

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 320/TT/2020

Coram:

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

Date of order: 08.12.2022

In the matter of

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

And in the matter of:

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

.....Petitioner

Vs.

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited,
Vidyut Bhawan, Vidyut Marg, Jaipur – 302 005.
2. Ajmer Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub-station Building,
Caligiri Road, Malviya Nagar, Jaipur – 302 017.
3. Jaipur Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub-station Building,
Caligiri Road, Malviya Nagar, Jaipur – 302 017.
4. Jodhpur Vidyut Vitran Nigam Limited,
132 kV, GSS RVPNL Sub- station Building,
Caligiri Road, Malviya Nagar, Jaipur – 302 017.



5. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building II,
Shimla – 171 004.
6. Punjab State Electricity Board,
The Mall, Patiala – 147 001.
7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula (Haryana) 134 109.
8. Power Development Deptt.,
Govt. of Jammu & Kashmir,
Mini Secretariat, Jammu.
9. Uttar Pradesh Power Corporation Limited,
(Formerly Uttar Pradesh State Electricity Board),
Shakti Bhawan, 14, Ashok Marg,
Lucknow - 226 001.
10. Delhi Transco Limited,
Shakti Sadan, Kotla Road,
New Delhi-110 002.
11. BSES Yamuna Power Limited,
BSES Bhawan, Nehru Place,
New Delhi.
12. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi.
13. Tata Power Delhi Distribution Limited,
33 kV Sub-station, Building, Hudson Lane,
Kingsway Camp, North Delhi – 110 009.
14. Chandigarh Administration,
Sector - 9, Chandigarh.
15. Uttarakhand Power Corporation Limited,
Uja Bhawan, Kanwali Road,
Dehradun.
16. North Central Railway,
Allahabad.
17. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi – 110 002.

...Respondent(s)



For Petitioner : Shri S.S. Raju, PGCIL
Shri D.K. Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Shri Amit Yadav, PGCIL

For Respondents : None

ORDER

Power Grid Corporation of India Limited has filed the instant petition for revision of transmission tariff of the 2001-04, 2004-09 and 2009-14 tariff periods and truing up of transmission tariff of the 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) and for determination of transmission tariff of the 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for transmission assets under Nathpa-Jhakri Transmission System (hereinafter referred to as the “combined asset”) in Northern Region.

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

“1) Approve the revised Transmission Tariff for 2001-04, 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 trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition., as per para 9 and 10 above.

3) Allow fresh add- cap projected during 2019-24 and unrecovered depreciation as part of the Tariff of 2019-24.

4) 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 Regulations 2014 and Tariff Regulation 2019 as per para 9.0 & 10 above for respective block.

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 materialized directly without making any application before the commission as provided in the regulation.

5) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.

6) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.

7) Allow the petitioner to 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.

8) 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.

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

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

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

Backdrop of the case

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

(a) The investment approval (IA) for the transmission system was accorded by the Ministry of Power, Government of India, vide letter dated 5.4.1989 at an estimated cost of ₹88995 lakh, including IDC of ₹9559 lakh (1st quarter 1989 price level), which was subsequently revised vide letter dated 25.5.2001 with the revised cost estimate of ₹156163 lakh, including IDC of ₹35358 lakh.

(b) The transmission assets covered under the transmission system is as follows:



Asset	Description of Assets	COD
Asset-i	315 MVA ICT-II at Malerkotla Sub-station	1.4.1996
Asset-ii	400 kV Hissar-Jaipur Transmission Line with associated bays	1.8.1997
Asset-iii	400 kV Bawana-Bhiwani-I and Bawana-Bhiwani-II transmission lines with associated bays	1.2.1998
Asset-iv	400 kV D/C Abdullapur-Bawana transmission line with associated bays, 315 MVA ICT-II at Abdullapur Sub-station, 220 KV Jorian (HVPNL) bay at Abdullapur Sub-station; and 400 KV D/C Nalagarh-Hissar transmission line with associated bays	1.1.2000
Asset-v	ICT-I at Nalagarh with associated bays,	1.9.2000
Asset-vi	ICT-II at Nalagarh with associated bays	1.3.2000
Asset-vii	ICT-II at Jalandhar with associated bays	1.1.2001
Asset-viii	Bus Reactor at Nalagarh with associated bays	1.4.2000
Asset-ix	ICT-I at Jaipur (Bassi)	1.10.2000
Asset-x	Two nos LILO bays associated with ICT-Jaipur	1.12.2000
Asset-xi	ICT-II at Jaipur with associated bays	1.3.2001
Asset-xii	220 kV Jalandhar-Dasuya line	1.1.2001
Asset-xiii	LILO of Chamera-Moga transmission line and ICT-I at Jalandhar with associated bays,	1.1.2001
Asset-xiv	400 kV D/C Naptha-Jhakri-Nalagarh transmission line with associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar	1.4.2003
Asset-xv	400 kV D/C Nathpa-Jhakri-Abdullapur transmission line ICT-I, Bus Reactor and 2 Nos 220 kV bays at Abdullapur for Tepla (HVPNL)	1.4.2003

(c) The Commission vide order dated 3.6.2016 in Petition No. 26/TT/2015 has combined all the transmission assets and determined E-COD as 6.9.2001.

(d) The transmission tariff of the combined asset for 2009-14 tariff period was trued-up and transmission tariff for 2014-19 period was allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015.

(e) The Petitioner has sought revision of transmission tariff allowed for 2001-04 and 2004-09 tariff periods 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 judgements of the Appellate Tribunal for Electricity (“the APTEL”) dated 22.1.2007 in Appeal No. 81 of 2005 and batch



matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters. The Petitioner has sought consequential revision of transmission tariff allowed for the 2009-14 tariff period, truing-up of transmission tariff of the 2014-19 tariff period and determination of transmission tariff of the 2019-24 tariff period for the combined asset.

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

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

6. We have considered the submissions of the Petitioner regarding the revision of tariff of 2001-04, 2004-09 and 2009-14 tariff periods. The APTEL vide judgment 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 will be computed only on normative loan repayment as per its judgment dated 14.11.2006 in Appeal No. 94 of 2005 and Appeal No. 96 of 2005. APTEL vide its judgment dated 14.11.2006 had set aside the Commission's methodology of computation of loan on actual repayment basis or normative repayment whichever is higher and held that the Commission is required to adopt normative debt repayment methodology for working out IoL liability order for the period from 1.4.1998 to 31.3.2001. The APTEL vide judgment dated 13.6.2007 in Appeal No. 139/2006 and



batch matters further held that Additional Capital Expenditure (ACE) after COD should also be considered for computation of maintenance spares. Further, the APTEL in its judgement dated 13.6.2007 in Appeal No.139 of 2006 and batch matters observed that depreciation is an expense and it cannot be deployed for deemed repayment of loan and accordingly directed the Commission to compute the outstanding loan afresh. In view of above directions of the APTEL, the Petitioner has filed the instant petition seeking revision of the outstanding loan allowed for the transmission assets for 2001-04 and 2004-09 tariff period.

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

8. The Hon'ble Supreme Court vide order dated 10.4.2018, dismissed the said Civil Appeals filed against the APTEL's said judgments. Thus, the judgements of the APTEL have attained finality. Consequent to the Hon'ble Supreme Court's order dated 10.4.2018 in NTPC matters, Petition No. 121/2007 was listed for hearing on 8.1.2019. The Commission vide order dated 18.1.2019 in Petition No. 121/2007, directed the Petitioner to submit its claim separately for the assets at the time of filing of truing up petition for 2014-19 tariff period.



9. On the basis of the above directions in order dated 18.1.2019 in Petition No. 121/2007, PGCIL sought revision of the tariff allowed earlier for the 2001-04 and 2004-09, 2009-14 tariff periods in all applicable cases and the consequent revision of tariff of 2014-19 tariff period. The Commission has revised the tariff of the 2001-04 and 2004-09 tariff periods allowed earlier for the transmission assets on the basis of the APTEL's judgement at the stage of truing up of the 2014-19 tariff and determination of tariff of the 2019-24 tariff period in some of the petitions filed by the Petitioner.

10. In a similar case, the Petitioner filed Petition No.288/TT/2019 for revision of transmission tariff for 2001-04, 2004-09, 2009-14 tariff periods, truing-up of transmission tariff of 2014-19 tariff period and determination of transmission tariff for 2019-24 tariff period for LILO of 400 kV S/C Chamera-1 Kishenpur transmission line at Chamera-II under transmission system associated with Chamera HEP Stage-II Transmission System in Northern Region. BRPL objected to the reopening of the tariff of the transmission assets where final tariff has already been determined, on the ground that no appeal was filed by Petitioner against them and as such the orders of the Commission passed therein have attained finality. The objections of BRPL were rejected by the Commission vide order dated 6.11.2019 and tariff of 2001-04, 2004-09 and 2009-14 tariff periods earlier allowed for LILO of 400 kV S/C Chamera-1 Kishenpur transmission line at Chamera-II under transmission system associated with Chamera HEP Stage-II Transmission System in Northern Region was revised by the Commission vide order dated 31.7.2020. BRPL and BYPL filed Appeal No.212 of 2020 & IA No.1683 of 2022 and Appeal No.335 of 2022 & IA No.1580 of 2020 respectively against the Commission's orders dated 6.11.2019 and 31.7.2020 in Petition No.288/TT/2019 before APTEL. APTEL vide judgement dated 17.10.2022 in the above said Appeals has set



aside the Commission's interim order dated 6.11.2019 and the final order dated 31.7.2020 in Petition No.288/TT/2019 filed by PGCIL. The relevant portion of the APTEL's judgement dated 17.10.2022 is as follows:

“22. No doubt, tariff determination is a continuous process. At the same time, however, it has to be borne in mind that tariff is determined by formal orders for specified control periods, Financial Year wise. The tariff determination for a particular control period regulates the affairs of the parties and stakeholders involved for the period to which it is made applicable. A tariff determined on the basis of projections presented by petitions in the nature of Average Revenue Requirement (“ARR”) or Annual Performance Review (“APR”) is generally followed up by true-up orders based on audited accounts wherein suitable corrections are incorporated. It is with the objective of maintaining regulatory certainty that the law inhibits routine or frequent amendment to the tariff orders, one exception to this general principle being the changes necessary under the terms of fuel surcharge formula [Section 62 (4)]. The law qualifies this inhibition by using this expression “ordinarily”. The amendments to tariff orders do become necessary in case errors are found in the tariff order upon appellate scrutiny or, as in the case of UPPCL (supra) some other factors supervene e.g. on account of additional expenditure burden (in that case due to wage revision).

*23. The NTPC judgments (dated 22.01.2007 and 13.06.2007) of this tribunal were not in a lis wherein the appellants were involved. It was a matter essentially involving another entity (NTPC). The principles concerning interpretation of Tariff Regulations, 2001 and Tariff Regulations, 2004 were decided by this tribunal which statedly showed the views taken by the Central Commission in the original Tariff Orders dated 23.11.2005, 24.10.2006 and 20.10.2010 to be incorrect. **There was no directive of this tribunal, or of any statutory authority, for such orders to be revisited pursuant to the interpretation given by this tribunal in the NTPC judgments.** The respondent PGCIL took the matter to the Central Commission with a prayer for implementation of the NTPC judgments in its case. This, in effect, was a prayer seeking review and not revision of the tariff orders in the general sense of the term. Such prayer couched in the language of seeking implementation of the law settled by the NTPC judgments being essentially a prayer for review, was impermissible given the specific inhibition there-against by the explanation appended to Rule (1) of Order 47 CPC. This is precisely the view taken by this tribunal in judgment reported as *Madhya Pradesh Power Trading Co. Ltd v Central Electricity Regulatory Commission 2009 SCC OnLine APTEL 107 : (2009) APTEL 107 [see, para 11(v)].**

*24. We must, however, hasten to add that when we take the above view, we are not to be misunderstood as having ruled that the error committed by the Central Commission in the Orders dated 23.11.2005, 24.10.2006 and 20.10.2010 – assuming such orders were erroneous if seen in the light of the view taken in the NTPC judgments – cannot be corrected or must be allowed to “be perpetuated”, as was ruled against in *Madhya Pradesh Power Generation Co v Madhya Pradesh State Electricity Regulatory Commission (Appeal no. 24 of 2010) 2011 ELR (APTEL) 830*. The party facing the wrong end of the stick (due to erroneous approach) will have remedies in law which include an appeal or prayer for correction in true-up or proper principle to be applied in subsequent tariff orders, but not a remedy in the nature of review in the face of express prohibition in Order 47 Rule (1) CPC, not the least at such distance in time after the elapse of control periods by which stage, borrowing the words from UPPCL (supra), “when everybody had arranged its affairs”.*



25. For the foregoing reasons, we find that the objections taken by the appellants to the maintainability of the petition (no. 288/TT/2019), in the case involving them, were wrongly rejected by the Central Commission by Order dated 6.11.2019. We hold to the contrary and, thus, set aside and vacate the said order. Resultantly, the subsequent proceedings in same matter taken out before the Central Commission are found to be impermissible rendering the final Order dated 31.07.2020 non est. The same is also consequently set aside.

26. The appeals are allowed in above terms. The pending applications are rendered infructuous and stand disposed of accordingly.”

11. In view of the above referred APTEL’s judgement dated 17.10.2022 in Appeal No.212 of 2020 & IA No.1683 of 2022 and Appeal No.335 of 2022 & IA No.1580 of 2020, the Petitioner’s prayer for revision of transmission tariff of 2001-04, 2004- 09 and 2009-14 tariff periods of the combined assets is not allowed.

12. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 17.1.2020 and affidavit dated 1.7.2021.

13. The hearing in this matter was held on 9.7.2021 through video conference and the order was reserved. Having heard the representatives of the parties and after perusal of the materials on record, we proceed to dispose of the petition.

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

14. The details of the trued-up transmission charges claimed by the Petitioner in respect of the combined asset are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1682.98	1682.97	1682.98	1685.65	1688.49
Interest on Loan	619.73	460.34	348.93	328.74	322.46
Return on equityt	5967.25	5994.62	5991.58	5994.57	6013.68
Interest on Working Capital	387.89	391.44	395.58	402.24	409.83
O & M Expenses	3575.80	3695.02	3817.64	3944.18	4075.12
Total	12233.65	12224.39	12236.71	12355.38	12509.58

15. The details of the Interest on Working Capital (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	297.98	307.92	318.14	328.68	339.59
Maintenance Spares	536.37	554.25	572.65	591.63	611.27
Receivables	2038.94	2037.40	2039.45	2059.23	2084.93
Total	2873.29	2899.57	2930.24	2979.54	3035.79
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	387.89	391.44	395.58	402.24	409.83

Capital Cost as on 1.4.2014

16. The capital cost of the combined asset has been calculated in accordance with Regulations 9(3) and 9(6) of the 2014 Tariff Regulations. The Commission vide order dated 3.6.2016 in Petition No. 26/TT/2015 admitted capital cost of ₹154678.17 lakh as on 31.3.2014. Therefore, the admitted capital cost of ₹154678.17 lakh as on 31.3.2014 has been considered as on 1.4.2014 for working out the trued-up tariff for the 2014-19 tariff period.

Additional Capital Expenditure (ACE)

17. The Petitioner did not claim any ACE in Petition No 26/TT/2015 for 2014-19 tariff period.

18. The Petitioner in the instant true-up petition has claimed the ACE of ₹101.03 lakh for the year 2017-18 and submitted Auditor's Certificate in support of the same. The Petitioner has submitted that the amount is deposited to the Registrar, Delhi High Court, in the matter of RPG Vs PowerGrid. The Petitioner has further submitted that the ACE claimed is beyond the cut-off date and is covered under Regulation 14(3)(i) of the 2014 Tariff Regulations.

19. We have considered the submissions of the Petitioner. The ACE of ₹101.03 lakh for the year 2017-18 is allowed under Regulation 14(3)(i) i.e. liabilities for compliance of the order of High Court of Delhi.



Capital Cost

20. The capital cost in respect of the combined asset considered for truing-up of tariff for the 2014-19 tariff period is as follows:

(₹ in lakh)		
Capital Cost as on 1.4.2014	ACE during 2014-19 Period	Capital Cost as on 31.3.2019
154678.17	101.03	154779.20

Debt-Equity Ratio

21. The debt-equity ratio has been allowed in accordance with Regulation 19(3) of the 2014 Tariff Regulations. As per Regulation 19(3) of the 2014 Tariff Regulations, the debt-equity ratio allowed by the Commission for determination of tariff for the period ending on 31.3.2014 shall be considered. Accordingly, the admitted debt-equity for the period ending on 31.3.2014 has been considered as opening debt-equity ratio as on 1.4.2014 and debt-equity ratio of 70:30 has been considered for ACE during 2014-19 for the purpose of truing-up of tariff of 2014-19 tariff period in respect of the combined asset. The details of the debt-equity ratio in respect of the combined asset as on 1.4.2014 and 31.3.2019 are as follows:

Funding	Capital Cost as on 1.4.2014 (₹ in lakh)	(%)	Total Cost as on 31.3.2019 (₹ in lakh)	(%)
Debt	124271.77	80.34	124342.49	80.34
Equity	30406.39	19.66	30436.71	19.66
Total	154678.16	100.00	154779.20	100.00

Depreciation

22. The Petitioner has considered cumulative depreciation of ₹104714.68 lakh. , The depreciation has been allowed as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. Depreciation has been allowed considering capital expenditure and cumulative depreciation as on 1.4.2014 as allowed by the Commission vide order dated 3.6.2016 in Petition No. 26/TT/2015 and approved ACE during 2014-19 tariff



period. The combined asset has already completed 12 years of life as on 31.3.2014. The remaining depreciable value has been spread across the balance useful life of the combined asset. Depreciation allowed during 2014-19 period in respect of the combined asset is as follows:

(₹ in lakh)						
	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Gross Block	154678.17	154678.17	154678.17	154678.17	154779.20
B	ACE	0.00	0.00	0.00	101.03	0.00
C	Closing Gross Block (A+B)	154678.17	154678.17	154678.17	154779.20	154779.20
D	Average Gross Block (A+C)/2	154678.17	154678.17	154678.17	154728.68	154779.20
E	Freehold Land	929.18	929.18	929.18	929.18	929.18
F	Average Gross Block (D-E)	153748.99	153748.99	153748.99	153799.50	153850.02
G	Depreciable Value (F*90%)	138374.09	138374.09	138374.09	138419.55	138465.01
H	Weighted average Rate of Depreciation (%)	1.12	1.12	1.12	1.12	1.12
I	Elapsed life (at the beginning of the year) (Year)	12.00	13.00	14.00	15.00	16.00
J	Balance useful life (at the beginning of the year) (Year)	20.00	19.00	18.00	17.00	16.00
K	Depreciation during the year	1733.71	1733.71	1733.71	1736.39	1739.23
L	Cumulative depreciation at the end of the year	105433.58	107167.29	108901.00	110637.39	112376.61
M	Remaining Depreciable Value at the end of the year (G-L)	32940.51	31206.80	29473.08	27782.16	26088.40

23. The details of depreciation allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, depreciation claimed in the instant petition and true-up depreciation approved in the instant order in respect of the combined asset is as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015	1733.71	1733.71	1733.71	1733.71	1733.71
Claimed by the Petitioner in the instant petition	1682.98	1682.97	1682.98	1685.65	1688.49
Approved after true-up in this order	1733.71	1733.71	1733.71	1736.39	1739.23

Interest on Loan ("IoL")

24. The Petitioner has claimed the weighted average rate of IoL, based on its actual loan portfolio and rate of interest. IoL is calculated based on actual interest rate, in



accordance with Regulation 26 of the 2014 Tariff Regulations. The details of IoL allowed in respect of the combined assets are as follows:

(₹ in lakh)

	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Gross Normative Loan	124271.77	124271.77	124271.77	124271.77	124342.49
B	Cumulative Repayments up to Previous Year	110156.81	111890.52	113624.23	115357.94	117094.33
C	Net Loan-Opening (A-B)	14114.96	12381.25	10647.54	8913.83	7248.16
D	Additions due to ACE	0.00	0.00	0.00	70.72	0.00
E	Repayment during the year	1733.71	1733.71	1733.71	1736.39	1739.23
F	Net Loan-Closing (C+D-E)	12381.25	10647.54	8913.83	7248.16	5508.94
G	Average Loan (C+F)/2	13248.10	11514.39	9780.68	8081.00	6378.55
H	Weighted Average Rate of Interest on Loan (%)	4.65	3.95	3.50	3.95	4.84
I	Interest on Loan (G*H)	615.69	454.91	342.34	319.30	308.45

25. The details of IoL allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, IoL claimed by the Petitioner in the instant petition and allowed after truing up in the instant order in respect of the combined asset are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015	616.11	443.92	281.92	233.93	187.23
Claimed by the Petitioner in the instant petition	619.73	460.34	348.93	328.74	322.46
Approved after true-up in this order	615.69	454.91	342.34	319.30	308.45

Return on Equity ("RoE")

26. The Petitioner has claimed RoE in respect of the combined asset in terms of Regulations 24 and 25 of the 2014 Tariff Regulations. The Petitioner has submitted that they are liable to pay income tax at MAT rates and has claimed the following effective tax rates for the 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	19.716
2016-17	21.338	19.705
2017-18	21.337	19.704



Year	Claimed effective tax rate (in %)	Grossed-up RoE [(Base Rate)/(1-t)] (in %)
2018-19	21.549	19.758

27. The Commission vide order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate 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

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

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

29. Accordingly, the RoE allowed in respect of the combined asset is as follows:

(₹ in lakh)						
	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Equity	30406.39	30406.39	30406.39	30406.39	30436.70
B	Addition due to ACE	0.00	0.00	0.00	30.31	0.00
C	Closing Equity (A+B)	30406.39	30406.39	30406.39	30436.70	30436.70
D	Average Equity (A+C)/2	30406.39	30406.39	30406.39	30421.54	30436.70
E	Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
F	Tax Rate applicable (%)	20.961	21.342	21.342	21.342	21.549
G	Applicable ROE Rate (%)	19.610	19.705	19.705	19.705	19.758



H	Return on Equity for the year (D*G)	5962.69	5991.58	5991.58	5994.57	6013.68
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30. The details of RoE allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, RoE claimed in the instant petition and trued-up RoE allowed in the instant order in respect of the combined asset are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015	5962.69	5962.69	5962.69	5962.69	5962.69
Claimed by the Petitioner in the instant petition	5967.25	5994.62	5991.58	5994.57	6013.68
Approved after true-up in this order	5962.69	5991.58	5991.58	5994.57	6013.68

Operation & Maintenance Expenses (O&M Expenses)

31. The O&M Expenses claimed by the Petitioner are within the norms specified under the 2014 Tariff Regulations. O&M Expenses approved in respect of the combined asset for 2014-19 tariff period are as follows:

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station Bays (Numbers)					
400kV: Malerkotla:ICT-II Bay	1	1	1	1	1
400kV: Bawana : Bahadurgarh(Bhiwani) Bay	1	1	1	1	1
400 kV: Bawana:ICT-III Bay	1	1	1	1	1
400 kV: Bawana:Hissar Bay	1	1	1	1	1
400 kV: Hissar:Bhiwadi(Bassi) Bay	1	1	1	1	1
400 kV: Bassi:Bhiwadi(Hissar) Bay	1	1	1	1	1
400 kV: Abdullapur:ICT-II Bay	1	1	1	1	1
400 kV: Abdullapur:Bawana-I & II Bay	2	2	2	2	2
400 kV: Hissar:Kaithal And Patiala Bay	2	2	2	2	2
400 kV: Nalagarh:ICT-I& II Bay	2	2	2	2	2
400 kV: Nalagarh:50 MVAR Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Kaithal & Patiala Bay	2	2	2	2	2
400 kV: Bawana: Abdullapur-I & II	2	2	2	2	2
400 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
400 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
400kV: Jalandhar:Chamera Bay I & II	2	2	2	2	2
400 kV: Jalandhar: Moga Bay I & II	2	2	2	2	2



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV: Abdullapur: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
400 kV: Abdullapur: Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Nalagarh: Kunihar-I & II Bay	2	2	2	2	2
220 kV: Bassi:Dausa Bay-I & II	2	2	2	2	2
220 kV: Bassi:Heerapura Bay I & II	2	2	2	2	2
220 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
220 kV: Jalandhar:Dasuya Bay I & II	2	2	2	2	2
220 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
220 kV: Dasuya ss (PSEB):Jalandhar Bay I& II	2	2	2	2	2
220 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
220 kV: Abdullapur:Tepla-I & II	2	2	2	2	2
220 kV: Nalagarh: Mohali- I & II Bay	2	2	2	2	2
220 kV: Nalagarh: Chandigarh- I & II Bay	2	2	2	2	2
Total					
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19

Transmission Line			
Name of Line	Single Circuit / Double Circuit	No of sub conductors	Line Length (in km)
400 kV D/C Bawana Bhiwani Ckt- I&II	Double Circuit	2	98.980
400 kV S/C Hissar Bassi line	Single Circuit	2	276.770
400 kV D/C Jalandhar- Dasuya line	Double Circuit	1	49.740
400 k D/C Abdullapur –Bawana line	Double Circuit	3	166.640
400 kV D/C Nalagarh- Hissar line	Double Circuit	3	249.280
LILO of Chamera Moga line at Jallander	Double Circuit	2	5.200
400 kV D/C Naptha Jhakri-Abdullapur line	Double Circuit	3	179.930
400 kV D/C Naptha Jhakri-Nalagarh line	Double Circuit	3	143.990
Total			
Double Circuit - Twin/Triple Sub-conductor			844.02
Single Circuit - Twin/Triple Sub-conductor			276.77
Double Circuit - Single Sub-conductor			49.74

(₹ in lakh)

O&M Expenses					
Sub-station Bays (Numbers)					
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19
Norm (₹ lakh/bay)					
400 kV Bay (AIS)	60.30	62.30	64.37	66.51	68.71



220 kV Bay (AIS)	42.21	43.61	45.06	46.55	48.10
Total Sub-station O&M Expenses (₹ in lakh) (A)	2852.19	2946.79	3044.72	3145.79	3250.04
Transmission Lines (kms)					
Double Circuit - Twin/Triple Sub-conductor	844.02	844.02	844.02	844.02	844.02
Single Circuit - Twin/Triple Sub-conductor	276.77	276.77	276.77	276.77	276.77
Double Circuit - Single Sub-conductor	49.74	49.74	49.74	49.74	49.74
Norm (₹ lakh/km)					
Double Circuit - Twin/Triple Sub-conductor	0.707	0.731	0.755	0.780	0.806
Single Circuit - Twin/Triple Sub-conductor	0.404	0.418	0.432	0.446	0.461
Double Circuit - Single Sub-conductor	0.303	0.313	0.324	0.334	0.346
Total Transmission Line O&M Expenses (₹ in lakh) (B)	723.61	748.24	772.92	798.39	825.08
Total O&M Expenses (₹ in lakh) (C=A+B)	3575.80	3695.03	3817.64	3944.18	4075.12

32. The details of O&M Expenses allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, O&M Expenses claimed in the instant petition and trued-up O&M Expenses approved in the instant order in respect of the combined asset are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015	3575.59	3695.03	3817.63	3944.18	4075.12
Claimed by the Petitioner in the instant petition	3575.80	3695.02	3817.64	3944.18	4075.12
Approved after true-up in this order	3575.80	3695.03	3817.64	3944.18	4075.12

Interest on Working Capital (IWC)

33. The Petitioner has claimed IWC in terms of Regulation 28 of the 2014 Tariff Regulations. The components of the working capital and the Petitioner's entitlement to interest thereon are discussed as follows:

(i) Receivables

Receivables as a component of working capital will be equivalent to two months fixed cost. The Petitioner has claimed the receivables on the basis of 2 months



annual transmission charges. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

(ii) Maintenance spares

Regulation 28 of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M expenses. The value of maintenance spares has accordingly been worked out.

(iii) O & M expenses

Operation and maintenance expenses have been considered for one month as a component of working capital. The Petitioner has claimed O&M expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital

As per Proviso 3 of Regulation 28 of the 2014 Tariff Regulation, SBI Base rate 10.00% as on 1.4.2014 plus 350 basis points.e. 13.50% has been considered for the asset as the rate of interest on working capital.

34. The trued-up IWC allowed in respect of the combined asset for 2014-19 tariff period is as follows:

(₹ in lakh)						
	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one Month)	297.98	307.92	318.14	328.68	339.59
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	536.37	554.25	572.65	591.63	611.27
C	Working Capital for Receivables (Equivalent to two months of annual transmission charges)	2046.13	2044.61	2046.98	2066.27	2091.19
D	Total Working Capital (A+B+C)	2880.48	2906.78	2937.76	2986.58	3042.05
E	Rate of Interest on working capital (in %)	13.50	13.50	13.50	13.50	13.50
F	Interest of working capital (D*E)	388.86	392.42	396.60	403.19	410.68

35. The details of IWC allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, IWC claimed in the instant petition and trued-up IWC approved in the instant order in respect of the combined asset is as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015	388.86	391.50	394.54	400.43	406.59
Claimed by the Petitioner in the instant petition	387.89	391.44	395.58	402.24	409.83
Approved after true-up in this order	388.86	392.42	396.60	403.19	410.68

Approved Annual Fixed Charges for the 2014-19 Tariff Period

36. Accordingly, the annual fixed charges approved after truing-up 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	1733.71	1733.71	1733.71	1736.39	1739.23
Interest on Loan	615.69	454.91	342.34	319.30	308.45
Return on Equity	5962.69	5991.58	5991.58	5994.57	6013.68
O&M Expenses	3575.80	3695.03	3817.64	3944.18	4075.12
Interest on Working Capital	388.86	392.42	396.60	403.19	410.68
Total	12276.75	12267.65	12281.87	12397.63	12547.16

37. The details of annual transmission charges allowed vide order dated 3.6.2016 in Petition No. 26/TT/2015, claimed by the Petitioner in the instant petition and trued-up annual transmission charges approved in the instant order in respect of the combined asset are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed earlier vide order dated 3.6.2016 in Petition No. 26/TT/2015	12276.97	12226.86	12190.49	12274.94	12365.35
Claimed by the Petitioner in the instant petition	12233.65	12224.39	12236.71	12355.38	12509.58
Approved after true-up in this order	12276.75	12267.65	12281.87	12397.63	12547.16

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

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

(₹ in lakh)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1693.67	1695.35	1696.82	1699.87	1747.11
Interest on Loan	278.82	217.08	134.06	50.30	0.00
Return on equity	5749.09	5781.55	5782.69	5784.97	5813.17
Interest on Working Capital	271.81	277.39	281.80	286.52	292.28
O & M Expenses	3573.08	3699.32	3828.24	3963.30	4098.41



Total	11566.47	11670.69	11723.61	11784.96	11950.97
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39. The details of the IWC claimed by the Petitioner 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
O&M Expenses	297.76	308.28	319.02	330.28	341.53
Maintenance Spares	535.96	554.90	574.24	594.50	614.76
Receivables	1421.94	1438.85	1445.37	1452.94	1469.29
Total	2255.66	2302.03	2338.63	2377.72	2425.58
Rate of Interest (%)	12.05	12.05	12.05	12.05	12.05
Interest	271.81	277.39	281.80	286.52	292.28

Capital Cost

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

“(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 asset 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 up to 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 GrameenVidyutikaranYojana (RGGVY) and DeendayalUpadhyaya Gram JyotiYojana (DDUGJY) project in the affected area.

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

(a) The asset forming part of the project, but not in use, as declared in the tariff petition;
(b) De-capitalised Asset 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 asset.

(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.”

41. The admitted capital cost of ₹154779.20 lakh as on 31.3.2019 in respect of the combined asset has been considered as opening capital cost as on 1.4.2019 for determination of tariff for 2019-24 tariff period in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (ACE)

42. 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 Asset, the additional capitalization shall be worked out after adjusting the gross fixed Asset and cumulative depreciation of the Asset replaced on account of de-capitalization.

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

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

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



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

(2) In case of replacement of Asset 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 Asset and the cumulative depreciation, subject to prudence check on the following grounds:

- (a) The useful life of the Asset is not commensurate with the useful life of the project and such Asset 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.

43. The Petitioner vide Auditor's Certificates dated 6.12.2019 and 6.1.2020 has projected net ACE of ₹2154.21 lakh for combined asset after adjusting de-capitalisation during the 2019-24 tariff period. The details for ACE/ de-capitalization proposed during 2019-24 is tabulated as follows:

Particulars	(₹ in lakh)	
	Amount Freehold Land	Amount Sub-station
Proposed ACE in 2019-20	1050.00	112.45
Proposed ACE in 2021-22	-	40.89
Proposed ACE in 2022-23	-	40.95
Proposed ACE in 2023-24	-	1014.22
Proposed De-capitalisation in 2019-20	-	19.32
Proposed De-capitalisation in 2021-22	-	0.81
Proposed De-capitalisation in 2022-23	-	0.81
Proposed De-capitalisation in 2023-24	-	83.36
NET ACE	1050.00	1104.21

44. The Petitioner in the instant petition has submitted that the proposed ACE of ₹1050 lakh is towards land compensation enhancement payable to 16 number of parties



as per court order dated 2.7.2019 and is covered under Regulation 25(1)(a) of the 2019 Tariff regulations.

45. The other proposed ACE during 2019-24 is for replacement of some of the component/equipment in the system which have deteriorated due to ageing and may affect the stability and reliability of the Grid in case of sudden failure and covered Regulation 25(2) of the 2019 Tariff regulations. The Petitioner has submitted the following justification for replacement:

Circuit Breaker: The Circuit Breaker is going to complete 25 years of service by 2021-22. The Circuit Breaker are pneumatic type. Due to ageing, there is problem of frequent Air Leakages, failure of Magnetic ventile, SF6 gas leakages etc. Circuit Breaker have become obsolete, therefore neither timely support from OEM nor spares are available.

Reactor's Protection Relays & Line relay retrofitting: All these relays are of static type and obsolete. These need to be retrofitted with numerical type relays which may support IEC61850 communication protocol and DR channel naming.

PLCC Protection Channel: The frequent failure of Amplifier, Automatic drifting of guard and fault signal level and Low availability of PLCC.

Current transformer: The current transformers are going to complete 25 years of life in 2019-24. DGA and Tan delta violation and hot spots are being routinely observed. Support from OEM also not available in many cases. In some cases repairs from manufacturer is either not possible due to obsolesce (transferred to live tank from dead tank) or techno-economically not beneficial. There are instances of failure/ violation in operational parameter in this type of current transformers.

CVT: That due to ageing frequent oil leakages and hot spots are being routinely observed. These CVTs have problem of secondary voltage drift, leakages. Repair from manufacturer is either not available or techno-economically not beneficial.



Isolator: The Isolators are completing 25 years of service in 2019-24. Due to ageing, there is problem of frequent misalignment, jamming, improper closing/opening, over travel, sluggishness in operating mechanism, and hot spots. Many times even local operation also becomes difficult. Further, these isolators have become obsolete, therefore neither timely support from OEM nor spares are available.

46. Besides the above, the Petitioner vide affidavit dated 1.7.2021 has submitted that the other ACE during 2019-24 period is due problematic equipment like CB, Relays, PLCC protection panel, CT, CVT, Isolators etc are proposed for replacement to ensure system reliability. In addition to equipment proposed to be replaced, there are many other equipment/ materials like other CT, CB, CVT, earthing system, tower and gantry structures, cables which plays a very important role in operation of any sub-station. The Petitioner has submitted that as a whole it is difficult to assess the life of the complete project. The equipment are replaced based on condition monitoring, however balance of the system still remains under service, for which replacement may be required in near future. Further, the Petitioner has submitted that the gross block of old equipment being proposed to be replaced in the instant petition is hardly 0.27% for Asset-I and 0.76% for Asset-II of the total gross block of the Assets. However, other equipment of the project remain the same as commissioned with original project. As only some of the equipments are proposed to be replaced and majority of items are old, and may require replacement in future and considering the fact that the present project will complete its life in the year 2033-34, no further life extension has been proposed.

47. The Petitioner vide affidavit dated 1.7.2021 has submitted the equipment-wise details of the proposed ACE is as follows:



A) 420 kV & 245 kV Circuit Breaker (14 sets):

- I. These Circuit Breakers are going to complete 26 years of service in tariff block 2019-24. Now these model of Circuit Breaker are obsolete.
- II. All these Circuit Breakers are of pneumatic/ hydraulic type. Due to ageing SF6 leakages from various joints are observed, which are becoming difficult to attend during maintenance.
- III. Multiple air leakages are also observed from pipes of pneumatic operating systems.
- IV. Mismatch in timing results and violation of DCRM signature also observed in many cases. This may cause failure of CBS in service.
- V. Manufacturers have stopped manufacturing said model of Circuit Breakers, due to which, manufacturers are not able to provide spares and timely service support. Frequent adjustment of auxiliary contact is also required due to ageing of mechanisms.
- VI. In view of the above it is proposed to replace 2 sets 420 kV Circuit Breaker at Hissar, 4 sets of 420 kV & 1 set of 245 kV at Bawana and 7 sets of 245 kV Circuit Breaker at Bassi.

B) Line protection relay, Differential, REF Relays of Reactors, (1 no. differential, 1 no. REF and 4 nos. line protection relay):

- I. These relays are of electromagnetic type and obsolete. The OEMs have themselves phased out these models of relays and there is no spares support.
- II. In case of any spare failures, the relays are to be kept out of service to avoid mal-operation and the only option is replacement.
- III. Due to ageing, problem of mal-operation/non-operation occurs because of sticking up of contacts and problem in the coils.
- IV. Non-functioning of relays may result not only in failure of costly equipment like transformers/ Reactors but may also cause Grid disturbance.
- V. Further, these relays does not comply IEC 61850 and don't have DR and time synchronization facility, resulting in difficulties in fault analysis.
- VI. In view of that it is proposed to replace 1 no. each differential and REF relay of reactor at Hissar, 4 nos. line protection relays at Bassi.



C) PLCC (4 sets):

These PLCC are of BPL make (9505 V3). These panels are giving frequent problems of mal-operation/ non-operation resulting in unwarranted trippings or non- trippings. Frequent failure of amplifier, auto drifting of guard and fault signal levers are observed. PLCC plays a very vital role in the protection system for isolation of fault. The non-functioning/ improper operation of PLCC system may result into unwanted trippings which may some time result in Grid disturbance. In view of above, it is proposed to replace PLCC panels of Hissar-Kaitha D/C line.

D) Current Transformer (33 nos.):

These current transformers are of BHEL/WSI make and have completed or going to complete 25 years of service life in 2019-24 tariff period. Due to ageing leakage from multiple points are observed. In some cases the oil seepage from bottom of tank are also observed. 1 No. CT at Hissar Sub-station has been replaced due to deviation in tan delta value. As there is leakage in the transformer, in long run it 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 works, which will not be techno-economically viable. As such manufacturer has already stopped manufacturing these product. GE vide e-mail dated: 10.12.2019 and 25.08.2015 stated that they have discontinued the manufacturing of these type of WSI make CT. In view of above, it is proposed to replace 6 nos. 420 kV CT at Hissar, 17 nos. 420 kV & 3 nos. 220 kV CT at Bawana, 6 nos. 220 kV CT at Heerapura and 1 no. 220 kV CT at Bassi.

E) Capacitive Voltage Transformer (11 nos.):

These capacitive voltage transformers have completed or going to complete 25 years of service life in 2019-24 tariff period. Due to ageing leakage from multiple points are observed. In many cases the oil seepage from bottom of tank, gauge or secondary terminal boxes are also observed. Due to ageing, capacitance of the CVT have changed resulting into variation in secondary voltage. CVT plays a major role for metering and protection system. The variation in secondary



voltage may result into improper metering and undesired trippings of transmission elements. The CVTs are hermetically sealed equipment and repairing of these equipment at site level is not possible. After 25 years of service repairing at manufacturing works is also not techno-economically viable. In view of that, it is proposed to replace 2 nos. 420 kV CVT at Hissar & 9 nos. at Bawana.

F) Isolators (36 sets):

- I. These Isolators are of S&S power make were installed during 1994 to 1998. All of them have already completed 25 years of service.
- II. These isolators are mainly of horizontal centre break type and frequent problem of misalignment are being faced. Current transfer assembly on isolator top and other spares are now no more available in most of the cases due to old make of isolators and creating problem in maintaining these old isolators. Due to these constraints in maintaining isolators, sometimes the isolators are getting opened in live line condition which is dangerous to system as well as to the operating personal.
- III. Due to rusting, many MOM boxes got damaged and operation of motors not possible. Due to ageing the TBs inside the MOM boxes has become brittle and many times DC cables comes in contact with boxes and creates DC earth fault, which is detrimental to the system.
- IV. Many times even local operation also becomes difficult. Further, these isolators have become obsolete, therefore neither timely support from OEM nor spares are available. S&S vide e-mail dated 12.12.2019 stated that isolators of these lots cannot be repaired and advised for replacement.
- V. In view of that, it is proposed to replace 7 sets of 420 kV Isolators at Hissar, 19 sets of 420 kV & 2 sets of 245 kV at Bawana and 8 sets of 245 kV Isolators at Heerapura.

G) Surge Arresters (21 nos.):

- I. All the installed SAs are old and completing 25 years of useful life in 2019-24. The THRC value of the SAs are deteriorating and may fail at any time. For healthy operation of the system, SAs are required to be replaced.



- II. Surge arresters plays important role in protecting the sub-station equipment from high voltage lightning/ switching surge.
- III. It is dangerous to keep these SA's in further service since their damage while in service may cause consequential damages to other equipment in vicinity and long forced outages of system.
- IV. In view of that, it is proposed to replace 18 sets of 390 kV & 3 nos. 216 kV Surge arresters at Hissar with SAs of latest specification.

48. We have considered the detailed submissions of the Petitioner on ACE. The details of ACE allowed/disallowed for 2019-24 tariff period is as follows:

a) Replacement of sub-station equipment

The Petitioner has submitted that the sub-station is about to complete 25 years of useful life and majority of the sub-station equipment need to be replaced. The proposed ACE towards replacement of to replace 2 sets 420 kV Circuit Breaker at Hissar, 4 sets of 420 kV & 1 set of 245 kV at Bawana and 7 sets of 245 kV Circuit Breaker at Bassi, 1 no each differential & REF relay of reactor at Hissar, 4 nos. line protection relays at Bassi, PLCC panels of Hissar-Kaitha D/C line, 6 nos. 420 kV CT at Hissar, 17 nos. 420 kV & 3 nos. 220 kV CT at Bawana, 6 nos. 220 kV CT at Heerapura and 1 no. 220 kV CT at Bassi, 2 nos. 420 kV CVT at Hissar & 9 nos. at Bawana, 7 sets of 420 kV Isolators at Hissar, 19 sets of 420 kV & 2 sets of 245 kV at Bawana and 8 sets of 245 kV Isolators at Heerapura, 18 sets of 390 kV & 3 nos. 216 kV Surge arresters at Hissar. The Petitioner has submitted documentary proof and communication with various OEM and based on the documentary evidence, it is observed that OEMs are not able to provide spares and service due to the obsolescence of technology. These items are of critical nature and their failure may affect the stability and reliability of the Grid. Hence, the replacement of these obsolete equipment and consequential ACE towards this is allowed under Regulation 25(2)(c) of 2019 tariff Regulations. However, the Petitioner is directed to submit the details of abstract cost estimates and details of the actual cost of the replaced equipment sub-station wise and work-wise at the time of truing up.



b) **ACE towards land compensation enhancement:**

The Petitioner projected an estimated liability of ₹1050 lakh towards land compensation enhancement payable to 16 number of parties. We have gone through the submissions of the Petitioner. The Petitioner has submitted High Court of Punjab and Haryana order dated 2.7.2019 and also Auditor certificate dated 6.1.2020. The ACE of ₹1050 lakh is allowed under Regulation 25(1)(a) of the 2019 Tariff regulations. The Petitioner is directed to submit the actual land compensation paid alongwith valid documents at the time of truing-up.

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

Particulars	(₹ in lakh)	
	Amount Freehold Land	Amount Sub-station
Proposed ACE in 2019-20	1050.00	112.45
Proposed ACE in 2021-22	-	40.89
Proposed ACE in 2022-23	-	40.95
Proposed ACE in 2023-24	-	1014.22
Proposed De-capitalisation in 2019-20	-	19.32
Proposed De-capitalisation in 2021-22	-	0.81
Proposed De-capitalisation in 2022-23	-	0.81
Proposed De-capitalisation in 2023-24	-	83.36
NET ACE	1050.00	1104.21

50. Accordingly, capital cost of the combined asset as on 31.3.2024 is allowed as follows:

Capital Cost allowed as on 1.4.2019	ACE				Capital Cost as on 31.3.2024
	2019-20	2021-22	2022-23	2023-24	
154779.20	1143.13	40.08	40.14	930.86	156933.41

Debt-Equity Ratio

51. 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.

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



52. The debt-equity ratio for the 2019-24 period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The details of the debt-equity ratio considered for the purpose of tariff for the 2019-24 tariff period is as follows:

Funding	Capital Cost as on 1.4.2019 (₹ in lakh)	(%)	Total Cost as on 31.3.2024 (₹ in lakh)	(%)
Debt	124342.49	80.34	125838.60	80.19
Equity	30436.71	19.66	31094.80	19.81
Total	154779.20	100.00	156933.41	100.00

Depreciation

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

"33. Depreciation: (1) *Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:*

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

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

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

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

(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 de-capitalized asset during its useful services.

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

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

- a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or*
- b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or*
- c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof*



has completed its useful life.”

54. We have considered the submissions of the Petitioner. The combined asset was put under commercial operation on 6.9.2001 (E-COD), accordingly the combined asset has already completed 12 years of life as on 31.3.2014. Consequently, depreciation has been calculated based on the remaining depreciable value (up to 90% of existing gross block of assets) to be recovered over the balance useful life. As discussed above, the Petitioner has proposed other ACE towards replacement of sub-station equipment, hence, depreciation corresponding to ACE (new additions) claimed for 2019-20 onwards is allowed at normative rate of depreciation as specified in the 2019 Tariff Regulations. The depreciation allowed in respect of the combined asset for 2019-24 tariff period is as follows:

(₹ in lakh)

	Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	154779.20	154759.88	154759.88	154759.07	154758.26
B	De-capitalisation	19.32	0.00	0.81	0.81	83.36
C	Closing Gross Block	154759.88	154759.88	154759.07	154758.26	154674.90
D	Average Gross Block	154769.54	154759.88	154759.47	154758.66	154716.58
E	Depreciable Value	138456.32	138447.63	138447.26	138446.53	138408.66
F	Weighted average rate of Depreciation (WAROD) (%)	1.12	1.12	1.12	1.12	1.12
G	Cumulative Depreciation at the beginning of the year	112376.61	114099.19	115838.37	117576.81	119315.24
H	Remaining depreciable value	26079.71	24348.43	22608.90	20869.72	19093.41
I	Balance useful life at the beginning of the year (Year)	15.00	14.00	13.00	12.00	11.00
J	Elapsed life at the beginning of the year (Year)	17.00	18.00	19.00	20.00	21.00
K	Depreciation during the year	1738.65	1739.17	1739.15	1739.14	1735.76
L	Depreciation adjustment on account of de-capitalisation	16.07	0.00	0.70	0.71	74.24
M	Cumulative depreciation at the end of the year	114099.19	115838.37	117576.81	119315.24	120976.77

(₹ in lakh)

	New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	0.00	1162.45	1162.45	1203.34	1244.29
B	ACE during the year	1162.45	0.00	40.89	40.95	1014.22
C	Closing Gross Block	1162.45	1162.45	1203.34	1244.29	2258.51
D	Average Gross Block	581.23	1162.45	1182.90	1223.82	1751.40



E	Weighted average rate of Depreciation (WAROD) (%)	5.28	5.28	5.28	5.28	5.28
F	Depreciable Value	50.60	101.21	119.61	156.43	631.26
G	Cumulative Depreciation at the beginning of the year	0	2.97	8.91	15.92	25.10
H	Depreciation during the year	2.97	5.94	7.02	9.18	37.03
I	Cumulative Depreciation at the end of the year	2.97	8.91	15.92	25.10	62.13
J	Remaining Depreciation at the end of the year	47.63	92.30	103.68	131.33	569.13

(₹ in lakh)

New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
Total Existing Assets	1738.65	1739.17	1739.15	1739.14	1735.76
Total New Additions	2.97	5.94	7.02	9.18	37.03
Total	1741.62	1745.11	1746.16	1748.32	1772.80

Interest on Loan (“IoL”)

55. 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 asset, 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 up to 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.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:



Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

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

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing”.

56. 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. The floating rate of interest, if any, will be considered at the time of true up. Accordingly, IoL has been worked out in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed is as follows:

(₹ in lakh)						
	Existing Assets	2019-20	2020-21	2021-22	2022-23	2023-24
A	Gross Normative Loan	124342.49	124326.22	124326.22	124325.53	124324.85
B	Cumulative Repayments up to Previous Year	118833.55	120555.92	122295.10	124033.56	124324.85
C	Net Loan-Opening (A-B)	5508.94	3770.29	2031.12	291.97	0.00
D	Adjustment of gross loan pertaining to de-capitalised asset	16.28	0.00	0.68	0.68	67.20
E	Repayment during the year	1738.65	1739.17	1739.15	291.97	0.00
F	Adjustment of cumulative repayment pertaining to de-capitalised asset	16.28	0.00	0.68	0.68	67.20
G	Net Loan-Closing (C-E)	3770.29	2031.12	291.97	0.00	0.00
H	Average Loan (C+G)/2	4639.61	2900.71	1161.55	145.99	0.00
I	Weighted Average Rate of Interest on Loan (%)	5.18	5.30	5.55	6.36	8.50
J	Interest on Loan (H*I)	240.24	153.67	64.45	9.28	0.00



(₹ in lakh)

	New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
A	Gross Normative Loan	0.00	813.72	813.72	842.34	871.00
B	Cumulative Repayments up to Previous Year	0.00	2.97	8.91	15.92	25.10
C	Net Loan-Opening (A-B)	0.00	810.75	804.81	826.42	845.90
D	Addition due to ACE	813.72	0.00	28.62	28.67	709.95
E	Repayment during the year	2.97	5.94	7.02	9.18	37.03
F	Net Loan-Closing (C+D-E)	810.75	804.81	826.42	845.90	1518.82
G	Average Loan (C+F)/2	405.37	807.78	815.61	836.16	1182.36
H	Weighted Average Rate of Interest on Loan (%)	5.18	5.30	5.55	6.36	8.50
I	Interest on Loan (G*H)	20.99	42.79	45.26	53.18	100.53

(₹ in lakh)

New Additions	2019-20	2020-21	2021-22	2022-23	2023-24
Total Existing Assets	240.24	153.67	64.45	9.28	0.00
Total New Additions	20.99	42.79	45.26	53.18	100.53
Total	261.23	196.46	109.71	62.46	100.53

Return on Equity (RoE)

57. Regulations 30 and 31 of the 2019 Tariff Regulations specify as follows:

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

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

Provided that return on equity in respect of additional capitalization after cutoff date beyond the original scope, excluding additional capitalization on account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.

Provided further that:

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

ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the



concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

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

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

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

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

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

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

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

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

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

Illustration-

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

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

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

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;



- (c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;
 (d) Rate of return on equity = 15.50/ (1-0.24) = 20.395%

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

58. The Petitioner has submitted that MAT rate is applicable to the Petitioner's Company. We have considered the submissions of the Petitioner. Accordingly, the MAT rate applicable in 2019-20 has been considered for the purpose of RoE which will be trued-up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. The RoE allowed in respect of the combined asset under Regulation 30 of the 2019 Tariff Regulations is as follows:

(₹ in lakh)

	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	30436.71	30782.40	30782.40	30794.53	30806.69
B	Additions due to ACE	348.74	0.00	12.27	12.29	304.27
C	Decrease due to De-capitalisation	3.04	0	0.13	0.13	16.16
D	Closing Equity (A+B-C)	30782.40	30782.40	30794.53	30806.69	31094.80
E	Average Equity (A+D)/2	30609.55	30782.40	30788.46	30800.61	30950.75
F	Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
G	MAT Rate for respective year (%)	17.472	17.472	17.472	17.472	17.472
H	Rate of Return on Equity (%)	18.782	18.782	18.782	18.782	18.782
I	Return on Equity (E*H)	5749.09	5781.55	5782.69	5784.97	5813.17

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

59. Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations specify the norms for O&M Expenses for the transmission system and the same is as follows:

“(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)					



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
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 years.*

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

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

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

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

60. The O&M Expenses claimed by the Petitioner in respect of the combined asset are as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station Bays (Numbers)					
400 kV: Malerkotla:ICT-II Bay	1	1	1	1	1



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
400 kV: Bawana : Bahadurgarh(Bhiwani) Bay	1	1	1	1	1
400 kV: Bawana:ICT-III Bay	1	1	1	1	1
400 kV: Bawana:Hissar Bay	1	1	1	1	1
400 kV: Hissar:Bhiwadi(Bassi) Bay	1	1	1	1	1
400 kV: Bassi:Bhiwadi(Hissar) Bay	1	1	1	1	1
400 kV: Abdullapur:ICT-II Bay	1	1	1	1	1
400 kV: Abdullapur:Bawana-I & II Bay	2	2	2	2	2
400 kV: Hissar:Kaithal And Patiala Bay	2	2	2	2	2
400 kV: Nalagarh:ICT-I& II Bay	2	2	2	2	2
400 kV: Nalagarh:50 MVAR Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Kaithal & Patiala Bay	2	2	2	2	2
400 kV: Bawana: Abdullapur-I & II	2	2	2	2	2
400 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
400 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
400 kV: Jalandhar:Chamera Bay I & II	2	2	2	2	2
400 kV: Jalandhar: Moga Bay I & II	2	2	2	2	2
400 kV: Abdullapur: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
400 kV: Abdullapur: Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Nalagarh: Kunihar-I & II Bay	2	2	2	2	2
220 kV: Bassi:Dausa Bay-I & II	2	2	2	2	2
220 kV: Bassi:Heerapura Bay I & II	2	2	2	2	2
220 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
220 kV: Jalandhar:Dasuya Bay I & II	2	2	2	2	2
220 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
220 kV: Dasuya ss (PSEB):Jalandhar Bay I & II	2	2	2	2	2
220 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
220 kV: Abdullapur:Tepla-I & II	2	2	2	2	2
220 kV: Nalagarh: Mohali- I & II Bay	2	2	2	2	2
220 kV: Nalagarh: Chandigarh- I & II Bay	2	2	2	2	2
Total					
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19

Transmission Line			
Name of Line	Single Circuit / Double Circuit	No of sub conductors	Line Length (in km)
400 kV D/C Bawana Bhiwani Ckt- I&II	Double Circuit	2	98.980
400 kV S/C Hissar Bassi line	Single Circuit	2	276.770
400 kV D/C Jalandhar Dasuya line	Double Circuit	1	49.740
400 kV D/C Abdullapur Bawana line	Double Circuit	3	166.640



400 kV D/C Nalagarh-Hissar line	Double Circuit	3	249.280
LILO of 400 kV D/C Chamera-Moga line at Jalandhar	Double Circuit	2	5.200
400 kV S/C Naptha Jhakri-Abdullapur line	Double Circuit	3	179.930
400 kV D/C Naptha Jhakri-Nallagarh line	Double Circuit	3	143.990
Total			
Double Circuit - Twin/Triple Sub-conductor			844.02
Single Circuit - Twin/Triple Sub-conductor			276.77
Double Circuit - Single Sub-conductor			49.74

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Transformer (MVA)					
400 kV: Bawana:ICT-III	315	315	315	315	315
400 kV: Malerkotla:ICT-II	315	315	315	315	315
400 kV: Abdullapur:ICT-II	315	315	315	315	315
400 kV: Bassi:ICT-I & II	630	630	630	630	630
400 kV: Jalandhar:ICT-I & II	630	630	630	630	630
400 kV: Nalagarh:ICT-I & II	630	630	630	630	630
400 kV: Abdullapur:ICT-I	315	315	315	315	315
Total	3150	3150	3150	3150	3150

(₹ in lakh)

O&M Expenses					
Sub-station Bays (Numbers)	2019-20	2020-21	2021-22	2022-23	2023-24
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19
Norm (₹ lakh/bay)					
400 kV Bay (AIS)	32.15	33.28	34.45	35.66	36.91
220 kV Bay (AIS)	22.51	23.30	24.12	24.96	25.84
Total Sub-station O&M Expenses (₹ in lakh) (A)	1520.79	1574.22	1629.58	1686.68	1745.90
Transmission Lines (km)					
Double Circuit - Twin/Triple Sub-conductor	844.02	844.02	844.02	844.02	844.02
Single Circuit - Twin/Triple Sub-conductor	276.77	276.77	276.77	276.77	276.77
Double Circuit - Single Sub-conductor	49.74	49.74	49.74	49.74	49.74
Norm (₹ lakh/km)					
Double Circuit - Twin/Triple Sub-conductor	0.881	0.912	0.944	0.977	1.011
Single Circuit - Twin/Triple Sub-conductor	0.503	0.521	0.539	0.558	0.578
Double Circuit - Single Sub-conductor	0.377	0.391	0.404	0.419	0.433
Total Transmission Line O&M Expenses (₹ in lakh) (B)	901.55	933.39	966.03	999.89	1034.81



Transformer (MVA)					
400 kV	3150	3150	3150	3150	3150
Norms (₹lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
Total Transformer (C)	1127.70	1168.65	1209.60	1253.70	1294.65
Communication System					
PLCC	1151.74	1151.74	1151.74	1151.74	1151.74
Norms (%)	2	2	2	2	2
Total Communication System (D)	23.03	23.03	23.03	23.03	23.03
Total O&M Expenses (₹ in lakh) (E=A+B+C+D)					
	3573.07	3699.30	3828.24	3963.30	4098.40

61. 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 and the Petitioner has made similar claim in other petitions as well. Though PLCC is a communication system, it has been considered as part of the sub-station in the 2014 Tariff Regulations and the 2019 Tariff Regulations and the norms for sub-station 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

62. The O&M Expenses allowed in respect of the combined asset for the 2019-24 tariff period are as follows:

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Sub-station Bays (Numbers)					
400 kV: Malerkotla:ICT-II Bay	1	1	1	1	1
400 kV: Bawana : Bahadurgarh(Bhiwani) Bay	1	1	1	1	1
400 kV: Bawana:ICT-III Bay	1	1	1	1	1
400 kV: Bawana:Hissar Bay	1	1	1	1	1
400 kV: Hissar:Bhiwadi(Bassi) Bay	1	1	1	1	1
400 kV: Bassi:Bhiwadi(Hissar) Bay	1	1	1	1	1
400 kV: Abdullapur:ICT-II Bay	1	1	1	1	1
400 kV: Abdullapur:Bawana-I & II Bay	2	2	2	2	2



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
400 kV: Hissar:Kaithal And Patiala Bay	2	2	2	2	2
400 kV: Nalagarh:ICT-I& II Bay	2	2	2	2	2
400 kV: Nalagarh:50 MVAR Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Kaithal & Patiala Bay	2	2	2	2	2
400 kV: Bawana: Abdullapur-I & II	2	2	2	2	2
400 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
400 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
400 kV: Jalandhar:Chamera Bay I & II	2	2	2	2	2
400 kV: Jalandhar: Moga Bay I & II	2	2	2	2	2
400 kV: Abdullapur: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
400 kV: Abdullapur: Bus Reactor Bay	1	1	1	1	1
400 kV: Nalagarh: Nathpa Jhakri Bay I & II	2	2	2	2	2
400 kV: Nalagarh: Kunihar-I & II Bay	2	2	2	2	2
220 kV: Bassi:Dausa Bay-I & II	2	2	2	2	2
220 kV: Bassi:Heerapura Bay I & II	2	2	2	2	2
220 kV: Bassi:ICT-I & II Bay	2	2	2	2	2
220 kV: Jalandhar:Dasuya Bay I & II	2	2	2	2	2
220 kV: Jalandhar:ICT-I & II Bay	2	2	2	2	2
220 kV: Dasuya ss (PSEB):Jalandhar Bay I& II	2	2	2	2	2
220 kV: Abdullapur:ICT-I Bay	1	1	1	1	1
220 kV: Abdullapur:Tepla-I & II	2	2	2	2	2
220 kV: Nalagarh: Mohali- I & II Bay	2	2	2	2	2
220 kV: Nalagarh: Chandigarh- I & II Bay	2	2	2	2	2
Total					
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19

Transmission Line			
Name of Line	Single Circuit / Double Circuit	No of sub conductors	Line Length (in km)
Bawana Bhiwani Ckt- I&II	Double Circuit	2	98.980
400 kV Hissar Bassi	Single Circuit	2	276.770
Jalandhar Dasuya	Double Circuit	1	49.740
Abdullapur Bawana	Double Circuit	3	166.640
Nalagarh Hissar	Double Circuit	3	249.280
LILO of Chamera Moga at Jallander	Double Circuit	2	5.200
Naptha Jhakri-Abdullapur	Double Circuit	3	179.930
Naptha Jhakri-Nalagarh	Double Circuit	3	143.990
Total			
Double Circuit - Twin/Triple Sub-conductor			844.02



Single Circuit - Twin/Triple Sub-conductor			276.77
Double Circuit - Single Sub-conductor			49.74

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Transformer (MVA)					
400 kV: Bawana:ICT-III	315	315	315	315	315
400 kV: Malerkotla:ICT-II	315	315	315	315	315
400 kV: Abdullapur:ICT-II	315	315	315	315	315
400 kV: Bassi:ICT-I & II	630	630	630	630	630
400 kV: Jalandhar:ICT-I & II	630	630	630	630	630
400 kV: Nalagarh:ICT-I & II	630	630	630	630	630
400 kV: Abdullapur:ICT-I	315	315	315	315	315
Total	3150	3150	3150	3150	3150

(₹ in lakh)

O&M Expenses					
Sub-station Bays (Numbers)	2019-20	2020-21	2021-22	2022-23	2023-24
400 kV Bay (AIS)	34	34	34	34	34
220 kV Bay (AIS)	19	19	19	19	19
Norm (₹ lakh/bay)					
400 kV Bay (AIS)	32.15	33.28	34.45	35.66	36.91
220 kV Bay (AIS)	22.51	23.30	24.12	24.96	25.84
Total Sub-station O&M Expenses (₹ in lakh) (A)	1520.79	1574.22	1629.58	1686.68	1745.90
Transmission Lines (kms)					
Double Circuit - Twin/Triple Sub-conductor	844.02	844.02	844.02	844.02	844.02
Single Circuit - Twin/Triple Sub-conductor	276.77	276.77	276.77	276.77	276.77
Double Circuit - Single Sub-conductor	49.74	49.74	49.74	49.74	49.74
Norm (₹ lakh/km)					
Double Circuit - Twin/Triple Sub-conductor	0.881	0.912	0.944	0.977	1.011
Single Circuit - Twin/Triple Sub-conductor	0.503	0.521	0.539	0.558	0.578
Double Circuit - Single Sub-conductor	0.377	0.391	0.404	0.419	0.433
Total Transmission Line O&M Expenses (₹ in lakh) (B)	901.55	933.39	966.03	999.89	1034.81
Transformer (MVA)					
400 kV	3150	3150	3150	3150	3150
Norms (₹lakh/MVA)					
400 kV	0.358	0.371	0.384	0.398	0.411
Total Transformer (C)	1127.70	1168.65	1209.60	1253.70	1294.65
Total O&M Expenses (₹ in lakh) (D=A+B+C)	3550.04	3676.26	3805.21	3940.27	4075.36



Interest on Working Capital (“IWC”)

63. Regulations 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;”

64. The Petitioner has submitted that it has computed IWC for the 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of interest on working capital as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (RoI) on working capital considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and 10.50% (SBI 1 year MCLR



applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-24. The components of the working capital and interest thereon allowed for the instant asset is as follows:

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for 1 Month)	295.84	306.36	317.10	328.36	339.61
B	Working Capital for Maintenance Spares (15% of O&M)	532.51	551.44	570.78	591.04	611.30
C	Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	1422.94	1437.24	1441.02	1452.96	1477.48
D	Total Working Capital (A+B+C)	2251.28	2295.03	2328.91	2372.35	2428.40
E	Rate of Interest of working capital (%)	12.05	11.25	10.50	10.50	10.50
F	Interest of working capital (D*E)	271.28	258.19	244.54	249.10	254.98

Annual Fixed Charges for 2019-24 Tariff Period

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

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	Depreciation	1741.62	1745.11	1746.16	1748.32	1772.80
	Interest on Loan	261.23	196.46	109.71	62.46	100.53
	Return on Equity	5749.09	5781.55	5782.69	5784.97	5813.17
	Operation and Maintenance Expenses	3550.04	3676.26	3805.21	3940.27	4075.36
	Int. on Working Capital	271.28	258.19	244.54	249.10	254.98
	Total	11573.26	11657.57	11688.31	11785.12	12016.84

Filing Fee and Publication Expenses

66. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. Regulation 70(1) of the 2019 Tariff Regulations provides for reimbursement of filing fees and publication paid by the Petitioner. Accordingly, 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

67. The Petitioner has sought reimbursement of licence fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for 2019-24 period. The Petitioner has also sought reimbursement of RLDC fee and charges in accordance with Regulation 70(3) of the 2019 Tariff Regulations for 2019-24 tariff period. The Petitioner shall be entitled to Licence Fee and RLDC Fees and Charges in terms of 2019 Tariff Regulations.

Goods and Services Tax

68. 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 will be borne and additionally paid by the Respondent(s) to the Petitioner and the same will be charged and billed separately by the Petitioner. Further additional taxes, if any, paid by the Petitioner on account of demand from Government/Statutory authorities, may be allowed to be recovered from the beneficiaries.

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

Security Expenses

70. The Petitioner has submitted that security expenses in respect of 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. The Petitioner has requested to consider the actual security expenses incurred during 2018-19 for claiming estimated security expenses for 2019-20 which will be subject to true up at the end of



the year based on the actuals. The Petitioner has submitted that similar petition for security expenses for 2020-21, 2021-22, 2022-23 and 2023-24 will be filed on a yearly basis on the basis of the actual expenses of previous year subject to true up at the end of the year on actual expenses. The Petitioner has submitted that the difference, if any, between the estimated security expenses and actual security expenses as per the audited accounts may be allowed to be recovered from the beneficiaries on an yearly basis.

71. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on projected basis for the 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The Commission vide order dated 3.8.2021 in Petition No. 260/MP/2020 approved security expenses from 1.4.2019 to 31.3.2024. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.

Capital Spares

72. 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

73. 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. However, with effect from 1.11.2020, the 2010 Sharing Regulations has been repealed



and sharing is governed by the provisions of 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.

74. To summarise:

- I. The trued-up annual fixed charges approved 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
Annual Fixed Charges	12276.75	12267.65	12281.87	12397.63	12547.16

- II. The Annual Fixed Charges 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
Annual Fixed Charges	11573.26	11657.57	11688.31	11785.12	12016.84

75. This order disposes of Petition No. 320/TT/2020 in terms of the above discussions and findings.

sd/-
(P. K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I.S. Jha)
Member

