CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 148/TT/2020

Coram:

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

Date of order: 15.09.2021

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, 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 **Asset-I**: 220 kV Dimapur-Misa Transmission Line, LILO 220 kV D/C Kopili-Samaguri Transmission Line and LILO 132 kV D/C Mariani-Dimapur Transmission Line and **Asset-II**: 132 kV D/C Doyang-Dimapur Transmission Line, 132 kV S/C Dimapur-lmphal Transmission Line with associated bays for Transmission System associated with Doyang HEP in the North Eastern Region.

And in the matter of:

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

Vs.

1. Assam Electricity Grid Corporation Limited,
(Formerly Assam State Electricity Board)
Bijulee Bhawan, Paltan Bazar,
Guwahati-781001, Assam.

2. Meghalaya Energy Corporation Limited,
(Formerly Meghalaya State Electricity Board)
Short Round Road, "Lumjingshai",
Shillong-793001, Meghalaya.

3. Government of Arunachal Pradesh,
Itanagar, Arunachal Pradesh.

4. Power and Electricity Department,
Government of Mizoram,
Aizawl, Mizoram.

5. Manipur State Electricity Distribution Company Limited,
(Formerly Electricity Department, Government of Manipur),
Keishampat, Imphal.

6. Department of Power,
Government of Nagaland,
Kohima, Nagaland.

7. Tripura State Electricity Corporation Limited,
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura (W)-799001, Tripura. **...Respondent(s)**

For Petitioner:	Shri S.S. Raju, PGCIL Shri D.K. Biswal, PGCIL Shri V.P. 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 for 2004-09 and 2009-14 periods; truing 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 the following transmission assets under Transmission System associated with Doyang HEP in the North Eastern Region (hereinafter referred to as “the transmission project”):

> **Asset-I**: 220 kV Dimapur-Misa Transmission Line, LILO 220 kV D/C Kopili-Samaguri Transmission Line and LILO 132 kV D/C Mariani-Dimapur Transmission Line; and
>
> **Asset-II**:132 kV D/C Doyang-Dimapur Transmission Line, 132 kV S/C Dimapur-lmphal Transmission Line with associated bays.

2. Asset-I and Asset-II have been combined during 2009-14 period and they have been referred to in this order as Combined Asset for 2009-14, 2014-19 and 2019-24 tariff periods.

3. 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."

Background

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

a. The Investment Approval (IA) for the transmission project was accorded by Ministry of Home Affairs vide its letter dated 29.3.1985 at an estimated cost of ₹4087 lakh. Subsequently, the Revised Cost Estimates (RCE), RCE-I and RCE-II for the transmission project were approved by Ministry of Power *vide* its letters dated 14.5.1993 and 30.6.2000 respectively at an estimated cost of ₹6966 lakh and ₹11778 lakh.

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

i) 220 kV Dimapur-Misa Transmission Line, LILO 220 kV D/C Kopili-Samaguri Transmission Line at Misa alongwith six sub-station bays and

ii) 132 kV D/C Doyang-Dimapur Transmission Line, 132 kV S/C Dimapur-Imphal Transmission Line alongwith ten sub-station bays.

c. The transmission assets were put under commercial operation as follows:

Asset	COD
Asset- I	1.7.1995
Asset- II	1.4.1997
Combined Asset	Notional COD: 1.4.1997

d. In the North-Eastern Region (NER), a Uniform Common Pooled Transmission Tariff (UCPTT) in terms of "paise per kWh" was being followed from 1991-92. The UCPTT rate adopted and applied in NER through a 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 up to 31.3.2004 for the transmission assets.

e. Further, *vide* order dated 27.4.2007 in Petition No. 89/2006, 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."*

f. 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").

g. Accordingly, the transmission tariff for the period from 1.4.2007 to 31.3.2009 for the transmission assets was determined based on provisionally approved capital cost *vide* order dated 27.4.2007 in Petition No. 89/2006. The transmission tariff was revised on account of Additional Capital Expenditure

(ACE) and de-capitalization from COD to 2004 of subject Asset-II *vide* order dated 21.2.2008 in Petition No. 89/2006. The tariff approved was again revised *vide* order dated 21.8.2009 in Petition No. 89/2006 as per APTEL judgement dated 4.11.2008 in Appeal No. 74/2008. The tariff approved was further revised *vide* order dated 30.5.2011 in Petition No. 196/2010 on account of refinancing of Government of India loan with LIC-III loan during the years 2007-08 and 2008-09.

h. For the period from 1.4.2009 to 31.3.2014, the transmission tariff was determined *vide* order dated 1.6.2011 in Petition No. 197/2010. 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 28.1.2016 in Petition No. 240/TT/2014.

i. The Petitioner has sought revision of the approved transmission tariff for 2004-09 tariff period on account of change in Interest on Loan (IoL) and Interest on Working Capital (IWC) to the extent of revision in IoL and in Maintenance Spares in terms of the Appellate Tribunal for Electricity (APTEL) judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and 13.6.2007 in Appeal No. 139/2006 and batch matters. The Petitioner has sought consequential revision of tariff allowed for 2009-14 period, truing up of tariff of 2014-19 period and determination of tariff of 2019-24 period of the Combined Asset in the North Eastern Region. The Petitioner has further submitted that the revised transmission charges for 2004-09 tariff period has been calculated and the same is effective from 1.4.2007 and claimed the revision of tariff from 2007-08 onwards.

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

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

k. 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.

l. 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.

m. Based on the APTEL's judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and dated 13.6.2007 in Appeal No. 139/2006 and batch matters, the Petitioner sought revision of tariff of its transmission assets for 2001-04 and 2004-09 tariff periods in Petition No. 121/2007. The Commission after taking into consideration the pendency of Appeals before the Hon'ble Supreme Court adjourned the matter sine die and directed to revive the same after disposal of the Civil Appeals by the Hon'ble Supreme Court.

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

o. Consequent to the Hon'ble Supreme Court's order dated 10.4.2018 in NTPC matters, 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 transmission assets at the time of filing of truing up of the petitions for 2014-19 tariff period in respect of concerned transmission assets. Accordingly, the Petitioner has filed the instant petition.

p. The instant petition was heard on 8.6.2021 and in view of APTEL's judgments dated 22.1.2007 and 13.6.2007 and order of Hon'ble Supreme Court dated 10.4.2018, transmission tariff is being revised. Period- wise transmission tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods and suitable assumptions have been made at certain places and applied, which are indicated.

5. The capital cost of ₹6010.81 lakh for Asset-I and ₹5030.09 lakh for Asset-II (combined capital cost for Asset-I and Asset-II is ₹11040.90 lakh) has been approved by the Commission *vide* order dated 21.8.2009 in Petition No. 89/2006. The tariff for 2004-09 period was worked out based on the admitted capital cost of ₹11040.90 lakh. Accordingly, considering the admitted capital cost of 6010.81 lakh for Asset-I and ₹5030.09 lakh for Asset-II, tariff is now being revised for 2007-09 and 2009-14 tariff periods in terms of the APTEL's judgement dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and judgement dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters.

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

7. 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/ objections 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)

8. 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 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 above, the interest allowed for 2007-09 period is revised on the basis of the normative debt repayment methodology.

Re: Additional Capital Expenditure (ACE)

9. 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 are to be revised taking into consideration ACE after COD for computation of working capital for the period 2007-09.

Re: Depreciation

10. 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.

11. In view of the above directions of APTEL, the outstanding loan allowed for the transmission assets for 2007-09 period is revised in the instant order.

12. The revision of transmission tariff allowed for 2007-09 period necessitates the revision of tariff allowed for 2009-14 period, which is also being done in the instant order. The implementation of the directions of APTEL in judgement dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters, was kept pending in case of the Petitioner awaiting the outcome of the Civil Appeals filed before the Hon'ble Supreme Court. Taking into consideration the facts of the case and keeping in view the interest of the

consumers, we are of the view that the beneficiaries should not be burdened with the carrying cost for the difference in the tariff allowed earlier and allowed in the instant order for 2007-09 period and 2009-14 tariff period. 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 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.

13. This order is issued considering the submissions made by the Petitioner vide affidavits dated 4.1.2020, 4.5.2020 and 18.6.2021.

14. The hearing in this matter was held on 8.6.2021 through video conference and order was reserved.

15. The Commission vide its Record of Proceedings (RoP) dated 8.6.2021 directed the Petitioner to clarify and provide the place and sub-station base of loop in and loop out. In response, the Petitioner *vide* affidavit dated 18.6.2021 has submitted that the transmission lines of Asset-I: 220 kV D/C Kopili-Samaguri Transmission Line was LILOed at Petitioner's Misa station and Asset-II: 132 kV S/C Mariani Dimapur (DOP) transmission line was LILOed at Petitioner's Dimapur station.

16. Having heard the representatives of the Petitioner and perused the material on record, we proceed to dispose of the petition.

Revision of Transmission Charges Allowed for 2007-09 and 2009-14 Tariff Periods

2007-09 Period

17. The Commission approved the transmission tariff for 2007-09 period *vide* order dated 27.4.2007 in Petition No. 89/2006 and revised it on account of ACE and de-

capitalization from COD to 2004 of Asset-II *vide* order dated 21.2.2008 in Petition No. 89/2006. The approved transmission tariff was further revised *vide* order dated 21.8.2009 in Petition No. 89/2006 as per APTEL judgement dated 4.11.2008 in Appeal No. 74/2008. The approved transmission tariff was again revised *vide* order dated 30.5.2011 in Petition No. 196/2010 on account of refinancing of Government of India loan with LIC-III loan during 2007-08 and 2008-09. The transmission charges allowed for 2007-09 tariff period in respect of the transmission assets were as follows:

(₹ in lakh)

Particulars	**2007-08**	**2008-09**
Asset-I		
Depreciation	175.28	175.28
Interest on Loan	22.75	4.19
Return on Equity	420.76	420.76
Advance against Depreciation	0.00	0.00
Interest on Working Capital	31.43	32.19
O&M Expenses	316.04	328.91
Total	**966.26**	**961.32**
Asset-II		
Depreciation	124.62	124.62
Interest on Loan	269.24	185.32
Return on Equity	144.63	144.63
Advance against Depreciation	0.00	54.53
Interest on Working Capital	29.25	29.73
O&M Expenses	406.55	423.14
Total	**974.30**	**961.97**

18. The Petitioner has claimed the following revised transmission charges in respect of the transmission assets with effect from 1.4.2007 for 2007-09 period in the instant petition:

(₹ in lakh)

Particulars	**2007-08**	**2008-09**
Asset-I		
Depreciation	175.28	175.28
Interest on Loan	31.64	9.07
Return on Equity	420.76	420.76
Advance against Depreciation	0.00	0.00
Interest on Working Capital	31.76	32.46
O&M Expenses	316.04	328.91

Total	**975.49**	**966.49**
Asset-II		
Depreciation	124.62	124.62
Interest on Loan	330.97	282.32
Return on Equity	144.63	144.63
Advance against Depreciation	0.00	0.00
Interest on Working Capital	30.43	30.58
O&M Expenses	406.55	423.14
Total	**1037.20**	**1005.29**

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

a) Admitted capital cost as on 1.4.2004 *vide* order dated 21.8.2009 in Petition No. 89/2006 for

i. Asset-I: ₹6010.81 lakh

ii. Asset-II: ₹5030.09 lakh

b) Weighted Average Rate of Interest on actual loan adopted from order dated 30.5.2011 in Petition No. 196/2010.

c) Weighted Average Rate of Depreciation, Rate of Interest for Working Capital and O&M Expenses as per order dated 21.8.2009 in Petition No. 89/2006 and order dated 30.5.2011 in Petition No. 196/2010.

d) There is Additional Capital Expenditure (ACE) of ₹54.09 lakh in case of Asset-II from COD till 2004 due to which the maintenance spares as on 1.4.2004 is revised for calculating IWC. No ACE incurred during 2004-09 period.

20. In view of the above, the revised transmission charges allowed for Asset-I and Asset-II for 2007-09 period is as follows:

(₹ in lakh)

Particulars	**2007-08**	**2008-09**
Asset-I		
Depreciation	175.28	175.28
Interest on Loan	31.76	19.49
Return on Equity	420.76	420.76
Advance against Depreciation	0.00	0.00
Interest on Working Capital	31.76	32.64
O&M Expenses	316.04	328.91
Total	**975.59**	**977.07**

Asset-II		
Depreciation	124.62	124.62
Interest on Loan	269.24	185.81
Return on Equity	144.63	144.63
Advance against Depreciation	0.00	44.62
Interest on Working Capital	29.36	29.68
O&M Expenses	406.55	423.14
Total	**974.40**	**952.51**

21. The Annual Fixed Charges (AFC) allowed earlier for 2007-09 period *vide* order dated 21.8.2009 in Petition No. 89/2006 and vide order dated 30.5.2011 in Petition No. 196/2010, the revised AFC claimed in the instant petition and AFC allowed in the instant order are given as follows:

(₹ in lakh)

Particulars	2007-08	2008-09
Asset-I		
AFC approved *vide* order dated 21.8.2009 in Petition No. 89/2006 and vide order dated 30.5.2011 in Petition No. 196/2010	966.26	961.32
AFC claimed by the Petitioner in the instant petition	975.49	966.49
AFC allowed in the instant order	975.59	977.07
Asset-II		
AFC approved *vide* order dated 21.8.2009 in Petition No. 89/2006 and vide order dated 30.5.2011 in Petition No. 196/2010	974.30	961.97
AFC claimed by the Petitioner in the instant petition	1037.20	1005.29
AFC allowed in the instant order	974.40	952.51

2009-14 Tariff Period

22. The Commission *vide* order dated 1.6.2011 in Petition No. 197/2010 had approved tariff in respect of the Combined Asset for 2009-14 period and subsequently *vide* order dated 28.1.2016 in Petition No. 240/TT/2014 trued up the transmission tariff allowed for 2009-14 period and the same is as follows:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	552.36	179.94	179.89	180.92	182.09
Interest on Loan	140.37	103.76	85.70	69.03	52.33
Return on Equity	754.13	781.78	782.48	783.62	794.28
Interest on Working Capital	62.88	56.80	58.43	60.22	62.33
O&MExpenses	654.26	691.59	731.32	773.20	817.37
Total	**2164.01**	**1813.87**	**1837.83**	**1866.99**	**1908.40**

23. The Petitioner has claimed the following revised transmission charges for the Combined Asset for 2009-14 period in the instant petition:

(₹ in lakh)

Particulars	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Depreciation	552.36	179.94	179.89	180.92	182.09
Interest on Loan	147.88	111.27	93.22	76.54	59.84
Return on Equity	754.13	781.78	782.48	783.62	794.28
Interest on Working Capital	63.04	56.96	58.58	60.37	62.48
O&M Expenses	654.26	691.59	731.32	773.20	817.37
Total	**2171.67**	**1821.54**	**1845.49**	**1874.66**	**1916.07**

24. We have considered the Petitioner's claim. The tariff is allowed for Combined Asset on the basis of the following:

a) Admitted capital cost of ₹11040.90 lakh as on 1.4.2009.

b) Weighted Average Rate of Interest on actual loan derived/ adopted from order dated 28.1.2016 in Petition No. 240/TT/2014.

c) Weighted Average Rate of Depreciation (WAROD) as per order dated 28.1.2016 in Petition No. 240/TT/2014.

25. In view of above, the revised transmission charges allowed for Combined Asset for 2009-14 tariff period are as follows.

(₹ in lakh)

Particulars	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Depreciation	552.36	179.94	179.89	180.92	182.09
Interest on Loan	159.01	122.41	104.34	87.68	70.97
Return on Equity	754.13	781.78	782.48	783.62	794.28
Interest on Working Capital	63.27	57.19	58.81	60.61	62.71
O&Mexpenses	654.26	691.59	731.32	773.20	817.37
Total	**2183.04**	**1832.90**	**1856.85**	**1886.02**	**1927.43**

26. AFC allowed earlier for 2009-14 period *vide* order dated 1.6.2011 in Petition No. 197/2010 and subsequently *vide* order dated 28.1.2016 in Petition No. 240/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 *vide* order dated 28.1.2016 in Petition No 240/TT/2014	2164.01	1813.87	1837.83	1866.99	1908.40
AFC claimed by the Petitioner in the instant petition	2171.67	1821.54	1845.49	1874.66	1916.07
AFC allowed in the instant order	2183.04	1832.90	1856.85	1886.02	1927.43

<u>Truing up of Annual Fixed Charges for 2014-19 Tariff Period</u>

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	197.25	198.44	199.84	199.94	200.31
Interest on Loan	40.90	22.30	6.61	-	-
Return on Equity	794.89	799.55	800.25	800.33	802.01
Interest on Working Capital	65.26	66.34	67.46	68.77	70.34
O&M Expenses	750.82	775.75	801.63	828.02	855.73
Total	**1849.12**	**1862.38**	**1875.79**	**1897.06**	**1928.39**

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	62.57	64.65	66.80	69.00	71.31
Maintenance Spares	112.62	116.36	120.24	124.20	128.36
Receivables	308.19	310.40	312.63	316.18	321.40
Total Working Capital	**483.38**	**491.41**	**499.67**	**509.38**	**521.07**
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	**65.26**	**66.34**	**67.46**	**68.77**	**70.34**

<u>Capital Cost as on 1.4.2014</u>

29. The capital cost of the Combined Asset has been calculated in accordance with Regulation 9(3) and Regulation 9(6) of the 2014 Tariff Regulations. The Commission *vide* order dated 28.1.2016 in Petition No. 240/TT/2014 admitted the capital cost as on 1.4.2014 of ₹11080.58 lakh and capital cost as on 1.4.2019 of ₹11145.80 lakh

including projected net ACE of ₹65.22 lakh for determination of tariff for 2014-19 period for Combined Asset. The same is summarized as follows:

(₹ in lakh)

Admitted Capital Cost as on 31.3.2014	Admitted ACE during 2014-19		Admitted Capital Cost as on 31.3.2019
	2014-15	2015-16	
11080.58	58.40	6.82	11145.80

30. The Petitioner has claimed the same capital cost as on 1.4.2014 of ₹11080.58 lakh in respect of the Combined Asset and it has been considered for working out the trued-up tariff for 2014-19 period.

<u>Additional Capital Expenditure (ACE)</u>

31. The Commission allowed net ACE of ₹65.22 lakh in respect of the Combined Asset for 2014-19 period towards balance and retention payments *vide* order dated 28.1.2016 in Petition No. 240/TT/2014.

32. The Petitioner has submitted that as against net ACE of ₹65.22 lakh allowed by the Commission for 2014-19 tariff period as recommended and approved in 15th TCC and 15th NER Power Committee meeting held on 21.8.2015 for the provision of expenditure against retention payment for replacement of PLCC, Nitrogen injection fire alarm system as per CEA notification dated 20.8.2010, installation of bus bar protection scheme at Dimapur Sub-station and expenditure against installation of fire alarm system in Control Room at Dimapur. Accordingly, expenditure has been made during the years 2015-16 and 2016-17 for efficient and reliable operation of the system and has been claimed under Regulation 14(3)(vii) of the 2014 Tariff Regulations. Further, the Petitioner has claimed de-capitalization of ₹9.54 lakh during 2018-19 on account of de-capitalization of CTs and conductor due to re-conductoring work done under NERSS-VII. The Petitioner has claimed net ACE of ₹27.64 lakh as follows:

(₹ in lakh)

ACE		De-capitalization
2015-16	2016-17	2018-19
34.46	2.72	9.54

33. In response to the Commission's query on vendor-wise details of ACE amounting to ₹34.46 lakh and ₹2.72 lakh during 2015-16 and 2016-17 respectively towards balance and retention payment, the Petitioner *vide* affidavit dated 4.5.2020 has submitted the following:

(₹ in lakh)

Sr. No.	Party Name	ACE as per Auditor Certificate	Balance and Retention payment	ACE during the year
	Year of ACE 2015-16			
1	ABB Ltd	1.10	1.10	--
2	GE T&D	22.13	5.60	16.53
3	CTR manufacturing	5.12	0.82	4.30
4	Siemens Ltd	6.11	--	6.11
	Total (2015-16)	**34.46**	**7.52**	**26.94**
	Year of ACE 2016-17			
1	GE T&D	1.48	1.48	--
2	Siemens Ltd	1.24	0.60	0.64
	Total (2016-17)	**2.72**	**2.08**	**0.64**

34. The Petitioner has submitted that in case of 132 kV D/C Imphal-Yurembam (Imphal Sub-station in Manipur), re-conductoring has been done w.e.f. 18.7.2018 under NERSS-VII project covered in Petition No. 175/TT/2018 as approved in NERPC. Accordingly, the gross block has been de-capitalized from the Combined Asset in 2018-19 and tariff has been calculated.

35. During the hearing dated 8.6.2021, the Petitioner was directed to submit the liability flow statement towards ACE. Accordingly, the Petitioner *vide* affidavit dated 18.6.2021 has submitted the liability flow statement towards ACE and de-capitalization for 2014-19 tariff period.

36. We have considered the submissions made by the Petitioner. ACE claimed by the Petitioner has been allowed under Regulation 14(3)(vii) of the 2014 Tariff Regulations. ACE allowed in respect of Combined Asset from 1.4.2014 to 31.3.2019 is as follows:

(₹ in lakh)

ACE		De-capitalization
2015-16	2016-17	2018-19
34.46	**2.72**	**9.54**

Debt-Equity ratio

37. 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, debt-equity ratio of 63.45:36.55 allowed by the Commission for determination of tariff for the period ending on 31.3.2014 has been considered for the purpose of truing up of the tariff in respect of the Combined Asset for 2014-19 tariff period. For de-capitalization of asset in 2018-19, the Petitioner has considered debt-equity ratio of 50:50 and the same has been considered. Debt-equity ratio of 70:30 is considered for ACE of the Combined Asset as provided in Regulation 19 of the 2014 Tariff Regulations. The details of debt-equity ratio as on 1.4.2014 and 31.3.2019 in respect of the Combined Asset is as follows:

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	(%)	ACE during 2014-19 (₹ in lakh)	(%)	De-capitalization in 2018-19 (₹ in lakh)	(%)	Total Capital Cost as on 31.3.2019 (₹ in lakh)	(%)
(A)	(B)		(C)		(D)		(E)=(B)+(C)-(D)	
Debt	7030.19	63.45	26.03	70.00	4.77	50.00	7051.45	63.48
Equity	4050.39	36.55	11.15	30.00	4.77	50.00	4056.77	36.52
Total	**11080.58**	**100.00**	**37.18**	**100.00**	**9.54**	**100.00**	**11108.22**	**100.00**

Depreciation

38. Depreciation has been worked out as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. The notional COD of the transmission

assets is 1.4.1997. The Weighted Average Life for the Combined Asset was considered as 31 years. Accordingly, the Combined Asset has already completed 12 years of useful life before 1.4.2014. Hence, depreciation has been calculated based on the remaining depreciable value (up to 90% of existing gross block of Combined Asset to be recovered over the balance useful life in accordance with Regulation 27(5) of the 2014 Tariff Regulations. Accordingly, the trued-up depreciation during 2014-19 period is as follows:

(₹ in lakh)

Particulars	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Gross Block	11080.58	11080.58	11115.04	11117.76	11117.76
ACE	0.00	34.46	2.72	0.00	0.00
De-capitalization	0.00	0.00	0.00	0.00	9.54
Closing Gross Block	11080.58	11115.04	11117.76	11117.76	11108.22
Average Gross Block	11080.58	11097.81	11116.40	11117.76	11112.99
Freehold Land	57.39	57.39	57.39	57.39	57.39
Weighted average rate of Depreciation (WAROD) (%)	1.75%	1.76%	1.77%	1.77%	1.77%
Balance useful life of the asset (Year)	14	13	12	11	10
Lapsed life at the beginning of the year (Year)	17	18	19	20	21
Aggregate Depreciable Value	9920.87	9936.38	9953.11	9954.33	9950.04
Combined Depreciation during the year	**194.07**	**195.26**	**196.65**	**196.76**	**196.33**
Cumulative Depreciation at the end of the year	7398.03	7593.28	7789.94	7986.70	8175.19
Remaining Aggregate Depreciable Value at the end of the year	2522.85	2343.09	2163.17	1967.63	1774.85

39. The details of depreciation approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014, depreciation claimed by the Petitioner in the instant petition and as trued up in the instant order is as follows:

(₹ in lakh)

Particulars	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	183.86	185.96	186.19	186.19	186.19
Claimed by the Petitioner in the instant petition	197.25	198.44	199.84	199.94	200.31

Allowed after true-up in this order	194.07	195.26	196.65	196.76	196.33

Interest on Loan (IoL)

40. The Petitioner has claimed IoL based on actual interest rates for each year during 2014-19 period. We have considered the submissions of the Petitioner and accordingly calculated IoL based on actual interest rate, in accordance with Regulation 26 of the 2014 Tariff Regulations. The Petitioner has not claimed IoL for the year 2018-19. IoL allowed in respect of the Combined Asset is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18
Gross Normative Loan	7030.19	7030.19	7054.31	7056.22
Cumulative Repayments up to Previous Year	6411.26	6605.32	6800.58	6997.23
Net Loan-Opening	618.93	424.87	253.73	58.98
Additions	0.00	24.12	1.90	0.00
De-capitalisation	0.00	0.00	0.00	0.00
Repayment during the year	194.07	195.26	196.65	58.98
Adjustment of cumulative repayment pertaining to the decapitalised asset	0.00	0.00	0.00	0.00
Net Loan-Closing	424.87	253.73	58.98	0.00
Average Loan	521.90	339.30	156.36	29.49
Weighted Average Rate of Interest on Loan (%)	10.000	9.990	9.714	8.203
Interest on Loan	**52.19**	**33.90**	**15.19**	**2.42**

41. The details of IoL approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014, IoL 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
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	36.10	19.89	5.42	0.00
Claimed by the Petitioner in the instant petition	40.90	22.30	6.61	0.00
Allowed after true-up in this order	52.19	33.90	15.19	2.42

Return on Equity (RoE)

42. The Petitioner has claimed RoE in respect of the Combined Asset in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at 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	19.624
2015-16	21.382	19.715
2016-17	21.338	19.704
2017-18	21.337	19.704
2018-19	21.549	19.757

43. 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 (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*

44. MAT rates are considered (as allowed in 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 period in terms of the provisions of the 2014 Tariff Regulations 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

45. The Petitioner has claimed RoE for 2014-19 period after grossing up the RoE of 15.50% with Effective Tax rates (based on MAT rates) each year. RoE is trued up on the basis of the MAT rate applicable in the respective years and is allowed in respect of the Combined Asset as follows:

(₹ in lakh)

Particulars	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Equity	4050.39	4050.39	4060.73	4061.54	4061.54
Additions	0.00	10.34	0.82	0.00	0.00
De-capitalization	0.00	0.00	0.00	0.00	4.77
Closing Equity	4050.39	4060.73	4061.54	4061.54	4056.77
Average Equity	4050.39	4055.56	4061.13	4061.54	4059.16
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	**794.28**	**799.15**	**800.25**	**800.33**	**802.01**

46. The details of RoE approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014, RoE 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**
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	796.02	797.94	798.14	798.14	798.14
Claimed by the Petitioner in the instant petition	794.89	799.55	800.25	800.33	802.01
Allowed after true-up in this order	794.28	799.15	800.25	800.33	802.01

<u>Operation & Maintenance Expenses (O&M Expenses)</u>

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

(₹ in lakh)

Particulars	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
9 Numbers 220 kV Sub-station bays					
9 Numbers of 132 kV and below Sub-station bays					
168.865 km S/C (Single Conductor) (132 kV Dimapur-Imphal S/Cline 168.865 km)					
216.046 km D/C (Single Conductor) (220 kV Dimapur-Misa D/C line (123.520 km), 132 kV D/C Doyang-Dimapur T/L (92.526 km)					
Claimed by the Petitioner in the instant petition	**750.82**	**775.75**	**801.63**	**828.02**	**855.73**

48. 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 Combined Asset are as follows:

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

49. We have considered the submissions of the Petitioner. The O&M Expenses allowed under Regulation 29(3) of the 2014 Tariff Regulations are as follows:

Details	2014-15	2015-16	2016-17	2017-18	2018-19
9 Numbers 220 kV Sub-station bays	379.89	392.49	405.54	418.95	432.90
9 Numbers of 132 kV and below Sub-station bays	271.35	280.35	289.62	299.25	309.24
168.865 km S/C (Single Conductor) (132 kV Dimapur-Imphal S/Cline 168.865 km)	34.11	35.29	36.47	37.66	38.84
216.046 km D/C (Single Conductor) (220 kV Dimapur-Misa D/C line (123.520 km), 132 kV D/C Doyang-Dimapur T/L (92.526 km)	65.46	67.62	70.00	72.16	74.75
Total	**750.81**	**775.76**	**801.63**	**828.02**	**855.73**

50. The details of O&M Expenses approved *vide* order dated 28.1.2016 in Petition No. 240/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
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	750.81	775.76	801.63	828.02	855.73
Claimed by the Petitioner in the instant petition	750.82	775.75	801.63	828.02	855.73
Allowed after true-up in this order	750.81	775.76	801.63	828.02	855.73

Interest on Working Capital ("IWC")

51. IWC has been worked out as per the methodology provided under Regulation 28 of the 2014 Tariff Regulations. The trued up IWC allowed in respect of the Combined Asset is as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses (O&M Expenses for One month)	62.57	64.65	66.80	69.00	71.31
Maintenance Spares (15% of O&M Expenses)	112.62	116.36	120.25	124.20	128.36
Receivables (Equivalent to 2 months of fixed cost)	309.46	311.76	313.55	316.05	320.72
Total Working Capital	**484.65**	**492.77**	**500.60**	**509.25**	**520.39**
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on working capital	**65.43**	**66.52**	**67.58**	**68.75**	**70.25**

52. The details of IWC approved *vide* order dated 28.1.2016 in Petition No. 240/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
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	64.86	65.96	67.07	68.40	69.93
Claimed by the Petitioner in the instant petition	65.26	66.34	67.46	68.77	70.34
Allowed after true-up in this order	65.43	66.52	67.58	68.75	70.25

Approved Annual Fixed Charges for 2014-19 Tariff Period

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	194.07	195.26	196.65	196.76	196.33
Interest on Loan	52.19	33.90	15.19	2.42	0.00
Return on Equity	794.28	799.15	800.25	800.33	802.01
Interest on Working Capital	65.43	66.52	67.58	68.75	70.25
O&M Expenses	750.81	775.76	801.63	828.02	855.73
Total	**1856.78**	**1870.58**	**1881.30**	**1896.27**	**1924.33**

54. Accordingly, Annual Transmission Charges approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014, as claimed by the Petitioner and as approved after truing up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Approved *vide* order dated 28.1.2016 in Petition No. 240/TT/2014	1831.65	1845.50	1858.45	1880.75	1909.99
Claimed by the Petitioner in the instant petition	1849.12	1862.38	1875.79	1897.06	1928.39
Allowed after true-up in this order	1856.78	1870.58	1881.30	1896.27	1924.33

<u>Determination of Annual Fixed Charges for 2019-24 Tariff Period</u>

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

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	199.82	199.84	246.22	258.93	258.91
Interest on Loan	0.00	0.00	2.85	2.85	0.00
Return on Equity	761.94	761.94	764.57	767.19	767.19
Interest on Working Capital	36.16	36.98	38.48	39.59	40.32
O&M Expenses	497.82	515.25	533.33	551.95	571.25
Total	**1495.74**	**1514.01**	**1585.45**	**1620.51**	**1637.67**

56. 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	41.49	42.94	44.44	46.00	47.60
Maintenance Spares	74.67	77.29	80.00	82.79	85.69
Receivables	183.90	186.66	194.87	199.79	201.35
Total Working Capital	**300.06**	**306.89**	**319.31**	**328.58**	**334.64**
Rate of Interest (%)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	**36.16**	**36.98**	**38.48**	**39.59**	**40.32**

<u>Capital Cost as on 1.4.2019</u>

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

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

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

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

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

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

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

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

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

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

(h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;

(i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;

(k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;

(l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;

(m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;

(n) Expenditure on account of change in law and force majeure events; and

(o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

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

(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;

(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;

(c) Capital expenditure on account of 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."

58. The Petitioner has claimed capital cost of ₹11108.22 lakh as on 31.3.2019 in respect of the Combined Asset. The same capital cost has been admitted by the Commission as on 31.3.2019 and 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)

59. 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 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."*

60. The Petitioner has claimed net ACE of ₹234.05 lakh during 2019-24 period in respect of the Combined Asset under Regulation 25(2)(c) of the 2019 Tariff Regulations. The capital cost as on 31.3.2024 claimed by the Petitioner is as follows:

(₹ in lakh)

Total Capital Cost as on 1.4.2019	Projected ACE	Projected De-capitalization	Total Capital Cost as on 31.3.2024
	2021-22	2021-22	
11108.22	445.47	211.42	11342.27

61. The Petitioner has submitted that ACE and de-capitalization to be incurred during 2021-22 is on account of expenditure towards replacement of old and obsolete Isolator, CT, line protection panel at Misa sub-station. However, due to aging 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 ageing. In some cases, repair from manufacturer is either not possible due to obsolescence (transferred to live tank from dead tank) or techno-economically not beneficial. Further, the Petitioner has submitted that all the relays at Misa Sub-station are of static/ electro-mechanical type and giving frequent problems and are also obsolete. These need to be retrofitted with numerical type relays which may support latest communication protocol.

62. In response to the Commission's query with respect to the details of ACE and de-capitalization during 2019-24 tariff period, the Petitioner *vide* affidavit dated 4.5.2020 has submitted the following:

A. Isolators (28 set):

a. These Isolators are of S&S power make and going to complete 25 years of service during 2019-24 tariff period.

b. These isolators are mainly of horizontal centre break (HCB) type and frequent problems of mis-alignment 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 problems in maintaining these old isolators. Rusting has also been observed in gear assembly and mechanism box. Due to these constraints in maintaining isolators, frequent breakdowns are being experienced despite all efforts. Due to improper health of isolator specially interlock mechanism, drive mechanism etc. the isolators are unable to maintain stable condition during storms and high wind conditions and 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 have been damaged and operation of motors is not possible. Due to aging, the TBs inside the MOM boxes have become brittle and many times DC cables come in contact with boxes and create DC earth fault which is detrimental to the system.

d. Many times even local operation becomes difficult. Further, timely support is not available from OEM.

e. In view of this, it is proposed to replace 28 sets of 220 kV Isolators at Misa.

B. Current Transformer (CT):

a. These current transformers are of BHEL/WSI make and are going to complete 25 years of service in 2019-24 tariff period. Due to aging, leakage from multiple points is observed. In some cases, oil seepage from bottom of tank is also observed.

b. Leakage may lead to moisture ingress and subsequent failure. The current transformers are hermetically sealed equipment and repair at site is not feasible. Further, as there is ingress of moisture, complete replacement of winding is required at manufacturer's works which will not be techno-economically viable. OEM has already stopped manufacturing this product. M/s GE vide e-mails dated 10.12.2019 and 25.8.2015 has stated that they have discontinued manufacturing of these type of WSI make CT.

c. In view of this, it is proposed to replace 13 numbers 220 kV CTs at Misa Sub-station.

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

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

b. These relays are of electro-magnetic/ 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 any spares' failure, the relays are to be kept out of service to avoid mal-operation and the only option is replacement.

d. Due to aging, problem of mal-operation/ non-operation occurs because of stucking up of contacts and problem in the coils.

e. Further, these relays are not numerical type and do not comply with IEC 61850. The relays do not have DR and time synchronization facility and, therefore, do not help in fault analysis through stored tripping and event data.

f. The cable, wiring and terminal blocks inside both control & protection panels and equipment MBs have become brittle leading to DC leakages and other circuit failures. TBs of suitable sizes are also not available in market for replacement and it is not feasible to replace TBs and wiring inside these panels.

g. Due to aging, most of the cables laid in the sub-station have been damaged, causing DC earth fault and sometimes mal-operation of system. Presently, control and power cables are laid between central control room and switchyard equipment. Replacement of cables may require long outage of the sub-station, which may not be feasible. Replacement of old C&R panels alongwith power and control cables with SAS based C&R panels along with SCADA shall be the most feasible and techno-economical solution. This will require very less quantity of power and control cables and shall also comply with latest technical requirement. In this case, the outage of system shall also be less.

h. In view of above, it is proposed to replace line protection panel at Imphal & Misa Sub-stations with SAS based C&R panel alongwith SCADA.

63. Further, the Petitioner has confirmed that there are no previously recognised liabilities remaining to be discharged in 2019-24 tariff period. The Petitioner *vide* affidavit dated 18.6.2021 has submitted the liability flow statement towards ACE and decapitalization in 2019-24 tariff period as per the directions of the Commission.

64. We have considered the submissions of the Petitioner. ACE claimed by the Petitioner is towards replacement of various sub-station equipment such as Isolators

(28 sets), Current Transformer (CT), Replacement of Control panels and protection panels with SAS based C&R panel along with SCADA and these are allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The Petitioner is directed to submit the actual cost of the replaced equipment details and cost estimate of the replaced equipment sub-station-wise at the time of truing up.

65. Accordingly, the capital cost considered for 2019-24 tariff period in respect of the Combined Asset is as follows:

(₹ in lakh)

Total Capital Cost as on 1.4.2019	**Projected ACE**	**Projected De-capitalization**	**Total Capital Cost as on 31.3.2024**
	2021-22	**2021-22**	
11108.22	445.47	211.42	11342.27

<u>Debt-Equity ratio</u>

66. 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."

67. Debt-equity for the purpose of computation of tariff for 2019-24 period is allowed as per Regulation 18 of the 2019 Tariff Regulations. The de-capitalisation of the Combined Asset in the instant case is carried out in the debt-equity ratio of 50:50 as claimed by the Petitioner. Debt-equity considered for the purpose of computation of tariff for 2019-24 period as follows:

Funding	**Capital Cost as on 1.4.2019 (₹ in lakh)**	**%**	**ACE in 2021-22 (₹ in lakh)**	**%**	**De-capitalization in 2021-22 (₹ in lakh)**	**%**	**Capital Cost as on 31.3.2024 (₹ in lakh)**	**%**
(A)	(B)		(C)		(D)		(E)=(B)+(C)-(D)	
Debt	7051.45	63.48	311.83	70.00	105.71	50.00	7257.57	63.99
Equity	4056.77	36.52	133.64	30.00	105.71	50.00	4084.70	36.01
Total	**11108.22**	**100.00**	**445.47**	**100.00**	**211.42**	**100.00**	**11342.27**	**100.00**

<u>Depreciation</u>

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

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

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

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the 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."

69. Depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. The Combined Asset has already completed 12 years of useful life before 1.4.2019. Accordingly, depreciation has been calculated based on the remaining depreciable value (up to 90% of the existing gross block of Combined Asset) to be recovered over the balance useful life in accordance with Regulation 33(5) of the 2019 Tariff Regulations. Depreciation allowed in respect of the Combined Asset for 2019-24 period is as follows:

(₹ in lakh)

Particulars	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Gross Block	11108.22	11108.22	11108.22	11342.27	11342.27
ACE	0.00	0.00	445.47	0.00	0.00
De-capitalization	0.00	0.00	211.42	0.00	0.00
Closing Gross Block	11108.22	11108.22	11342.27	11342.27	11342.27
Average Gross Block	11108.22	11108.22	11225.25	11342.27	11342.27
Freehold Land	57.39	57.39	57.39	57.39	57.39
Weighted average rate of Depreciation (WAROD) (%)	1.77%	1.77%	1.89%	2.29%	2.29%
Balance useful life of the asset (Year)	9	8	7	6	5
Lapsed life at the beginning of the year (Year)	22	23	24	25	26
Aggregate Depreciable Value	9945.75	9945.75	10051.07	10156.39	10156.39
Combined Depreciation during the year	**196.73**	**196.73**	**211.77**	**260.23**	**260.23**

Cumulative Depreciation at the end of the year	8371.92	8568.65	8595.00	8855.24	9115.47
Remaining Aggregate Depreciable Value at the end of the year	1573.83	1377.10	1456.07	1301.16	1040.93

Interest on Loan (IoL)

70. 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."

71. The Petitioner has claimed the IoL for the year 2021-22 and 2022-23 only.

72. Gross normative loan to the extent of ₹7051.45 lakh has already been repaid prior to 1.4.2019 and, therefore, IoL has been considered on ACE.

73. 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 truing up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations and the same is as follows:

(₹ in lakh)

Particulars	2021-22	2022-23
Gross Normative Loan	7051.45	7257.57
Cumulative Repayments upto Previous Year	7051.45	7157.51
Net Loan-Opening	0.00	100.05
Additions	311.83	0.00
Decapitalisation	105.71	0.00
Repayment during the year	211.77*	100.05
Adjustment of cumulative repayment pertaining to decapitalised asset	105.71	0.00
Net Loan-Closing	100.05	0.00
Average Loan	50.03	50.03
Weighted Average Rate of Interest on Loan (%)	8.1015	8.0830
Interest on Loan	**4.05**	**4.04**

**Normative repayment of loan equal to depreciation*

Return on Equity (RoE)

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

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

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

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization 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:

Rate of pre-tax return on equity = Base rate / (1-t)

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

Illustration-

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

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

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

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

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

75. The Petitioner has submitted that MAT rate is applicable to the Petitioner's Company. Accordingly, MAT rate applicable in 2019-20 has been considered for the purpose of RoE which shall be trued up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed in respect of the Combined Asset is as follows:

(₹ in lakh)

Particulars	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Equity	4056.77	4056.77	4056.77	4084.70	4084.70
Additions of equity	0.00	0.00	133.64	0.00	0.00
Decapitalisation	0.00	0.00	105.71	0.00	0.00
Closing Equity	4056.77	4056.77	4084.70	4084.70	4084.70
Average Equity	4056.77	4056.77	4070.74	4084.70	4084.70
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	**761.94**	**761.94**	**764.57**	**767.19**	**767.19**

Operation & Maintenance Expenses (O&M Expenses)

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

(₹ in lakh)

Details	2019-20	2020-21	2021-22	2022-23	2023-24
9 Numbers 220 kV sub-station bays	202.59	209.70	217.08	224.64	232.56
9 Numbers of 132 kV and below sub-station bays	144.72	149.76	155.07	160.47	166.14
168.865 km S/C (Single Conductor) (132 kV Dimapur-Imphal S/Cline 168.865 km)	42.55	43.90	45.59	47.11	48.80
216.046 km D/C (Single Conductor) (220 kV Dimapur-Misa D/C line (123.520 km), 132 kV D/C Doyang-Dimapur T/L (92.526 km)	81.45	84.48	87.28	90.52	93.54
220 kV sub-station 100 MVA ICT	24.50	25.40	26.30	27.20	28.20
PLCC	2.01	2.01	2.01	2.01	2.01
Total	**497.82**	**515.25**	**533.33**	**551.95**	**571.25**

77. The norms specified under Regulation 35(3)(a) and 35(4) of the 2019 Tariff Regulations provide as follows:

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

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

Double Circuit (Bundled conductor with four or more sub-conductors)	*1.322*	*1.368*	*1.416*	*1.466*	*1.517*
Double Circuit (Twin & Triple Conductor)	*0.881*	*0.912*	*0.944*	*0.977*	*1.011*
Double Circuit (Single Conductor)	*0.377*	*0.391*	*0.404*	*0.419*	*0.433*
Multi Circuit (Bundled Conductor with four or more sub-conductor)	*2.319*	*2.401*	*2.485*	*2.572*	*2.662*
Multi Circuit (Twin & Triple Conductor)	*1.544*	*1.598*	*1.654*	*1.713*	*1.773*
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except 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."*

78. 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.

79. O&M Expenses allowed in respect of the Combined Asset are as follows:

(₹ in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
O&M Expenses					
9 Numbers of 220 kV bays					
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84

Total	202.59	209.70	217.08	224.64	232.56
9 Numbers of 132 kV or below bays					
Norms (₹ lakh/Bay)	16.08	16.64	17.23	17.83	18.46
Total	144.72	149.76	155.07	160.47	166.14
168.865 km S/C (Single Conductor)					
Norms (₹ lakh/km)	0.252	0.26	0.27	0.279	0.289
Total	42.55	43.90	45.59	47.11	48.80
216.046 km S/C (Twin/Triple Conductor)					
Norms (₹ lakh/km)	0.377	0.391	0.404	0.419	0.433
Total	81.45	84.47	87.28	90.52	93.55
1 Number of 220 kV Sub-station ICT (100 MVA)					
Norms (₹ lakh/MVA)	0.245	0.254	0.263	0.272	0.282
Total	24.50	25.40	26.30	27.20	28.20
Total O&M expenses allowed (₹ in lakh)	**495.81**	**513.24**	**531.33**	**549.95**	**569.25**

<u>Interest on Working Capital (IWC)</u>

80. 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;"*

81. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. Rate of Interest (ROI) considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, ROI for 2020-21 has been considered as 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points), whereas ROI for 2021-22 onwards has been considered as 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon is as follows:

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for One month)	41.32	42.77	44.28	45.83	47.44
Working Capital for Maintenance Spares (15% of O&M Expenses)	74.37	76.99	79.70	82.49	85.39
Working Capital for Receivables (Receivables equivalent to 45 days of annual fixed cost)	183.26	185.71	190.45	199.21	200.62
Total Working Capital	**298.95**	**305.46**	**314.42**	**327.53**	**333.44**
Rate of Interest (%)	12.05	11.25	10.50	10.50	10.50
Interest on working capital	**36.02**	**34.36**	**33.01**	**34.39**	**35.01**

<u>**Annual Fixed Charges of 2019-24 Tariff Period**</u>

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

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	196.73	196.73	211.77	260.23	260.23
Interest on Loan	0.00	0.00	4.05	4.04	0.00
Return on Equity	761.94	761.94	764.57	767.19	767.19
Interest on Working Capital	36.02	34.36	33.01	34.39	35.01
O&M Expenses	495.81	513.24	531.33	549.95	569.25
Total	**1490.51**	**1506.27**	**1544.73**	**1615.80**	**1631.68**

Filing Fee and Publication Expenses

83. 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 is entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

Licence Fee & RLDC Fees and Charges

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 Combined Asset are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential IWC.

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

Capital Spares

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 was governed by the provisions 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 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. Billing, collection and disbursement of transmission charges for subsequent period shall be recovered in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

91. To summarise,

(a) The revised AFC allowed in respect of the transmission assets as per the APTEL’s judgements are as follows:

(₹ in lakh)

Particulars	2007-08	2008-09
Asset 1	975.59	977.07
Asset 2	974.40	952.51

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

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
AFC	2183.04	1832.90	1856.85	1886.02	1927.43

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017–18	2018-19
AFC	1856.78	1870.58	1881.30	1896.27	1924.33

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

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	**1490.51**	**1506.27**	**1544.73**	**1615.80**	**1631.68**

92. This order disposes of Petition No. 148/TT/2020 in terms of the above discussions and findings.

sd/-	sd/-	sd/-
(Pravas Kumar Singh)	**(I.S. Jha)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**