.00
Interest on Working Capital	52.56	53.46
O&M Expenses	1117.24	1162.69
Total	1722.33	1704.43



15. We have considered the Petitioner's claim. The tariff is revised in respect of the transmission asset for 2007-09 period on the basis of the following:

- a) The admitted capital cost of ₹5533.37 lakh for the transmission asset as on 1.4.2004 and ACE of ₹4.14 lakh during 2004-05.
- b) Weighted Average Rate of Interest (WAROI) on actual loan, Weighted Average Rate of Depreciation (WAROD), Rate of Interest on Working Capital (IWC) and O&M Expenses have been adopted from order dated 9.5.2011 in the Petition No. 341/2010.

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

Particulars	(₹ in lakh)	
	2007-08	2008-09
Depreciation	149.55	149.60
Interest on Loan	22.59	14.78
Return on Equity	387.51	387.51
Advance against Depreciation	0.00	0.00
Interest on Working Capital	52.69	54.57
O&M Expenses	1117.24	1162.69
Total	1729.58	1769.15

17. The Annual Fixed Charges (AFC) allowed in respect of the transmission asset for 2007-09 period vide orders dated 27.4.2007 and 21.8.2009 in Petition No. 90/2006 and order dated 9.5.2011 in the Petition No. 341/2010, the revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

Particulars	(₹ in lakh)	
	2007-08	2008-09
AFC approved vide order dated 27.4.2007 and 21.8.2009 in the Petition No. 90/2006 and order dated 9.5.2011 in the Petition No. 341/2010	1720.70	1755.50
AFC claimed by the Petitioner in the instant petition	1722.33	1704.43
Allowed after true-up in this order	1729.58	1769.15



2009-14 Period

18. The Commission *vide* order dated 13.8.2012 in Petition No. 334/2010 approved the tariff in respect of the transmission asset for 2009-14 period and subsequently *vide* order dated 29.1.2016 in the Petition No. 276/TT/2014 trued up the transmission tariff allowed for 2009-14 tariff period and the same is as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	100.77	100.77	106.46	119.56	135.61
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	516.88	535.82	540.75	550.06	567.17
Interest on Working Capital	58.49	61.49	64.47	67.87	71.64
O&M Expenses	911.93	963.95	1019.16	1077.88	1139.42
Total	1588.07	1662.02	1730.84	1815.38	1913.85

19. The Petitioner has claimed the following revised transmission charges in respect of the transmission asset for 2009-14 period in the instant petition:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	100.77	100.77	106.46	119.56	135.61
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	516.88	535.82	540.75	550.06	567.17
Interest on Working Capital	58.49	61.49	64.47	67.87	71.64
O&M Expenses	911.93	963.95	1019.16	1077.88	1139.42
Total	1588.07	1662.03	1730.84	1815.37	1913.84

20. We have considered the Petitioner's claim. The transmission tariff for 2009-14 tariff period is revised in respect of the transmission asset on the basis of the following:

- a) The admitted capital cost of ₹5537.51 lakh as on 1.4.2009;
- b) WAROI on actual loan derived/adopted from order dated 29.1.2016 in Petition No. 276/TT/2014;
- c) WAROD as per order dated 29.1.2016 in Petition No. 276/TT/2014;



d) Actual ACE of ₹151.71 lakh for 2011-12, ₹168.49 lakh for 2012-13 and ₹188.26 lakh for 2013-14 as approved by the Commission *vide* order dated 29.1.2016 in Petition No. 276/TT/2014.

21. In view of the above, the revised AFC allowed in respect of the transmission asset for 2009-14 tariff period is as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	100.77	100.77	106.46	119.56	135.61
Interest on Loan	8.38	1.67	0.00	0.00	0.00
Return on Equity	516.88	535.82	540.75	550.06	567.17
Interest on Working Capital	58.66	61.52	64.47	67.87	71.64
O&M Expenses	911.93	963.95	1019.16	1077.88	1139.42
Total	1596.63	1663.74	1730.84	1815.37	1913.85

22. AFC allowed for 2009-14 period *vide* order dated 13.8.2012 in Petition No. 334/2010 and subsequently *vide* order dated 29.1.2016 in Petition No. 276/TT/2014, the revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
AFC approved <i>vide</i> order dated 29.1.2016 in Petition No. 276/TT/2014	1588.07	1662.02	1730.84	1815.38	1913.85
AFC claimed by the Petitioner in the instant petition	1588.07	1662.03	1730.84	1815.37	1913.84
AFC allowed in the instant order	1596.63	1663.74	1730.84	1815.37	1913.85

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

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	149.44	159.83	170.60	177.44	183.59
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	575.74	583.84	588.50	591.20	594.81



Interest on Working Capital	74.50	76.85	79.19	81.45	83.80
O&M Expenses	1046.45	1081.29	1117.20	1154.14	1192.51
Total	1846.13	1901.81	1955.49	2004.23	2054.71

24. The details of the trued-up IWC claimed by the Petitioner in respect of the transmission asset are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	87.20	90.11	93.10	96.18	99.38
Maintenance Spares	156.97	162.19	167.58	173.12	178.88
Receivables	307.69	316.97	325.92	334.04	342.45
Total Working Capital	551.86	569.27	586.60	603.34	620.71
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	74.50	76.85	79.19	81.45	83.80

Capital Cost

25. The capital cost is to be calculated in accordance with Regulation 9(3) and Regulation 9(6) of 2014 Tariff Regulations. The Commission vide order 29.1.2016 in Petition No. 276/TT/2014 had allowed capital cost as on 1.4.2014 of ₹6045.97 lakh and capital cost as on 1.4.2019 of ₹8377.60 lakh including net ACE of ₹2331.63 lakh for determination of tariff for 2014-19 period in respect of the transmission asset covered in the instant petition and the same are as follows:

Admitted Capital Cost as on 31.3.2014	Admitted Net ACE during 2014-19							Admitted Capital Cost as on 31.3.2019	
	2014-15		2015-16		2016-17		2017-18		
	ACE	ACE	De-Capitalization	ACE	De-capitalization	ACE	De-capitalization		
6045.97	219.58	2087.28	344.15	400.00	53.60	26.00	3.48	8377.60	

26. The Petitioner has claimed the following capital cost in respect of the transmission asset for 2014-19 tariff period:



Admitted capital cost as on 1.4.2014	ACE					(₹ in lakh)
	2014-15	2015-16	2016-17	2017-18	2018-19	Total capital cost claimed as on 31.3.2019
6045.97	88.30	96.27	71.29	19.96	48.50	6370.30

27. The Petitioner has claimed the same capital cost as on 1.4.2014 of ₹6045.97 lakh which was admitted by the Commission vide order 29.1.2016 in Petition No. 276/TT/2014. Accordingly, admitted capital cost as on 1.4.2014 of ₹6045.97 lakh has been considered for working out the trued-up of tariff for 2014-19 period.

Additional Capital Expenditure (ACE)

28. The Commission approved net ACE of ₹2331.63 lakh in respect of the transmission asset covered in the instant petition for 2014-19 period towards balance and retention payments vide order dated 29.1.2016 in Petition No. 276/TT/2014.

29. The Petitioner has submitted that the Commission vide order dated 29.1.2016 in Petition No 276/TT/2014 has admitted net ACE of ₹2331.63 as recommended and approved by NERPC in 15th TCC & 15th NERPC meeting held on 20th & 21st August, 2015 for retention payment of protection wall at Haflong Sub-station, installation of hydrant system, nitrogen injection fire alarm system as per CEA notification dated 20.8.2010 and expenditure against dedicated Auxiliary Power Supply in Sub-stations at Badarpur, Nirjuli. Accordingly, expenditure has been made during 2014-19 for efficient and reliable operation of the system and has been claimed under Regulation 14(3)(vii) and Regulation 14(3)(ix) of the 2014 Tariff Regulations. The details of underlying reasons for additional capitalization of the transmission asset is given in Form- 7.



30. We have considered the submissions made by the Petitioner. The Commission *vide* order dated 29.1.2016 in Petition No. 276/TT/2014 had already allowed ACE for protection wall at Haflong Sub-station, ICT, isolators, nitrogen injection system, installation of fire alarm system in control room, replacement of ICT, PLCC panels and isolators, execution of pile foundation work at location no. 73 & location no. 75 of Gohpur-Itanagar transmission line, up gradation of the critical sub-station with GIS and other sub-stations with Hybrid/AIS with incorporation of Double Bus Bar arrangement, breaker failure protection and bus bar protection. ACE claimed by the Petitioner is less than what was allowed *vide* order dated 29.1.2016 in Petition No. 276/TT/2014. ACE allowed in respect of the transmission asset from 1.4.2014 to 31.3.2019 is as follows:

Admitted Capital Cost as on 1.4.2014	ACE					(₹ in lakh)
	2014-15	2015-16	2016-17	2017-18	2018-19	Total Capital Cost claimed as on 31.3.2019
6045.97	88.30	96.27	71.29	19.96	48.50	6370.30

Debt-Equity ratio

31. The debt-equity ratio has been allowed in accordance with Regulation 19(3) of the 2014 Tariff Regulations. As per Regulation 19(3) of the 2014 Tariff Regulations, the debt-equity ratio allowed by the Commission for determination of tariff for the period ending on 31.3.2014 shall be considered. Accordingly, debt-equity ratio as considered earlier for the purpose of determination of tariff of 2014-19 period has been considered for the purpose of truing up of the tariff of the transmission asset for 2014-19 tariff period. Debt-equity ratio of 70:30 has been considered during 2014-19 tariff period in accordance with Regulation 19(5) of the 2014 Tariff Regulations. The



details of debt-equity ratio as on 1.4.2014 and 31.3.2019 in respect of the transmission asset are as follows:

Particulars	Capital Cost as on 1.4.2014 (₹ in lakh)	(In%)	Total Capital Cost as on 31.3.2019 (₹ in lakh)	(In %)
Debt	3125.50	51.70	3352.53	52.63
Equity	2920.47	48.30	3017.77	47.37
Total	6045.97	100.00	6370.30	100.00

Depreciation

32. Depreciation has been worked out as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. The transmission asset has already completed 12 years of life before 1.4.2014. Accordingly, depreciation has been calculated based on the remaining depreciable value to be recovered over the balance useful life. The trued-up depreciation for 2014-19 tariff period in respect of the transmission asset is as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	6045.97	6134.27	6230.54	6301.83	6321.79
ACE	88.30	96.27	71.29	19.96	48.51
Closing Gross Block	6134.27	6230.54	6301.83	6321.79	6370.30
Average Gross Block	6090.12	6182.41	6266.19	6311.81	6346.05
Freehold Land	11.50	11.50	11.50	11.50	11.50
Weighted average rate of Depreciation (WAROD) (%)	2.36	2.50	2.64	2.73	2.81
Balance useful life of the asset (Year)	9	8	7	6	5
Lapsed life of the asset (Year)	22	23	24	25	26
Depreciable Value	5470.76	5481.14	5491.91	5498.76	5504.92
Depreciation during the year	144.02	154.40	165.17	172.01	178.18
Cumulative Depreciation	4318.63	4473.02	4638.20	4810.21	4988.39
Remaining Depreciable Value	1152.13	1008.12	853.72	688.55	516.53



33. The details of depreciation approved *vide* order dated 29.1.2016 in Petition No. 276/TT/2014, depreciation claimed by the Petitioner in the instant petition and true-up depreciation in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Approved vide order dated 29.1.2016 in Petition No. 276/TT/2014	156.01	266.41	400.74	428.40	430.43
Claimed by the Petitioner in the instant petition	149.44	159.83	170.60	177.44	183.59
Allowed after true-up in this order	144.02	154.40	165.17	172.01	178.18

Interest on Loan (IoL)

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

Return on Equity (RoE)

35. The Petitioner has claimed RoE in respect of the transmission asset in accordance with 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 the following effective tax rates for 2014-19 tariff period:

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

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



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

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

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

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

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	2920.47	2946.96	2975.84	2997.23	3003.22
Additions	26.49	28.88	21.39	5.99	14.55
Closing Equity	2946.96	2975.84	2997.23	3003.22	3017.77
Average Equity	2933.72	2961.40	2986.53	3000.22	3010.49
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342	21.549
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705	19.758
Return on Equity	575.30	583.54	588.50	591.19	594.81



39. The details of RoE approved vide order dated 29.1.2016 in Petition No. 276/TT/2014, RoE claimed in the instant petition and trued-up in the instant order is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 276/TT/2014	579.16	636.90	698.36	709.21	709.87
Claimed by the Petitioner in the instant petition	575.74	583.84	588.50	591.20	594.81
Approved after true-up in this order	575.30	583.54	588.50	591.19	594.81

Operation & Maintenance Expenses (O&M Expenses)

40. The O&M Expenses claimed by the Petitioner are as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
2 Numbers 220 kV Sub-station Bays					
Claimed by the Petitioner	84.4200	87.2200	90.1200	93.1000	96.2000
27 Numbers 132 kV Sub-station Bays					
Claimed by the Petitioner	814.0500	841.0500	868.8600	897.7500	927.7200
571.626 km Single Circuit (Single Conductor)					
Claimed by the Petitioner	115.4685	119.4698	123.4712	127.4726	131.4740
107.23 km Single Circuit (Double Conductor)					
Claimed by the Petitioner	32.4907	33.5630	34.7425	35.8148	37.1016
Total	1046.45	1081.29	1117.20	1154.14	1192.51

41. We have considered the submissions of the Petitioner. Regulation 29(3) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The norms specified in respect of the elements covered in the transmission asset are as follows:

Element	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
S/C (Single Conductor)	₹0.202 lakh/km	₹0.209 lakh/km	₹0.216 lakh/km	₹0.223 lakh/km	₹0.230 lakh/km
D/C (Single Conductor)	₹0.303 lakh/km	₹0.313 lakh/km	₹0.324 lakh/km	₹0.334 lakh/km	₹0.346 lakh/km
220 kV Sub-station	₹42.21 lakh/bay	₹43.61 lakh/bay	₹45.06 lakh/bay	₹46.55 lakh/bay	₹48.10 lakh/bay
132 kV and below Sub-station	₹30.15 lakh/bay	₹31.15 lakh/bay	₹32.18 lakh/bay	₹33.25 lakh/bay	₹34.36 lakh/bay



42. O&M Expenses allowed under Regulation 29(3) of the 2014 Tariff Regulations are as follows:

(₹ in lakh)					
Details	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station Bays					
2 Numbers 220 kV Sub-station bays	84.42	87.22	90.12	93.10	96.20
27 Numbers 132 kV and below Sub-station	814.05	841.05	868.86	897.75	927.72
Transmission Lines					
107.23 km D/C (Double Conductor)	32.49	33.56	34.74	35.81	37.10
571.626 km S/C (Single Conductor)	115.47	119.47	123.47	127.47	131.47
Total	1046.43	1081.30	1117.19	1154.14	1192.50

43. The details of O&M Expenses approved vide order dated 29.1.2016 in Petition No. 276/TT/2014, O&M Expenses claimed by the Petitioner and as trued up in the instant order are as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 276/TT/2014	1046.43	1081.30	1117.19	1154.14	1192.50
Claimed by the Petitioner in the instant petition	1046.45	1081.29	1117.20	1154.14	1192.51
Approved after true-up in this order	1046.43	1081.30	1117.19	1154.14	1192.50

Interest on Working Capital (IWC)

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

(i) Maintenance Spares:

Maintenance spares have been worked out based on 15% of Operation and Maintenance Expenses specified in Regulation 28.



(ii) O&M Expenses:

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

(iii) Receivables:

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

(iv) Rate of interest on working capital:

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

45. The trued up IWC allowed in respect of the transmission asset is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital					
O&M Expenses (O&M Expenses for One month)	87.20	90.11	93.10	96.18	99.37
Maintenance Spares (15% of O&M Expenses)	156.96	162.20	167.58	173.12	178.87
Receivables (Equivalent to Two months of annual fixed cost)	306.69	315.99	324.99	333.11	341.53
Total Working Capital	550.85	568.30	585.67	602.41	619.77
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	74.37	76.72	79.06	81.33	83.67

46. The details of IWC approved *vide* order dated 29.1.2016 in Petition No. 276/TT/2014, IWC claimed by the Petitioner and as trued up in the instant order is as follows:

(₹ 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. 276/TT/2014	74.73	81.62	89.03	91.30	92.57
Claimed by the Petitioner in the instant petition	74.50	76.85	79.19	81.45	83.80
Approved after true-up in this order	74.37	76.72	79.06	81.33	83.67



Approved Annual Fixed Charges for 2014-19 Tariff Period

47. The trued up AFC in respect of the transmission asset for the tariff period 2014-19 are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	144.02	154.40	165.17	172.01	178.18
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	575.30	583.54	588.50	591.19	594.81
Interest on Working Capital	74.37	76.72	79.06	81.33	83.67
O&M Expenses	1046.43	1081.30	1117.19	1154.14	1192.50
Total	1840.11	1895.97	1949.93	1998.67	2049.15

48. Accordingly, Annual Transmission Charges approved vide order dated 29.1.2016 in Petition No. 276/TT/2014, as claimed by the Petitioner and as approved after truing up in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 29.1.2016 in Petition No. 276/TT/2014	1856.33	2113.92	2392.78	2441.97	2444.51
Claimed by the Petitioner in the instant petition	1846.13	1901.81	1955.49	2004.23	2054.71
Approved after true-up in this order	1840.11	1895.97	1949.93	1998.67	2049.15

49. The annual transmission charges in respect of the transmission asset approved after truing up have reduced in comparison to the annual transmission charges approved earlier vide order dated 29.1.2016 in Petition No. 276/TT/2014 and the same is due to variation in cumulative depreciation and lower ACE claimed.

Determination of Annual Fixed Charges for 2019-24 Tariff Period

50. The Petitioner has claimed the following transmission charges in respect of the transmission asset for 2019-24 tariff period:



(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	194.17	268.78	463.15	907.27	728.89
Interest on Loan	0.00	0.00	1.20	1.20	3.17
Return on Equity	568.08	566.32	576.24	602.24	452.81
Interest on Working Capital	40.78	42.89	46.94	55.30	51.45
O&M Expenses	672.68	695.68	720.60	745.46	771.68
Total	1475.71	1573.67	1808.13	2311.47	2008.00

51. The details of IWC claimed by the Petitioner for 2019-24 period are as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	56.06	57.97	60.05	62.12	64.31
Maintenance Spares	100.90	104.35	108.09	111.82	115.75
Receivables	181.44	193.58	221.43	284.98	246.89
Total Working Capital	338.40	355.90	389.57	458.92	426.95
Rate of Interest (%)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	40.78	42.89	46.94	55.30	51.45

Capital Cost

52. 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.”

53. The Petitioner vide Auditor's Certificate has claimed the capital cost of ₹6370.30 lakh as on 31.3.2019 in respect of the transmission asset. The admitted capital cost as on 31.3.2019 is considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (ACE)

54. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as follows:

“24. Additional Capitalization within the original scope and up to 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 ACE incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut off date may be admitted by the Commission, subject to prudence check:

- a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;
- b) Change in law or compliance of any existing law;
- c) Deferred works relating to ash pond or ash handling system in the original scope of work;
- d) Liability for works executed prior to the cut-off date;
- e) Force Majeure events;
- f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and
- 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 54 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.

55. The Petitioner has projected net ACE of ₹2244.46 lakh after adjustment of decapitalisation during 2019-24 tariff period as follows:

(₹ in lakh)	
Particulars	Amount
Total Capital Cost as on 1.4.2019	6370.30
ACE in 2019-20	45.40
ACE in 2020-21	232.23



ACE in 2021-22	687.79
ACE in 2022-23	462.79
ACE in 2023-24	1156.97
De-Capitalization in 2020-21	(204.02)
De-Capitalization in 2021-22	(136.70)
Total Capital Cost as on 31.3.2024	8614.76

56. The Petitioner has submitted that ACE and de-capitalisation to be incurred during 2019-20 is on account of expenditure towards retention payment against dedicated Auxiliary Power Supply in Sub-stations at Nirjuli as approved in 15th NERPC meeting dated 21.8.2015 while ACE and de-capitalization to be incurred during 2019-24 is on account of expenditure towards replacement of old and obsolete isolator, CT, PT, CB, control and line protection panel at Nirjuli Sub-stations and expenditure on account of de-construction of old and dilapidated buildings that have completed 30 years of useful life. However, due to ageing of isolator, there is problem of misalignment, jamming, improper closing/ opening, over travel, sluggishness in operating mechanism and hot spots. Further, in CT frequent oil leakage, DGA & tan delta violation and hot spots are being routinely observed due to the ageing. In some cases, repairs from manufacturer is either not possible due to obsolesce (transferred to live tank from dead tank) or techno-economically not beneficial. Further, all the relays at Nirjuli sub-station are of static/ electro-mechanical type and giving frequent problem and also obsolete. These need to be retrofitted with numerical type relays which may support latest communication protocol.

57. In response to the Commission's query regarding the details of ACE and de-capitalization during 2019-24 tariff period, the Petitioner has submitted the following in respect of ACE claimed:



A. Isolators (16 set):

- a. These Isolators are of ELPRO/ Project Electric make and going to complete 25 years of service in tariff period 2019-24.
- b. These isolators are mainly of horizontal double break (HDB) type and frequent problem of misalignment are being faced. Current transfer assembly on isolator top and other major spares are now no more available in most of the cases due to old design of isolators, thus creating problem in maintaining these old isolators. Rusting has also been observed in gear assembly and mechanism box. Due to these constraints in maintaining isolators, frequent breakdown are being experienced despite all efforts. Due to improper health of isolators, specially interlock mechanism, drive mechanism etc., the isolators are unable to remain stable during storms and high wind conditions and are sometimes getting opened in ON LOAD condition which is dangerous to system as well as to the operating personnel.
- c. Due to rusting, many MOM boxes got damaged leading to problem in components of MOM boxes and motorised operation of isolators are not possible. Due to ageing, TBs inside MOM boxes have become brittle and on many occasions, terminals come in contact with boxes and create DC earth fault, which is detrimental to the control and protection system.
- d. Many times, even local operation also becomes difficult. Further, timely support is not available from OEM due to old design.
- e. In view of above, the Petitioner has proposed to replace 16 sets of 132 kV Isolators at Nirjuli.

B. Current Transformer (CT-12 numbers):

- a. These current transformers are going to complete 25 years of service in tariff period 2019-24. Due to ageing, leakages from multiple points are observed. In some cases, oil seepage from bottom of tank is also observed.



b. As there is leakage in the current transformer, in long run it may lead to moisture ingress and subsequent failure. The current transformers are hermetically sealed equipment and major repair at site is not recommended. Further, as there is ingress of moisture, complete replacement of active insulation parts required at manufacturer works, which will not be techno-economically viable.

c. In view of this, the Petitioner has proposed to replace 12 numbers of 132 kV CT at Nirjuli Sub-station.

C. Potential Transformer (PT-3 numbers):

a. These potential transformers were commissioned in 1997 and going to complete 25 years of service in tariff period 2019-24. Due to ageing, leakages from multiple points are observed. In many cases, oil seepage from bottom of tank, gauge or secondary terminal boxes are also observed. Due to ageing, variation in secondary voltage is observed. PT plays a major role for metering and protection system. Variation in secondary voltage may result into improper metering and undesired tripping of transmission elements. 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.

b. In view of this, the Petitioner has proposed to replace 3 numbers of 132 kV PTs at Nirjuli Sub-station.

D. Replacement of Control panels and protection panels with SAS based C&R panel alongwith SCADA:

a. These panels were installed during 1997 and going to complete 25 years of service during tariff period 2019-24.

b. These relays are of electromagnetic/ static type and have become obsolete. OEMs have themselves phased out these models of relays and there is no spares support.



- c. 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.
- d. Due to ageing, problem of mal-operation/ non-operation occurs because of sticking up of contacts and problem in the coils.
- e. These relays are not IEC 61850 compliant and also do not have built-in DR facility resulting in difficulties during fault analysis.
- f. 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 also it is not feasible to replace TBs and wiring inside these panels.
- g. Due to ageing, most of the cables laid in the sub-station have been damaged, causing DC earth fault and occasional 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 power and control cables with SAS based C&R panels along with SCADA shall be the most feasible and techno-economical solution. As it will require very less quantity of power and control cables and shall also comply with latest technical requirement. In this case, the outage of system shall also be less.
- h. In view of above, the Petitioner has proposed to replace line protection panel, transformer and reactor protection panels at Nirjuli Sub-station with SAS based C&R panel along with SCADA as per latest practice.

E. 132 kV Circuit Breaker (1 set):

- a. These CBs (ABB make) were commissioned in 1997 and going to complete 25 years in 2019-24.



- b. All these CBs are of pneumatic type. Due to ageing, SF6 leakages from various joints are observed which are becoming difficult to attend during maintenance.
- c. Multiple leakages are also observed from operating systems.
- d. Mismatch in timing results also observed. This may cause failure of CBs in service.
- e. Manufacturers are not able to provide timely service support. Frequent adjustments of auxiliary contact are also required due to ageing of mechanisms.
- f. In view of the above, the Petitioner has proposed to replace 1 set of 132 kV CB at Nirjuli sub-station.

58. The Petitioner has further submitted that ACE and de-capitalization to be incurred during 2019-24 under the building and civil works head is as per Schedule-II, Companies Act, 2013 Part-C-I (b) that prescribes average useful life of buildings other than RCC frame structure as 30 years. Further, clauses 3.2.6.1 of National Disaster Management Authority mandates that all Government owned buildings and structure should be Seismic Resistant. The buildings under ATS of Kopili-Khandong (Additional Transmission Gohpur Itanagar) are completing their useful life of 30 years in 2019-24 tariff period. Accordingly, ACE and de-capitalization (net ₹21.09 crore) for demolition and reconstruction of buildings as per Government mandate has been proposed in 2019-24 tariff block.

59. The cost details for ACE/ de-capitalization proposed during 2019-24 as submitted by the Petitioner *vide* Auditor's Certificate dated 31.7.2019 are as follows:

(₹ in lakh)		
Particulars	Building & Civil Works	Sub-station
Add: Estimated ACE in 2019-20	-	45.40



Add: Estimated ACE in 2020-21	231.40	0.83
Less: Estimated de-capitalization during 2020-21	(204.02)	-
Add: Estimated ACE in 2021-22	462.79	225.00
Less: Estimated de-capitalization during 2021-22	-	(136.70)
Add: Estimated ACE in 2022-23	462.79	-
Add: Estimated ACE in 2023-24	1,156.97	-
Total ACE proposed during 2019-24	2313.95	271.23
Total de-capitalization proposed during 2019-24	(204.02)	(136.70)
New ACE proposed during 2019-24	2109.93	134.53

60. The Petitioner has claimed net ACE of ₹2109.93 lakh towards “building and civil works”. In our view, “building and civil works” are non-critical in nature and, therefore, we are not inclined to allow ACE claimed by the Petitioner towards “building & civil works” under Regulation 25(2)(a) of the 2019 Tariff Regulations. However, the Petitioner may obtain the approval of RPC and consent of beneficiaries and file a separate petition claiming these elements.

61. Accordingly, at this stage, we are not inclined to allow ACE claimed towards “building and civil works”.

62. With regard to ACE proposed for replacement of isolators, current transformer, potential transformer, control panels and protection panels with SAS based C&R panel along with SCADA and 132 kV circuit breaker due to obsolescence of technology, we note that these items are of critical nature and their failure may affect the stability and reliability of the grid. As such, the replacement of these obsolete equipment and the consequent ACE is approved, subject to true-up on actual basis. However, it is observed that the Petitioner has not submitted the OEM Certificate in respect of the sub-station equipment that is sought to be replaced in 2019-24 tariff period. The sub-station associated with the transmission asset has completed its useful life in 2019-24 tariff period. Therefore, to assess and understand the



anticipated life extension of the sub-station for the purpose of depreciation, the Petitioner is directed to submit the OEM Certificate regarding the proposed life of the Sub-station equipment which is sought to be replaced along with the justification at the time of truing-up. The Petitioner is also directed to submit the actual cost estimate of ACE approved for 2019-24 period at the time of truing-up.

63. Accordingly, the detailed break-up of ACE and de-capitalisation allowed for 2019-24 tariff period is as under:

(₹ in lakh)

Particulars	Building & Civil Works	Sub-station
Add: Estimated ACE in 2019-20	-	45.40
Add: Estimated ACE in 2020-21	-	0.83
Less: Estimated de-capitalization during 2020-21	-	-
Add: Estimated ACE in 2021-22	-	225.00
Less: Estimated de-capitalization during 2021-22	-	(136.70)
Add: Estimated ACE in 2022-23	-	-
Add: Estimated ACE in 2023-24	-	-
Total ACE proposed during 2019-24	-	271.23
Total de-capitalization proposed during 2019-24	-	(136.70)
New ACE proposed during 2019-24	-	134.53

64. Accordingly, capital cost of the transmission asset as on 31.3.2024 is approved as under:

(₹ in lakh)

Capital Cost as on 1.4.2019					Capital Cost as on 31.3.2024
	ACE in 2019-20	ACE in 2020-21	ACE in 2021-22	Decapitalisation in 2021-22	
6370.30	45.40	0.83	225.00	(136.70)	6504.83

Adjustments in Equity

65. The transmission asset was put under commercial operation on 1.4.1992. The Weighted Average Life (WAL) for the transmission asset was determined as 31 years.



Thus, the transmission asset shall complete its useful life on 31.3.2023. Proviso to Regulation 18(3) of the 2019 Tariff Regulations provides that if a transmission system completes its useful life on or after 1.4.2019 and if the actual equity deployed is more than 30% of the capital cost, then the equity shall be restricted to 30% of the total equity deployed. Regulation 18(3) of the 2019 Tariff Regulations provides as follows:

“18. Debt-Equity Ratio:

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

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

66. The debt-equity ratio as on 31.3.2019 is 52.63:47.37 i.e. the equity deployed is more than 30%. Therefore, as per proviso to Regulation 18(3) of the 2019 Tariff Regulations, equity from 2023-24 onwards has been restricted to 30%. Depreciation has been fully recovered up to 90% of the capital cost by the year 2022-23 and loan has already been re-paid prior to 2014-19 period. Accordingly, the capital cost for 2019-24 tariff period is allowed as follows:

Particulars	(₹ in lakh)
	Amount
Closing equity as on 31.3.2020	3031.39
Closing equity as on 31.3.2021	3031.64
Closing equity as on 31.3.2022	3030.77
Closing equity as on 31.3.2023** (a)	3030.77
Equity in excess of 30% (b)	1079.33
Equity admissible as on 1.4.2023***(a)-(b)	1951.45

**Represents 46.59% of Gross Block of ₹6504.83 lakh

***Represents 30% of Gross Block of ₹6504.83 lakh



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 additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.”

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

Debt-equity for Capital Cost as on 1.4.2019

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh)	(%)
Debt	3352.53	52.63
Equity	3017.77	47.37
Total	6370.30	100.00

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

Particulars	(₹ in lakh)							
	ACE		ACE		ACE		De-capitalization	
	2019-20	(%)	2020-21	(%)	2021-22	(%)	2021-22	(%)
Debt	31.78	70.00	0.58	70.00	157.50	70.00	68.34	49.99
Equity	13.62	30.00	0.25	30.00	67.50	30.00	68.36	50.01
Total	45.40	100.00	0.83	100.00	225.00	100.00	136.70	100.00

Debt-Equity for Capital Cost as on 31.3.2024

Particulars	(₹ in lakh)	
	Capital cost as on 31.3.2024	
Debt	3474.06	
Equity	3030.78**	
Total	6504.84	

** Equity to be serviced as on 31.3.2024 is ₹1951.45 lakh (₹3030.78 lakh - ₹1079.33 lakh i.e. Equity in excess of 30% reduced as discussed in Para. 64 above)

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

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

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

(2) *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 asset 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 asset 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 up to 31.3.2019 from the gross depreciable value of the asset.
- (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 asset in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.”

70. The transmission project has already completed more than 12 years before 1.4.2019. Accordingly, depreciation has been calculated based on the remaining depreciable value (up to 90% of existing gross block of assets) to be recovered over the balance useful life up to 31.3.2023 and thereafter no depreciation is allowed on existing transmission asset. The Petitioner has not provided any OEM certificate and adequate justification towards the ACE claimed during 2019-24 tariff period. Hence, depreciation for ACE (new additions) claimed during 2019-24 tariff period is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations, subject to submission of requisite documents/ information for claim of extension in life at the time of truing-up. Depreciation allowed in respect of the transmission asset for 2019-24 period is as follows:

(₹ in lakh)					
Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	6370.30	6370.30	6370.30	6233.60	6233.60
ACE	0.00	0.00	0.00	0.00	0.00
Decapitalisation	0.00	0.00	136.70	0.00	0.00
Closing Gross Block	6370.30	6370.30	6233.60	6233.60	6233.60
Average Gross Block	6370.30	6370.30	6301.95	6233.60	6233.60
Freehold Land	11.50	11.50	11.50	11.50	11.50
Weighted average rate of Depreciation (WAROD) (%)	2.88	2.88	2.43	3.25	0.00
Balance useful life of the	4	3	2	1	0



Asset at the beginning of the year (Year)					
Lapsed life at the beginning of the year (Year)	27	28	29	30	31
Depreciable Value	5722.92	5722.92	5661.41	5599.89	5599.89
Depreciation during the year	183.63	183.63	152.88	202.29	0.00
Cumulative Depreciation at the end of the year	5172.02	5355.65	5397.60	5599.89	5599.89
Remaining Depreciable Value at the end of the year	550.90	367.27	152.88	0.00	0.00

	(₹ in lakh)				
New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	0.00	45.40	46.23	271.23	271.23
ACE	45.40	0.83	225.00	0.00	0.00
Closing Gross Block	45.40	46.23	271.23	271.23	271.23
Average Gross Block	22.70	45.82	158.73	271.23	271.23
Freehold Land	0.00	0.00	0.00	0.00	0.00
Weighted average rate of Depreciation (WAROD) (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	20.43	41.23	142.86	244.11	244.11
Cumulative Depreciation at the beginning of the year	0.00	1.20	3.62	12.00	26.32
Depreciation	1.20	2.42	8.38	14.32	14.32
Cumulative Depreciation at the end of the year	1.20	3.62	12.00	26.32	40.64
Remaining Depreciable Value at the end of the year	19.23	37.62	130.86	217.79	203.47

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.

(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 IoL 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 will be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of true up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL has been allowed as follows:

	(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	3352.53	3384.31	3384.89	3474.06	3474.06
Cumulative Repayments up to Previous Year	3352.53	3353.73	3356.15	3296.17	3310.49
Net Loan-Opening	0.00	30.58	28.74	177.89	163.57
Additions	31.78	0.58	157.50	0.00	0.00
Decapitalisation	0.00	0.00	68.34	0.00	0.00
Repayment during the year	1.20	2.42	8.38	14.32	14.32
Adjustment of cumulative repayment pertaining to	0.00	0.00	68.36	0.00	0.00



the decapitalised asset					
Net Loan-Closing	30.58	28.74	177.89	163.57	149.25
Average Loan	15.29	29.66	103.31	170.73	156.41
Weighted Average Rate of Interest on Loan (%)	7.9334	7.9162	7.8935	7.8667	7.8389
Interest on Loan	1.21***	2.35***	8.16***	13.43***	12.26***

***Computed by multiplying WAROI into Average Loan raised for additions

Return on Equity (RoE)

73. 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 due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

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

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

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

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:



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

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

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

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

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

Illustration-

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

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

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

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

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



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

74. The Petitioner has submitted that MAT rate is applicable to the Petitioner's Company. As observed in earlier part of this order, equity from 2021-22 onwards has been restricted to 30% as per proviso to Regulation 18(3) of the 2019 Tariff Regulations. The 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 transmission asset is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	3017.77	3031.39	3031.64	3030.77	3030.77
Adjustment of equity	0.00	0.00	0.00	0.00	(1079.33)
Net Opening Capital	3017.77	3031.39	3031.64	3030.77	1951.45
Additions	13.62	0.25	67.50	0.00	0.00
Decapitalisation	0.00	0.00	68.36	0.00	0.00
Closing Equity	3031.39	3031.64	3030.77	3030.77	1951.45
Average Equity	3024.58	3031.51	3031.21	3030.77	1951.45
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
Return on Equity	568.08	569.38	569.32	569.24	366.52

Operation & Maintenance Expenses (O&M Expenses)

75. The O&M expenses claimed by the Petitioner for the transmission asset for 2019-24 tariff period are as follows:

(₹ in lakh)					
Details	2019-20	2020-21	2021-22	2022-23	2023-24
2 Numbers 220 kV Sub-station bays	45.02	46.60	48.24	49.92	51.68
27 Numbers 132 kV and below Sub-station bays	434.16	449.28	465.21	481.41	498.42
3 Numbers 132 kV and below bays	0.74	0.76	0.79	0.82	0.85
107.23 km D/C (Single Conductor)	40.43	41.93	43.32	44.93	46.43
571.626 km S/C (Single Conductor)	144.05	148.62	154.34	159.48	165.20
PLCC (2% of ₹145.25)	2.91	2.91	2.91	2.91	2.91



Total	672.68	695.68	720.60	745.46	771.68
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76. The norms specified under Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provide as follows:

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more sub-conductors)	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single Conductor)	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.319	2.401	2.485	2.572	2.662



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Multi Circuit (Twin & Triple Conductor)	1.544	1.598	1.654	1.713	1.773
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back- to-Back station (₹ Lakh per 500 MW)	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath- Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;*
- ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;*
- iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);*
- iv. the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative*



O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and

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

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

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

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

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

77. The Petitioner has claimed O&M Expenses separately for the 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.



78. We have considered the submissions of the Petitioner. The O&M Expenses has been worked out 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					
2 Numbers of 220 kV bays					
Norms (₹ lakh/Bay)	22.51	23.3	24.12	24.96	25.84
Total	45.02	46.60	48.24	49.92	51.68
27 Numbers 132 kV and below Sub-station					
Norms (₹ lakh/Bay)	16.08	16.64	17.23	17.83	18.46
Total	434.16	449.28	465.21	481.41	498.42
3 Numbers 132 kV and below					
Norms (₹ lakh/Bay)	0.245	0.254	0.263	0.272	0.282
Total	6.13	6.35	6.58	6.80	7.05
107.23 km D/C (Single Conductor)					
Norms (₹ lakh/Bay)	0.377	0.391	0.404	0.419	0.433
Total	40.43	41.93	43.32	44.93	46.43
571.626 km S/C (Single Conductor)					
Norms (₹ lakh/km)	0.252	0.26	0.27	0.279	0.289
Total	144.05	148.62	154.34	159.48	165.20
Total O&M Expenses allowed (₹ in lakh)	669.78	692.78	717.68	742.54	768.78

Interest on Working Capital (IWC)

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

“34. Interest on Working Capital

(1)...

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

i. Receivables equivalent to 45 days of fixed cost;



- ii. Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and
- iii. Operation and maintenance expenses, including security expenses for one month”

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

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

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

“3.Definitions ...

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

80. 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%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (ROI) considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and from 2021-22 onwards has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.00% plus 350 basis points). The components of the working capital and interest thereon allowed is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses (O&M Expenses for One month)	55.82	57.73	59.81	61.88	64.07
Maintenance Spares (15% of O&M Expenses)	100.47	103.92	107.65	111.38	115.32
Receivables (Equivalent to 45 days of annual	180.05	183.62	184.11	194.85	147.07

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transmission charges)					
Total Working Capital	336.34	345.27	351.57	368.11	326.45
Rate of Interest (%)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	40.53	38.84	36.91	38.65	34.28

Annual Fixed Charges for 2019-24 Tariff Period

81. The transmission charges allowed in respect of the transmission asset for 2019-24 period are as follows:

	(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	184.83	186.05	161.26	216.61	14.32
Interest on Loan	1.21	2.35	8.16	13.43	12.26
Return on Equity	568.08	569.38	569.32	569.24	366.52
Interest on Working Capital	40.53	38.84	36.91	38.65	34.28
O&M Expenses	669.78	692.78	717.68	742.54	768.78
Total	1464.43	1489.40	1493.33	1580.47	1196.16

Filing Fee and Publication Expenses

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

83. The Petitioner has requested to allow the Petitioner to bill and recover License fee and RLDC fees and charges, separately from the Respondents.

84. 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

85. 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.

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

Security Expenses

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

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



Capital Spares

89. 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

90. During the tariff periods 2004-09 and 2009-14 (up to 30.6.2011), the transmission charges for inter-State transmission systems were being shared in accordance with the tariff regulations for the respective tariff periods. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems is governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2010 (in short, "the 2010 Sharing Regulations"). After repeal of the 2010 Sharing Regulations, with effect from 1.11.2020, sharing of transmission charges is 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 respective Tariff Regulations and shall be recovered from the concerned DICs through Bill 2 under Regulation 15(2) (b) of the 2020 Sharing Regulations. For subsequent period, the billing, collection and disbursement of the transmission charges approved in this order shall be governed by the provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.



91. To summarize:

a) The revised AFC allowed in respect of the transmission asset as per the APTEL's judgements is as follows:

(₹ in lakh)		
Particulars	2007-08	2008-09
AFC	1729.58	1769.15

b) The consequential revision of AFC allowed in respect of the transmission asset for 2009-14 tariff period is as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2012-13	2013-14	2014-15
AFC	1596.63	1663.74	1730.84	1815.37	1913.85

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC	1840.11	1895.97	1949.93	1998.67	2049.15

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

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	1464.43	1489.40	1493.33	1580.47	1196.16

92. This order disposes of Petition No. 315/TT/2020 in terms of the above discussion and findings.

sd/-
(Pravas Kumar Singh)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson

