

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 323/TT/2020

Coram:

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

Date of Order: 18.10.2021

In the matter of:

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

And in the matter of:

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

.....Petitioner

Versus

1. Bihar State Power (Holding) Company Limited,
(Formerly Bihar State Electricity Board-BSEB),
Vidyut Bhavan, Bailey Road,
Patna-800001.
2. West Bengal State Electricity Distribution Company Limited,
Bidyut Bhawan, Bidhan Nagar,
Block DJ, Sector-II, Salt Lake City,
Calcutta-700091.
3. Grid Corporation of Orissa Limited,
Shahid Nagar,
Bhubaneswar-751007.



4. Jharkhand State Electricity Board,
In Front of Main Secretariat, Doranda,
Ranchi-834002.
5. Damodar Valley Corporation,
DVC Tower, Maniktala, Civic Centre, VIP Road,
Calcutta-700054.
6. Power Department,
Government of Sikkim,
Gangtok-737101.

.....Respondent(s)

For Petitioner : Shri S. S. Raju, PGCIL
Shri B. Dash, PGCIL
Shri A. K. Verma, PGCIL
Shri Ved Prakash Rastogi, PGCIL

For Respondents : None

ORDER

The Petitioner, 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; truing up of transmission tariff of the 2014-19 tariff 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 for the period from 1.4.2019 to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of **Asset-I**: 400 kV Transmission System associated with Farakka-I and II STPS in Eastern Region (hereinafter referred to as “the transmission system”).

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 tried 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 the capital cost including the additional capitalization/ DE-capitalization going to be incurred during 2019-24 period as claimed by petitioner.
- 4) (a) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2014 and Tariff regulations 2019 as per para 9 and 10 above for respective block.

(b) It is further submitted that deferred tax liability before 01.04.2009 shall be recoverable from the beneficiaries or long term transmission customers /DICs as the case may be, as and when materialized as per regulation 49 of 2014 and regulation 67 of 2019 tariff regulation. The petitioner may be allowed 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 levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.

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

3. **Backdrop of the case:**

- a) The implementation of the transmission system for evacuation of Central Sector power from Stage-I and II of Farakka Super Thermal Power Station was



contemplated in the scheme of power generation. Accordingly, the transmission system was completed and implemented by NTPC. Subsequently, the Petitioner took over the transmission system from NTPC.

b) The scope of work with respect to Stage-I of the transmission system was approved by the Ministry of Power (MoP) vide letter dated 15.3.1991 for ₹6990.00 lakh and the same is as follows:

- i. Farakka-Durgapur Transmission Line;
- ii. Farakka-Jeerat Transmission Line; and
- iii. Durgapur Sub-station and sub-station extension of Jeerat (WBSEB).

c) The scope of work with respect to Stage-II of the transmission system was approved by MoP vide letters dated 28.5.1992 and 25.11.1992 at a cost of ₹19076.00 lakh. The Revised Cost Estimate of ₹28589.00 lakh, including Foreign Exchange Rate Variation (FERV) of ₹5798.00 lakh with respect to Stage-II of the transmission system was accorded by MoP vide letter dated 19.8.1997 with its scope of work as follows:

Transmission Line:

- i. Farakka-Bhagalpur D/C Transmission Line;
- ii. Bhagalpur-Biharshariff D/C Transmission Line;
- iii. Farakka Jeerat-II S/C Transmission Line;
- iv. Farakka-Durgapur-II S/C Transmission Line; and
- v. Durgapur-Jamshedpur S/C Transmission Line

Sub-station:

- i. Biharshariff (400/ 220 kV);
- ii. Jamshedpur (400/ 220 kV); and
- iii. Sub-station extension works at Jeerat (WBSEB) and Durgapur.

d) The scope of work of various transmission assets covered under the transmission system was completed during the period from 1985 to 1994 and the assets were put under commercial operation progressively as follows:

Transmission line/ Sub-station	COD
Farakka STPS Stage-I	
400 kV S/C Farakka-Jeerat transmission line-I	1.1.1986
400 kV S/C Farakka-Durgapur transmission line-I	1.7.1987
Farakka STPS Stage-II	
400 kV D/C Farakka-Kahalgaon transmission line (ckt.-1)	1.5.1993



400 kV D/C Farakka-Kahalgaon transmission line (ckt.-2)	1.10.1991
400 kV D/C Kahalgaon-Biharshariff transmission line (ckt.-1)	1.10.1991
400 kV D/C Kahalgaon-Biharshariff transmission line (ckt.-2)	1.1.1993
400 kV S/C Farakka-Durgapur transmission line-II	1.8.1992
400 kV S/C Farakka-Jeerat transmission line-II and associated Jeerat Sub-station extension	1.12.1994
400 kV S/C Durgapur-Jamshedpur and associated sub-station at Durgapur and Jamshedpur	1.9.1994

e) Based on the Order dated 5.1.2006 in petition no. 126/2004, which was subsequently revised vide Orders dated 18.7.2006 and 7.2.2008, we have considered the COD as 1.4.1992 in this order.

f) The transmission tariff for the transmission system for the period from 1.4.1997 to 31.3.2002 was notified vide MoP notification dated 4.12.1998 (for Farakka STPS Stage-I and Farakka STPS Stage-II, Part) and dated 11.5.1999 (for Farakka STPS Stage-II, balance).

g) Based on the terms and conditions of tariff contained in the Commission's notification dated 26.3.2001, the transmission tariff of the transmission system for the 2001-04 period from 1.4.2001 to 31.3.2004 was allowed (after considering FERV on the outstanding loan as on 31.3.2001) by the Commission vide order dated 4.8.2003 and subsequently revised vide order dated 5.1.2008 in Petition No. 12/2002. The said transmission tariff was allowed after taking into consideration Additional Capital Expenditure (ACE) from 1997 to 2001 on account of FERV.

h) The transmission tariff of the transmission system for the 2004-09 period from 1.1.2004 to 31.3.2009 was allowed (after considering additional FERV as on 1.4.2004) by the Commission vide order dated 5.1.2006 in Petition No. 126/2004 which was modified vide order dated 18.7.2006 in I.A. No. 39/2006 (in Petition No. 126/2004).

i) Based on APTEL's judgments dated 4.10.2006 and 16.5.2007 in Appeal No. 135/2005 and Appeal No. 121/2005 respectively, the transmission tariff of the transmission system for the period from 1.4.2004 to 31.3.2009 was revised vide order dated 7.2.2008 in Petition No. 126/2004.



j) Further, based on the APTEL's judgment dated 4.10.2006, revised transmission tariff of the transmission system for the 2001-04 tariff period was allowed vide order dated 5.1.2008 in Petition No. 12/2002.

k) The transmission tariff of the transmission system for the period from 1.4.2009 to 31.3.2014 was allowed vide order dated 4.3.2013 in Petition No. 323/2010 which was subsequently trued-up with determination of tariff of the transmission system for the 2014-19 tariff period vide order dated 18.3.2016 in Petition No. 12/TT/2015.

l) The entire scope of work covered under the transmission system is complete and is covered in the instant petition.

m) The Petitioner has sought revision of transmission tariff allowed for the 2001-04 and 2004-09 tariff period on account of change in Interest on Loan (IoL) and IWC to the extent of revision in IoL and in Maintenance Spares in terms of the judgments of the APTEL dated 22.1.2007 in Appeal No. 81/2005 and batch matters and 13.6.2007 in Appeal No. 139/2006 and batch matters; consequential revision of transmission tariff allowed for the 2009-14 tariff period; truing up of tariff of the 2014-19 tariff period; and determination of transmission tariff of the 2019-24 tariff period for the transmission system. The APTEL vide judgment dated 22.1.2007 in Appeal No. 81/2005 and batch matters pertaining to generating stations of NTPC had considered 4 (four) issues. The issues considered by the APTEL and its decisions/ directions are as follows:

Sl. No.	Issue	APTEL's decisions/ directions
1	Whether APTEL can enquire into the validity of Regulations framed by the Commission	Challenge to the validity of Regulations framed by the Commission falls outside the purview of APTEL
2	Computation of IoL	In view of the order of the APTEL dated 14.11.2016 in Appeal Nos. 94 and 96 of 2005 and order dated 24.1.2007 passed in Appeal Nos. 81 to 87, 89 to 93 of 2005, computation of loan has to be based on loan repayment on normative basis. The Commission is required to recalculate the loan outstanding as on 31.3.2004 based on loan repayment on normative basis



Sl. No.	Issue	APTEL's decisions/ directions
3(a)	O&M Expenses: Inadequate provision of employee costs as part of O&M Expenses due to variation in salary and wages	Commission's view upheld
3(b)	O&M Expenses: Non-inclusion of incentives and ex-gratia payment to employees	Commission's view upheld
4	Cost of spares for calculation of working capital	Commission's view upheld

n) The APTEL in its judgment dated 13.6.2007 in Appeal No. 139/2006 and batch matters pertaining to generating stations of NTPC had considered 9 (nine) issues. The Commission and certain interested parties preferred Civil Appeals against the APTEL's judgments before the Hon'ble Supreme Court in 2007. The Appeals were admitted and initially stay was granted by the Hon'ble Supreme Court. Subsequently, on an assurance by NTPC that the issues under Appeal would not be pressed for implementation during the pendency of the Appeals, the stay was vacated by the Hon'ble Supreme Court.

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

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

q) 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 of the petition for the 2014-19 tariff period.



r) The instant petition was heard on 31.3.2021 and in view of the APTEL's judgments dated 22.1.2007 and 13.6.2007 and the judgment of the Hon'ble Supreme Court dated 10.4.2018, tariff is being revised. Period-wise transmission tariff is being re-worked based on the Tariff Regulations applicable for the respective tariff periods and suitable assumptions have been made at certain places and applied, which are indicated.

4. The Respondents are distribution licensees, power departments and transmission licensees which are procuring transmission services from the Petitioner, mainly beneficiaries of Eastern 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 notices published in the newspapers. None of the Respondents have filed reply in the matter.

Re: Interest on Loan

6. The APTEL while dealing with the issue of computation of IoL, in judgment dated 22.1.2007 observed that IoL for the period from 1.4.1998 to 31.3.2001 shall be computed only on normative loan repayment as per its judgment dated 14.11.2006 in Appeal Nos. 94 and 96 of 2005. The APTEL vide judgment dated 14.11.2006 had set aside the Commission's methodology of computation of loan on the actual repayment basis or normative repayment whichever is higher and held that the Commission is required to adopt normative debt repayment methodology for working out the IoL liability for the period from 1.4.1998 to 31.3.2001. In view of the above, the interest allowed for the 2004-09 tariff period is revised on the basis of the normative debt repayment methodology.



Re: Additional Capital Expenditure

7. The APTEL vide judgment dated 13.6.2007 in Appeal No.139/2006 and others held that ACE after COD should also be considered for computation of maintenance spares. In view of the above, the maintenance spares to be considered for computation of working capital for the 2001-04 and 2004-09 tariff periods are also required to be revised taking into consideration ACE after COD.

Re: Depreciation

8. As regards depreciation, the APTEL in judgment dated 13.6.2007 in Appeal No. 139/2006 observed that depreciation is an expense and it cannot be deployed for deemed repayment of loan and accordingly directed the Commission to compute the outstanding loan afresh. In view of the above directions of the APTEL, the outstanding loan allowed for the transmission system for the 2001-04 and 2004-09 tariff periods is revised in the instant order.

9. The revision of transmission tariff allowed for 2001-04 and 2004-09 tariff periods necessitates the revision of transmission tariff allowed for the 2009-14 tariff period, which is also being done in the present order. The implementation of the directions of the APTEL vide judgments dated 22.1.2007 in Appeal No. 81/2005 and batch matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters was kept pending in case of the Petitioner was kept awaiting the outcome of the Civil Appeals filed before the Hon'ble Supreme Court. Taking into consideration the facts of the case and keeping in view the interest of the consumers, we are of the view that the beneficiaries should not be burdened with the carrying cost for the difference in the tariff allowed earlier and allowed in the instant order for the 2001-04, 2004-09 and 2009-14 tariff periods. Therefore, we direct that the Petitioner will neither claim nor pay any carrying cost from or to the beneficiaries for the difference, if any, in the tariff



allowed earlier and the tariff being allowed in the instant order. Further, the said difference in tariff shall be recovered/ paid over a period of six months from the date of issue of this order.

10. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 16.1.2020, Petitioner's affidavit dated 30.3.2021 furnishing additional information and Petitioner's affidavit dated 19.4.2021 filed in compliance of the Record of Proceedings (RoP) dated 31.3.2021.

11. The Petitioner has made submissions regarding RoE, IWC, Filing Fee and Publication Expenses, GST, capital spares and security expenses. The submissions and/ or prayers related to the afore-said issues have not been reproduced herein for the sake of brevity and consequently the Commission has given findings directly on the said issues taking into consideration the previous findings which have attained finality on the above issues.

12. The hearing in this matter was held on 31.3.2021 through video conference and the order was reserved. Having heard the representatives of the Petitioner and after perusal of the materials on record, we proceed to dispose of the petition.

REVISION OF TRANSMISSION CHARGES ALLOWED FOR THE 2001-04, 2004-09 AND 2009-14 TARIFF PERIODS

2001-04 Period

13. The Commission vide order dated 4.8.2003 in Petition No. 12/2002 had allowed the transmission charges of the transmission system for the 2001-04 tariff period which were subsequently revised vide order dated 5.1.2008 in Petition No. 12/2002 and the same are as follows:



(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Depreciation	905.85	905.85	905.85
Interest on Loan	166.46	132.97	114.85
Return on Equity	1930.32	1930.32	1930.32
Advance against Depreciation	242.27	27.66	27.66
Interest on Working Capital	149.53	149.85	154.97
O&M Expenses	1385.33	1468.45	1556.56
Total	4779.76	4615.09	4690.21

14. The Petitioner has claimed the revised transmission charges in respect of the transmission system for the 2001-04 tariff period in this petition as follows:

(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Depreciation	905.85	905.85	905.85
Interest on Loan	144.89	115.74	99.97
Return on Equity	2067.36	2067.36	2067.36
Advance against Depreciation	170.90	0.00	0.00
Interest on Working Capital	150.39	151.65	156.82
O&M Expenses	1385.33	1468.45	1556.56
Total	4824.72	4709.05	4786.56

15. We have considered the submissions of the Petitioner. The transmission tariff is allowed for the transmission system on the basis of the following:

- a) Admitted capital cost as on 1.4.2001 and as on 31.3.2004 of ₹32313.96 lakh for the transmission system allowed vide order dated 5.1.2008 in Petition No. 12/2002;
- b) Weighted Average Rate of Interest (WAROI) on actual loan, Weighted Average Rate of Depreciation (WAROD), Rate of IWC and O&M Expenses as per order dated 5.1.2008 in Petition No. 12/2002; and
- c) There being no ACE during the 2001-04 tariff period, there is no requirement to revise the maintenance spares component for calculating IWC.

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



(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Depreciation	905.85	905.85	905.85
Interest on Loan	166.46	132.97	114.85
Return on Equity	1930.32	1930.32	1930.32
Advance against Depreciation	242.27	27.66	27.66
Interest on Working Capital	149.53	149.85	154.97
O&M Expenses	1385.33	1468.45	1556.56
Total	4779.76	4615.09	4690.21

17. The Annual Fixed Charges (AFC) of the transmission system as allowed vide order dated 5.1.2008 in Petition No. 12/2002, claimed by the Petitioner in the instant Petition and allowed in the instant order are as follows:

(₹ in lakh)

Particulars	2001-02	2002-03	2003-04
Allowed vide order dated 5.1.2008 in Petition No. 12/2002	4779.76	4615.09	4690.21
Claimed by the Petitioner in the instant petition	4824.72	4709.05	4786.56
Approved in the instant order	4779.76	4615.09	4690.21

2004-09 Period

18. The Commission vide order dated 5.1.2006 in Petition No. 126/2004 had allowed the transmission charges of the transmission system for the 2004-09 tariff period which was modified vide order 18.7.2006 in Petition No. 126/2004 and was subsequently revised vide order dated 7.2.2008 in Petition No. 126/2004 and the same are as follows:

(₹ in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	917.54	917.54	917.54	553.83	553.83
Interest on Loan	46.22	17.91	1.88	0.00	0.00
Return on Equity	2142.07	2142.07	2142.07	2142.07	2142.07
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	130.27	133.93	138.05	136.28	141.19
O&M Expenses	827.39	860.45	895.73	930.16	968.67
Total	4063.49	4071.89	4095.26	3762.34	3805.77



19. The Petitioner has claimed the revised transmission charges in respect of the transmission system for the 2004-09 tariff period in this petition as follows:

Particulars	(₹ in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	917.54	917.54	917.54	553.83	553.83
Interest on Loan	53.49	35.59	17.69	4.37	0.00
Return on Equity	2142.07	2142.07	2142.07	2142.07	2142.07
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	130.40	134.23	138.32	136.36	141.19
O&M Expenses	827.39	860.45	895.73	930.16	968.67
Total	4070.89	4089.88	4111.35	3766.78	3805.76

20. We have considered the submissions of the Petitioner. The transmission tariff is allowed for the transmission system on the basis of the following:

- a) The admitted capital cost as on 31.3.2009 of ₹32730.94 lakh (including FERV of ₹416.98 lakh during the 2001-04 tariff period) for the transmission system allowed vide order dated 7.2.2008 in Petition No. 126/2004; and
- b) WAROI on actual loan, WAROD, Rate of IWC and O&M Expenses as per order dated 7.2.2008 in Petition No. 126/2004.

21. In view of the above, the revised transmission charges allowed for the transmission system for the 2004-09 tariff period are as follows:

Particulars	(₹ in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	917.54	917.54	917.54	553.83	553.83
Interest on Loan	51.72	34.41	17.11	4.22	0.00
Return on Equity	2142.07	2142.07	2142.07	2142.07	2142.07
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	130.37	134.21	138.31	136.35	141.19
O&M Expenses	827.39	860.45	895.73	930.16	968.67
Total	4069.09	4088.68	4110.76	3766.64	3805.78

22. AFC of the transmission system as allowed vide order dated 7.2.2008 in Petition No. 126/2004, claimed by the Petitioner in the instant petition and allowed in the instant order are as follows:



(₹ in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Allowed vide order dated 7.2.2008 in Petition No. 126/2004	4063.49	4071.89	4095.26	3762.34	3805.77
Claimed by the Petitioner in the instant petition	4070.89	4089.88	4111.35	3766.78	3805.76
Approved in the instant order	4069.09	4088.68	4110.76	3766.64	3805.78

2009-14 Period

23. The Commission vide order dated 4.3.2013 in Petition No. 323/2010 had allowed the transmission tariff of the transmission system for the 2009-14 tariff period which was trued-up vide order dated 18.3.2016 in Petition No. 12/TT/2015 as follows:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	558.23	558.23	558.23	558.23	582.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2857.22	2961.87	2964.78	2964.78	3012.21
Interest on Working Capital	141.99	148.20	152.56	157.09	163.35
O&M Expenses	1415.42	1496.01	1581.99	1672.56	1767.90
Total	4972.85	5164.31	5257.55	5352.65	5525.62

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

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	558.23	558.23	558.23	558.23	582.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2857.22	2961.87	2964.78	2964.78	3012.21
Interest on Working Capital	141.99	148.20	152.56	157.09	163.35
O&M Expenses	1415.42	1496.01	1581.99	1672.56	1767.90
Total	4972.86	5164.31	5257.56	5352.66	5525.63

25. We have considered the submissions of the Petitioner. The revised transmission tariff is allowed for the transmission system on the basis of the following:

- a) Admitted capital cost as on 1.4.2009 of ₹32730.94 lakh; and



b) WAROI on actual loan, WAROD, Rate of IWC and O&M Expenses as per order dated 18.3.2016 in Petition No. 12/TT/2015.

26. In view of the above, the revised transmission charges allowed for the transmission system for the 2009-14 tariff period are as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	558.23	558.23	558.23	558.23	582.17
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2857.22	2961.87	2964.78	2964.78	3012.21
Interest on Working Capital	141.99	148.20	152.56	157.09	163.35
O&M Expenses	1415.42	1496.01	1581.99	1672.56	1767.90
Total	4972.84	5164.31	5257.55	5352.65	5525.62

27. AFC of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, claimed by the Petitioner in the instant petition and allowed in the instant order are as follows:

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	4972.85	5164.31	5257.55	5352.65	5525.62
Claimed by the Petitioner in the instant petition	4972.86	5164.31	5257.56	5352.66	5525.63
Approved in the instant order	4972.84	5164.31	5257.55	5352.65	5525.62

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

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	561.39	578.41	591.17	614.32	608.99
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	3028.69	3051.01	3057.88	3054.78	3056.56
Interest on Working Capital	171.96	175.87	179.39	183.00	186.20
O&M Expenses	1616.96	1671.33	1726.88	1783.92	1843.23
Total	5379.00	5476.62	5555.32	5636.02	5694.98



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

Particular	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	134.75	139.28	143.91	148.66	153.60
Maintenance Spares	242.54	250.70	259.03	267.59	276.48
Receivables	896.50	912.77	925.89	939.34	949.16
Total Working Capital	1273.79	1302.75	1328.83	1355.59	1379.24
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	171.96	175.87	179.39	183.00	186.20

Capital Cost

30. The capital cost of the transmission system has been calculated in accordance with Regulations 9(3) and 9(6) of the 2014 Tariff Regulations.

31. The Commission vide order 18.3.2016 in Petition No. 12/TT/2015 had admitted the capital cost as on 1.4.2014 of ₹33131.35 lakh and capital cost as on 1.4.2019 of ₹33487.98 lakh including projected ACE of ₹427.15 lakh and de-capitalization of ₹70.52 lakh during the 2014-19 tariff period for the transmission system for determination of tariff for the 2014-19 period.

32. The details of the capital cost as on 1.4.2014, capital cost as on 31.3.2019 and ACE (including de-capitalization) during the 2014-19 tariff period, as claimed by the Petitioner in respect of the transmission system in the instant petition are as follows:

Capital Cost allowed (as on 1.4.2014)	(₹ in lakh)							Capital Cost allowed (as on 31.3.2019)
	2014-15		2015-16		2016-17	2017-18	2018-19	
	ACE	De-capitalization	ACE	De-capitalization	ACE	ACE	ACE	
33131.35	222.22	(40.52)	161.76	(34.59)	128.19	89.88	20.81	33679.10

33. Accordingly, the admitted capital cost as on 31.3.2014 of ₹33131.35 lakh for the transmission system has been considered for working out the true up tariff for the 2014-19 tariff period.



Additional Capital Expenditure

34. The Commission vide order dated 18.3.2016 in Petition No. 12/TT/2015 had allowed net ACE of ₹427.15 lakh during the 2014-19 tariff period for the transmission system towards replacement of sub-station equipment and PLCC under Regulation 14(3)(ix) of the 2014 Tariff Regulations.

35. The Petitioner in the instant petition has claimed actual ACE of ₹547.75 lakh (after deducting the claimed de-capitalization) during the 2014-19 tariff period under Regulations 14(3)(vii) and (ix) of the 2014 Tariff Regulations and has submitted that the same has already been allowed towards tower strengthening of 400 kV S/C Farakka-Durgapur I, 400 kV S/C Durgapur-Jamshedpur and 400 kV Farakka-Sagardighi-Jeerat lines and replacement of Circuit Breaker, Isolators, ICT, Reactor and Circuit Breaker protection panel at Durgapur and Jeerat.

De-capitalization

36. During the hearing dated 31.3.2021, the Commission had observed that the 50 MVar Line Reactor at Subhashgram end of 400 kV S/C Sagardighi-Subhasgram Transmission Line, which is sought to be converted into a Switchable Line Reactor and covered in Petition No. 50/TT/2020, was shifted from the transmission system covered under the instant Petition. Accordingly, vide RoP dated 31.3.2021, the Petitioner was directed to de-capitalize the said 50 MVar Line Reactor from the transmission system covered under the instant petition and re-capitalize in Petition No. 50/TT/2020 and file the revised tariff forms in the aforementioned petitions.

37. In response, the Petitioner vide affidavit dated 19.4.2021 has submitted the details of de-capitalization of the said 50 MVar Line Reactor (in Form-10B) along with the revised tariff forms. The de-capitalization details submitted are as follows:



(₹ in lakh)

Year of de-capitalization	Equipment de-capitalized	COD of equipment to be de-capitalized	Original book value of the equipment being de-capitalized	Cumulative depreciation corresponding to de-capitalization date	Net Book Value
2017-18 (6.3.2018)	SS item (Reactor)	1.12.1994	193.63	174.27	19.36

38. Accordingly, the details of actual ACE and de-capitalization during the 2014-19 tariff period, as claimed by the Petitioner vide affidavit dated 19.4.2021 are as follows:

(₹ in lakh)

Capital Cost allowed (as on 1.4.2014)	Actual ACE during the 2014-19 period								Capital Cost (as on 31.3.2019)
	2014-15		2015-16		2016-17	2017-18		2018-19	
	ACE	De-capitalization	ACE	De-capitalization	ACE	ACE	De-capitalization	ACE	
33131.35	222.22	(40.5)	161.76	(34.59)	128.19	89.88	(193.63)*	20.81	33485.47

*De-capitalization date of the Reactor: 6.3.2018

39. We have considered the submissions of the Petitioner. The Petitioner in the instant petition has de-capitalized the cost of shifted 50 MVAR Line Reactor. We have allowed de-capitalization date of the said 50 MVAR Line Reactor as 6.3.2018. The details of de-capitalization considered in the instant order are as follows:

(₹ in lakh)

COD of the de-capitalized equipment	Date of de-capitalisation considered in the instant order	Original Book Value of the equipment being de-capitalized	Cumulative depreciation corresponding to de-capitalization date	Net Book Value
1.12.1994	6.3.2018	193.63	174.27	19.36

40. The ACE claimed by the Petitioner in this petition is towards tower strengthening of 400 kV S/C Farakka-Durgapur I, 400 kV S/C Durgapur-Jamshedpur and 400 kV Farakka-Sagardighi-Jeerat lines and replacement of Circuit Breaker, Isolators, ICT, Reactor and Circuit Breaker protection panel at Durgapur and Jeerat. The same is allowed under Regulations 14(3)(vii) and (ix) of the 2014 Tariff Regulations. Accordingly, the capital cost considered for the 2014-19 tariff period is as follows:



(₹ in lakh)

Capital Cost (as on 1.4.2014)	Actual ACE/ De-capitalization during the 2014-19 period								Capital Cost (as on 31.3.2019)
	2014-15		2015-16		2016-17	2017-18		2018-19	
	ACE	De- capitalization	ACE	De- capitalization	ACE	ACE	De- capitalization	ACE	
33131.35	222.22	(40.52)	161.76	(34.59)	128.19	89.88	(193.63)**	20.81	33485.47

**50 MVAR Line Reactor de-capitalized on 6.3.2018

Debt-Equity Ratio

41. 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 transmission tariff for the period ending on 31.3.2014 shall be considered. The debt-equity ratio of 70:30 has been considered for ACE allowed during 2014-19 tariff period in accordance with Regulation 19(5) of the 2014 Tariff Regulations. We note that the original equipment were funded in the debt-equity ratio of 50:50. Accordingly, the de-capitalization of equipment is carried out in the debt-equity ratio 50:50. The details of the debt-equity ratio as on 1.4.2014 and 31.3.2019 for the transmission system is as follows:

Debt-Equity for Capital Cost as on 1.4.2014:

Funding	Capital Cost (as on 1.4.2014) (₹ in lakh) (A)	(in %)
Debt	17710.73	53.46
Equity	15420.62	46.54
Total	33131.35	100.00

Debt-Equity for ACE and de-capitalization during the 2014-19 period:

Funding	ACE (₹ in lakh) (B)	(in %)	De- capitalization (₹ in lakh) (C)	(in %)	ACE (₹ in lakh) (D)	(in %)	De- capitalization (₹ in lakh) (E)	(in %)
	2014-15				2015-16			
Debt	155.55	70.00	20.26	50.00	113.23	70.00	17.30	50.00
Equity	66.67	30.00	20.26	50.00	48.53	30.00	17.30	50.00
Total	222.22	100.00	40.52	100.00	161.76	100.00	34.59	100.00



Funding	ACE (₹ in lakh) (F)	(in %)	ACE (₹ in lakh) (G)	(in %)	De- capitalization*** (₹ in lakh) (H)	(in %)	ACE (₹ in lakh) (I)	(in %)
	2016-17		2017-18			2018-19		
Debt	89.73	70.00	62.92	70.00	96.82	50.00	14.57	70.00
Equity	38.46	30.00	26.96	30.00	96.82	50.00	6.24	30.00
Total	128.19	100.00	89.88	100.00	193.63	100.00	20.81	100.00

*** 50 MVAR Line Reactor de-capitalised on 6.3.2018

Debt-Equity for Capital Cost as on 31.3.2019:

Funding	Total Capital Cost (₹ in lakh) (as on 31.3.2019) (J)=(A)+(B)-(C)+(D)-(E)+(F)+(G)-(H)+(I)	(in %)
Debt	18012.36	53.79
Equity	15473.11	46.21
Total	33485.47	100.00

Depreciation

42. The transmission system has completed 12 years before 1.4.2014 and, thus, depreciation during the 2014-19 tariff period has been calculated based on the remaining depreciable value to be recovered in the balance useful life.

43. We note that the Commission vide order dated 18.3.2016 in Petition No. 12/TT/2015 had erroneously considered the balance useful life of the transmission system as 15 years as on 1.4.2009, which is being corrected as 16 years as on 1.4.2009 in line with the Commission's order dated 5.1.2006 in Petition No. 126/2004.

44. Accordingly, based on the details considered in order dated 5.1.2006 in Petition No. 126/2004, the depreciation has been calculated based on the remaining depreciable value to be recovered over the balance useful life. Depreciation allowed during the 2014-19 tariff period is as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	1.4.2017-6.3.2018 (Pro-rata 340 days)	7.3.2018-31.3.2018 (Pro-rata 25 days)	2018-19
Opening Gross Block	33131.35	33313.05	33440.22	33568.41	33374.78	33464.66
ACE	222.22	161.76	128.19	89.88	89.88	20.81
De-capitalization	40.52	34.59	0.00	0.00	0.00	0.00
Closing Gross Block	33313.05	33440.22	33568.41	33658.29	33464.66	33485.47
Average Gross Block	33222.20	33376.64	33504.32	33613.35	33419.72	33475.07
Freehold Land	619.85	619.85	619.85	619.85	619.85	619.85
Weighted Average Rate of Depreciation (WAROD) (in %)	1.67	1.72	1.75	1.78	1.58	1.81
Balance useful life of the asset (Year)	11.00	10.00	9.00	8.00	8.00	7.00
Lapsed Life of the asset (Year)	22.00	23.00	24.00	25.00	25.00	26.00
Depreciable Value	29342.12	29481.11	29596.02	29694.15	29519.88	29569.69
Remaining Depreciable Value at the beginning of the year	6120.16	5733.91	5275.43	4787.40	4229.97	4243.56
Depreciation during the year	556.38	573.39	586.16	557.44	36.22	606.22
Cumulative depreciation at the end of the year	23778.33	24320.59	24906.75	25464.19	25326.13	25932.35
Remaining Depreciable Value at the end of the year	5563.79	5160.52	4689.27	4229.96	4193.75	3637.34

45. Depreciation in respect of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	621.32	639.15	639.15	639.15	639.15
Claimed by the Petitioner in the instant petition	561.39	578.41	591.17	614.32	608.99
Approved after true-up in this order	556.38	573.39	586.16	593.65	606.22



Interest on Loan

46. The Petitioner has not claimed IoL during the 2014-19 tariff period. Therefore, no IoL has been considered in this order.

Return on Equity

47. The Petitioner has claimed RoE for the transmission system in terms of Regulations 24 and 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at Minimum Alternate Tax (MAT) rates and has claimed effective tax rates for the 2014-19 tariff period as follows:

Year	Claimed effective tax rate (in %)	Grossed up RoE (in %) [(Base Rate)/(1-t)]
2014-15	21.018	19.625
2015-16	21.382	19.715
2016-17	21.338	19.705
2017-18	21.337	19.704
2018-19	21.549	19.758

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

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

49. MAT rates considered in order dated 27.4.2020 for the purpose of grossing up of rate of RoE for truing up of the tariff of the 2014-19 tariff period in terms of the provisions of the 2014 Tariff Regulations is considered in the instant case which is as follows:



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

50. The Petitioner has claimed RoE for the 2014-19 period after grossing up RoE of 15.50% with Effective Tax rates (based on MAT rates) each year as per Regulation 25(3) of the 2014 Tariff Regulations. RoE is trued-up on the basis of MAT rates applicable in the respective years and is allowed for the transmission system as follows:

Particulars	(₹ in lakh)					
	2014-15	2015-16	2016-17	1.4.2017-6.3.2018 (Pro-rata 340 days)	7.3.2018-31.3.2018 (Pro-rata 25 days)	2018-19
Opening Equity	15420.62	15467.03	15498.26	15536.72	15439.90	15466.87
Additions	66.67	48.53	38.46	26.96	26.96	6.24
De-capitalization	20.26	17.30	0.00	0.00	0.00	0.00
Closing Equity	15467.03	15498.26	15536.72	15563.68	15466.87	15473.11
Average Equity	15443.82	15482.64	15517.49	15550.20	15453.38	15469.99
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	20.961	21.342	21.342	21.342	21.342	21.549
Rate of Return on Equity (in %)	19.610	19.705	19.705	19.705	19.705	19.758
Return on Equity	3028.53	3050.85	3057.72	2854.29	208.57	3056.56

51. RoE in respect of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	3034.47	3044.96	3044.96	3044.96	3044.96
Claimed by the Petitioner in the instant petition	3028.69	3051.01	3057.88	3054.78	3056.56



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Approved after true-up in this order	3028.53	3050.85	3057.72	3062.86	3056.56

Operation & Maintenance Expenses (O&M Expenses)

52. The total O&M Expenses claimed by the Petitioner for the various elements covered under the transmission system are as follows:

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
17 Numbers 400 kV sub-station Bays (Biharshariff, Kahalgaon, Jeerat, Farakka, Jamshedpur and Durgapur)					
947.00 kms S/C (Twin Conductor) (Farakka-Jeerat-I and II, Farakka-Durgapur-I and II and Durgapur-Jamshedpur)					
296.00 kms D/C (Twin Conductor) (Farakka-Kahalgaon and Kahalgaon-Biharshariff)					
400 kV sub-station ICT (Durgapur, Jamshedpur and Biharshariff)					
Claimed by the Petitioner in the instant petition	1616.96	1671.33	1726.88	1783.92	1843.23

53. Regulation 29(3) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The norms specified in respect of the elements covered in the transmission system are as follows:

Element	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
D/C (Twin/Triple Conductor)	₹0.707 lakh/km	₹0.731 lakh/km	₹0.755 lakh/km	₹0.780 lakh/km	₹0.806 lakh/km
400 kV Sub-station	₹60.30 lakh/ bay	₹ 62.30 lakh/ bay	₹64.37 lakh/ bay	₹66.51 lakh/ bay	₹68.71 lakh/ bay
S/C (Twin/Triple Conductor)	₹0.404 lakh/km	₹0.418 lakh/km	₹0.432 lakh/km	₹0.446 lakh/km	₹0.461 lakh/km

54. The O&M Expenses are allowed for the various elements covered under the transmission system as per the norms specified in Regulation 29(3) of the 2014 Tariff Regulations and are as follows:

(₹ in lakh)					
Details	2014-15	2015-16	2016-17	2017-18	2018-19
17 Numbers 400 kV sub-station Bays	1025.10	1059.10	1094.29	1130.67	1168.07
947.00 kms S/C (Twin/Triple Conductor)	382.59	395.85	409.10	422.36	436.57
296.00 kms D/C (Twin/Triple Conductor)	209.27	216.38	223.48	230.88	238.58
Total	1616.96	1671.32	1726.87	1783.91	1843.21



55. O&M Expenses in respect of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	1616.96	1671.32	1726.87	1783.91	1843.21
Claimed by the Petitioner in the instant petition	1616.96	1671.33	1726.88	1783.92	1843.23
Approved after true-up in this order	1616.96	1671.32	1726.87	1783.91	1843.21

Interest on Working Capital

56. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and the trued-up IWC allowed in respect of the transmission system is as follows:

Particulars	(₹ in lakh)					
	2014-15	2015-16	2016-17	1.4.2017- 6.3.2018 (Pro-rata 340 days)	7.3.2018- 31.3.2018 (Pro-rata 25 days)	2018-19
Interest on Working Capital						
Working Capital for O&M Expenses (O&M Expenses for 1 month)	134.75	139.28	143.91	148.66	148.66	153.60
Working Capital for Maintenance Spares (15% of O&M Expenses)	242.54	250.70	259.03	267.59	267.59	276.48
Working Capital for Receivables (Equivalent to 2 months of annual fixed cost)	895.62	911.89	925.00	938.23	923.09	948.69
Total Working Capital	1272.91	1301.86	1327.94	1354.47	1339.34	1378.77
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50	13.50
Interest of Working Capital	171.84	175.75	179.27	170.33	12.38	186.13

57. IWC in respect of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, IWC claimed by the Petitioner and trued-up in the instant order are as follows:



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	173.47	177.13	180.20	183.35	186.63
Claimed by the Petitioner in the instant petition	171.96	175.87	179.39	183.00	186.20
Approved after true-up in this order	171.84	175.75	179.27	182.71	186.13

Approved Annual Fixed Charges for the 2014-19 Tariff Period

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	1.4.2017-6.3.2018 (Pro-rata 340 days)	7.3.2018-31.3.2018 (Pro-rata 25 days)	2018-19
Depreciation	556.38	573.39	586.16	557.44	36.22	606.22
Interest on Loan	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	3028.53	3050.85	3057.72	2854.29	208.57	3056.56
O&M Expenses	1616.96	1671.32	1726.87	1661.73	122.19	1843.21
Interest on Working Capital	171.84	175.75	179.27	170.33	12.38	186.13
Total	5373.72	5471.32	5550.03	5243.79	379.35	5692.13

59. Accordingly, the Annual Transmission Charges in respect of the transmission system as allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015, claimed by the Petitioner in the instant petition and approved after truing up in the instant order is are as follows:

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Allowed vide order dated 18.3.2016 in Petition No. 12/TT/2015	5446.23	5532.56	5591.19	5651.37	5713.95
Claimed by the Petitioner in the instant petition	5379.00	5476.62	5555.32	5636.02	5694.98
Approved after true-up in this order	5373.72	5471.32	5550.03	5623.14	5692.13



DETERMINATION OF ANNUAL FIXED CHARGES FOR THE 2019-24 TARIFF PERIOD

60. In line with the directions of the Commission vide RoP dated 31.3.2021, the Petitioner vide affidavit dated 19.4.2021 has filed the revised tariff forms and has now claimed the transmission charges (after considering de-capitalization in the instant case) in respect of the transmission system for the 2019-24 tariff period as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	610.56	748.73	1237.82	1878.98	2380.14
Interest on Loan	0.00	2.58	41.11	44.45	4.59
Return on Equity	2906.16	2921.36	2997.09	3086.05	3112.09
Interest on Working Capital	128.48	133.75	145.59	159.53	169.47
O&M Expenses	1734.75	1796.57	1859.33	1925.33	1991.96
Total	5379.95	5602.99	6280.94	7094.34	7658.25

61. The Petitioner vide affidavit dated 19.4.2021 has claimed IWC in respect of the transmission system for the 2019-24 period as follows:

Particular	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	144.56	149.71	154.95	160.44	166.00
Maintenance Spares	260.21	269.49	278.90	288.80	298.79
Receivables	661.47	690.78	774.36	874.64	941.59
Total Working Capital	106	110	120	132	140
	6.24	9.98	8.20	3.88	6.38
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	128.48	133.75	145.59	159.53	169.47

Capital Cost

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

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

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

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



- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- (c) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;
- (e) Capitalised Initial Spares subject to the ceiling rates in accordance with these regulations;
- (f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;
- (g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;
- (h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;
- (i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
- (j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;
- (k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;
- (l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;
- (m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;
- (n) Expenditure on account of change in law and force majeure events; and
- (o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

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

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



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

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

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

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

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

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

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

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

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

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

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

63. The Petitioner has claimed capital cost as on 31.3.2019 of ₹33485.47 lakh for the transmission system. The same has been worked out by the Commission as on 31.3.2019 and considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure

64. Regulations 25 of the 2019 Tariff Regulations provides as follows:

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

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



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

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

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

65. The Petitioner vide revised Auditors Certificate dated 26.6.2020 (filed along with additional information furnished vide affidavit dated 30.3.2021) and has claimed the projected ACE (with de-capitalization) during the 2019-24 tariff period under Regulation 25(2)(c) of the 2019 Tariff Regulations as follows:

(₹ in lakh)

Projected ACE and (De-capitalization) during the 2019-24 period							
2020-21		2021-22		2022-23		2023-24	
ACE	De-capitalization	ACE	De-capitalization	ACE	De-capitalization	ACE	De-capitalisation
1162.04	(373.47)	3029.76	(528.82)	1487.00	(286.69)	609.97	(416.87)

66. The Petitioner has submitted that ACE and de-capitalization projected during the 2019-24 tariff period is towards replacement of sub-station item such as Circuit Breaker, Isolator, Air conditioning system, Firefighting system and various types of old/obsolete electromechanical relay etc. The details with respect to ACE claimed during the 2019-24 period as submitted by the Petitioner in this petition are as follows:



a) **Replacement of Sub-station equipment:**

The sub-station equipment proposed for replacement at sub-stations covered under the transmission system were commissioned in 1992. The weighted average useful life of the said equipment was 25 years which got completed in 2017. During various routine/ alter tests, the critical condition of the said equipment have been observed and they are giving operational problems and are threat to the reliability and security to the Grid. The designs have undergone substantial changes over the period and manufacturers have discontinued the product models. The suppliers are unable to replenish parts required for quick restoration and repairs have turned out unviable. The absence of proper support from suppliers, due to obsolescence of design, the maintenance of these equipment is not possible anymore.

b) **Replacement of Circuit Breaker (CB):**

CBs have completed 25 years of useful service. The installed CBs being of pneumatic type have lots of issues including operating mechanism and SF6 gas leakage from various joints. Frequent failure of auxiliary contact of many CBs has also been witnessed.

c) **Replacement of Isolators:**

Isolators (manufacturers M/s Minel and M/s Hivlem) have completed 25 years of useful service and due to ageing, there is problem of frequent misalignment, jamming, improper closing/ opening, over travel, sluggishness in operating mechanism and hot spots. These isolators have become obsolete and, therefore, neither timely support from OEM nor related spares are available. M/s Minel is non-existent as on date and M/s Hivlem has stopped manufacturing these types of Isolators.

d) **Replacement of ICT, Reactor and CB protection panel at Durgapur and Jeerat Sub-station:**

Most of the relays are of static type. Due to ageing, problem of mal-operation/ non-operation occurs because of sticking up of contacts as coils of auxiliary relays have become weak. Cable, wiring and terminal blocks inside both control



and protection panels and equipment MBs have become brittle leading to DC leakages and other circuit failures.

e) **Replacement of Air Conditioning system of Jamshedpur and Biharshariff Sub-station:**

The existing centralized AC system is of water cooled type and has stopped functioning due to problem in reciprocating type old model compressor system and water-cooling system. For smooth functioning of protection system, AC system needs to be replaced.

f) **Replacement of Fire Fighting (FF) System of Jamshedpur and Biharshariff Sub-station:**

FF system was commissioned in 1993. Lot of problems have been faced regularly to keep the FF system in auto mode due to frequent water leakage from UG pipe line, jockey pump, valve, compressor and other joints. Accordingly, the jockey pumps, UG pipe lines, associated valves, Diesel engine etc. are required to be replaced.

g) **Replacement of various types of old/ obsolete electromechanical relays:**

All relays are of electro-mechanical type and are obsolete and give frequent problems. These need to be retrofitted with numerical type relays with DR channel naming for proper fault analysis.

h) **Replacement of various types of Civil works in Jamshedpur and Biharshariff Sub-station:**

PCC and Gravel in switchyard of the considered bays/ stations is damaged (became fade, mixed with soil & silt and converted into small pieces) at various locations. Due to this, wild vegetation, grasses etc. are growing continuously which become breeding ground for reptiles and other animals, apart from risk of increase in Step and Touch Potential. This is dangerous for safety point of view for both, equipment and human beings.

i) **Replacement of Control and Power cable of Durgapur and Jeerat Sub-station:**

Due to ageing, the power and control cables have become brittle and physical damage are also observed at many places leading to DC leakage and frequent



DC earth fault. For proper operation of the said sub-stations, replacement of interpole cables is required.

67. The Petitioner has also submitted that buildings and other civil structures like overhead tanks etc. which have been constructed in the sub-stations have completed their useful life of 30 years in accordance with the Companies Act, 2013. These buildings and civil structures had been constructed in 1990-91 and are in service for more than 30 years now and do not comply with the earthquake resistant provisions of latest IS codes. Further, as per Clause 3.2.6.1 of the National Disaster Management Guidelines for Seismic retrofitting of Deficient Buildings and Structures (“the NDM Guidelines”) as formulated by the National Disaster Management Authority, it is mandatory for all Government owned buildings and structures to be Seismic Resistant. Some of these buildings and civil structures are in dilapidated and unsafe condition and need urgent reconstruction to avoid any damage/ threat to man or property. The Petitioner has submitted that the healthiness of these civil structures shall be checked before demolishing the same.

68. The Petitioner has proposed to demolish these dilapidated and unsafe buildings and structures and construct new ones during the 2019-24 tariff period. ACE and de-capitalization proposed under the head building and civil structures corresponds to deconstruction of such old buildings and construction of new buildings and civil structures. The Petitioner has submitted that the test reports in respect of healthiness of buildings and civil structures will be submitted shortly.



69. The Petitioner has submitted the relevant provisions of authenticated documents which recommend for seismic retrofitting, demolishing and reconstruction for reference purposes as follows:

- a) Note of Appendix I, Page 135 of the 2019 Tariff Regulations;
- b) Schedule-II of the Companies Act, 2013 Part-C-I (b);
- c) Clauses 1.2.2, 1.2.4 and 3.2.6.1 and Table 5 of the NDM Guidelines;
- d) Clause 13.1.4 and 13.1.5.1 of the National Building Code 2016 Volume-II Part 7;
- e) Clause 7.4 of the National Building Code 2016 Volume I Part 0;
- f) Clause 4.5.1, 4.5.2, A 7.1 of IS 13935 : 2009 : Seismic Evaluation, Repair and Strengthening of Masonry buildings.

70. The Petitioner vide affidavit dated 30.3.2021 has submitted that the residential buildings at Jamshedpur and Biharshariff and non-residential buildings at Biharshariff and Durgapur are proposed for reconstruction under ACE. The Petitioner has further submitted that the buildings at Durgapur and Biharshariff have already completed useful life of 30 years and buildings at Jamshedpur are going to complete their useful life by 2023. These buildings are of load bearing (non-RCC frame) type and are in use by employees since 1990. The repairing of buildings at this stage will result in huge financial losses and will not provide any significant structural strength, thus repairing of these building at this stage is not viable.

71. In view of above, the Petitioner has submitted that to avoid any accidental loss of man and materials due to dilapidated condition of above buildings, it is proposed to construct following buildings after demolition of old and dilapidated quarters:

- a) 17 residential quarters each at Jamshedpur and Biharshariff;
- b) 1 non-residential building each at Durgapur and Biharshariff.

72. We have considered the submissions of the Petitioner. The Petitioner vide affidavit dated 30.3.2021 has submitted the Auditors Certificate dated 26.6.2020,



giving the summary of details of projected ACE/ de-capitalization during the 2019-24 tariff period as follows:

(₹ in lakh)

ACE/ De-capitalization and Year	Building and civil works	Sub-station	Total
ACE during 2020-21	339.54	822.50	1162.04
De-capitalization during 2020-21	11.00	362.47	373.47
ACE during 2021-22	1479.41	1550.35	3029.76
De-capitalization during 2021-22	0.00	528.82	528.82
ACE during 2022-23	473.56	1013.44	1487.00
De-capitalization during 2022-23	0.00	286.69	286.69
ACE during 2023-24	222.10	387.87	609.97
De-capitalization during 2023-24	328.73	88.14	416.87

73. We observe that the Petitioner has projected ACE at the fag end of the useful life of the equipment covered under the transmission system. The Petitioner has not placed any material(s) on record to show that the projected ACE towards “building and civil works” has the consent of beneficiaries/ Respondents. Also, during the hearing held on 31.3.2021, it was observed that the Petitioner has not obtained the consent of the beneficiaries for replacement of the residential buildings as pointed out by the Commission earlier. The “building and civil works” are of non-critical works in nature.

74. In view of the above, we are not inclined to allow ACE claimed by the Petitioner towards “building and civil works” under Regulation 25(2) of the 2019 Tariff Regulations. However, the Petitioner after obtaining approval of beneficiaries/ Respondents in RPC meetings may file a separate petition for ACE claim towards “building and civil works” for consideration by the Commission.

75. We observe that the remaining ACE projected by the Petitioner is towards replacement of various sub-station equipment like CBs, Isolators, ICT, Reactor and CB Protection Panel at Durgapur and Jeerat Sub-stations, Air Conditioning System of Jamshedpur and Biharshariff Sub-stations, FF System of Jamshedpur and Biharshariff



Sub-stations, old/obsolete electromechanical relays, Control and Power Cable of Durgapur and Jeerat Sub-stations along with Civil works at Jamshedpur and Biharshariff Sub-stations and the same have been allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The Petitioner is directed to submit the sub-station wise ACE/ de-capitalization details at the time of truing up.

76. ACE/ de-capitalization allowed in respect of the transmission system for the 2019-24 tariff period is as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
ACE	0.00	822.50	1550.35	1013.44	387.87
De-capitalization	0.00	362.47	528.82	286.69	88.14

77. Accordingly, the capital cost considered in respect of the transmission system for the 2019-24 tariff period is as follows:

Capital Cost allowed (as on 1.4.2019)	(₹ in lakh)								Capital Cost allowed (as on 31.3.2024)
	2020-21		2021-22		2022-23		2023-24		
		De-capitalization		De-capitalization		De-capitalization	ACE	De-capitalization	
33485.47	822.50	362.47	1550.35	528.82	1013.44	286.69	387.87	88.14	35993.51

Debt-Equity Ratio

78. 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.”

79. The debt-equity ratio for the 2019-24 tariff period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The de-capitalization of the 50 MVAr Line Reactor in the instant case is carried out in the debt-equity ratio of 50:50. The debt-equity considered for the purpose of computation of tariff for the 2019-24 tariff period is as follows:



Debt-Equity for Capital Cost as on 1.4.2019:

Funding	Capital Cost (as on 1.4.2019) (₹ in lakh) (A)	(in %)
Debt	18012.36	53.79
Equity	15473.11	46.21
Total	33485.47	100.00

Debt-Equity for ACE and de-capitalization during the 2014-19 period:

Funding	ACE (₹ in lakh) (B)	(in %)	De- capitalization (₹ in lakh) (C)	(in %)	ACE (₹ in lakh) (D)	(in %)	De- capitalization (₹ in lakh) (E)	(in %)
	2020-21				2021-22			
Debt	575.75	70.00	181.24	50.00	1085.25	70.00	264.41	50.00
Equity	246.75	30.00	181.24	50.00	465.11	30.00	264.41	50.00
Total	822.50	100.00	362.47	100.00	1550.35	100.00	528.82	100.00

As per Form 10B as submitted by the Petitioner

Funding	ACE (₹ in lakh) (F)	(in %)	De- capitalization (₹ in lakh) (G)	(in %)	ACE (₹ in lakh) (H)	(in %)	De- capitalization (₹ in lakh) (I)	(in %)
	2022-23				2023-24			
Debt	709.41	70.00	143.35	50.00	271.51	70.00	44.07	50.00
Equity	304.03	30.00	143.35	50.00	116.36	30.00	44.07	50.00
Total	1013.44	100.00	286.69	100.00	387.87	100.00	88.14	100.00

As per Form 10B as submitted by the Petitioner

Debt-Equity for Capital Cost as on 31.3.2024:

Funding	Total Capital Cost (as on 31.3.2024) (₹ in lakh) (J)=(A)+(B)-(C)+(D)-(E)+(F)-(G)+(H)-(I)	(in %)
Debt	20021.21	55.62
Equity	15972.30	44.38
Total	35993.51	100.00

Depreciation

80. Regulations 33(1), 33(2) and 33(5) of the 2019 Tariff Regulations provide as follows:

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



computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

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

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

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

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

81. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. COD of the transmission asset has been considered as 1.4.1992. Accordingly, the depreciation has been calculated based on the remaining depreciable value (upto 90% of existing gross block of assets) to be recovered over the balance useful life as per the 2019 Tariff Regulations. However, depreciation for ACE (new additions) allowed during fag end of the transmission system has been computed at normative rate of depreciation as specified in the 2019 Tariff Regulations:

Particulars (Existing Assets)	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	33485.47	33485.47	33123.00	32594.18	32307.49
ACE	0.00	0.00	0.00	0.00	0.00
De-capitalisation	0.00	362.47	528.82	286.69	88.14
Closing Gross Block	33485.47	33123.00	32594.18	32307.49	32219.35
Average Gross Block	33485.47	33304.24	32858.59	32450.84	32263.42
Freehold Land	619.85	619.85	619.85	619.85	619.85
Weighted average rate of Depreciation (WAROD) (in %)	1.82	1.93	2.01	1.82	2.15



Particulars (Existing Assets)	2019-20	2020-21	2021-22	2022-23	2023-24
Balance useful life of the asset (Year)	6	5	4	3	2
Lapsed Life of the asset (Year)	27	28	29	30	31
Depreciable Value	29579.06	29415.95	29014.87	28647.89	28479.21
Depreciation	607.78	642.39	661.10	591.65	694.91
Cumulative depreciation after de-capitalization adjustment	25932.35	26204.02	26370.46	26872.92	27089.40
Remaining Depreciable Value at the end of the year	3038.92	2569.54	1983.30	1183.31	694.91

(₹ in lakh)

Particulars (New Additions)	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Gross Block	0.00	0.00	822.50	2372.85	3386.29
ACE	0.00	822.50	1550.35	1013.44	387.87
Closing Gross Block	0.00	822.50	2372.85	3386.29	3774.16
Average Gross Block	0.00	411.25	1597.68	2879.57	3580.23
Weighted average rate of Depreciation (WAROD) (in %)	0.00	5.28	5.28	5.28	5.28
Depreciable Value (Excluding Freehold Land)	0.00	370.13	1437.91	2591.61	3222.20
Cumulative Depreciation at the beginning of the year	0.00	0.00	21.71	106.07	258.11
Depreciation	0.00	21.71	84.36	152.04	189.04
Cumulative Depreciation at the end of the year	0.00	21.71	106.07	258.11	447.15
Remaining Depreciation recoverable at the end of the year	0.00	348.41	1331.84	2333.50	2775.05

Interest on Loan

82. Regulation 32 of the 2019 Tariff Regulations provides as follows:

“32. Interest on loan capital: (1) *The loans arrived at in the manner indicated in regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

(2) *The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.*

(3) *The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered*



from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

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

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

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

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

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

83. The gross normative loan has already been repaid prior to 1.4.2019 and therefore, IoL has been considered on ACE (new additions). The weighted average rate of IoL has been considered on the basis of rates prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rates due to floating rate of interest applicable, if any, during the 2019-24 tariff period may be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of true up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed for the transmission system for the 2019-24 tariff period is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	18012.36	18012.36	18406.88	19227.71	19793.78
Cumulative Repayments up to Previous Year	18012.36	18012.36	17852.84	17672.79	17681.48
Net Loan-Opening	0.00	0.00	554.04	1554.92	2112.29
Additions	0.00	575.75	1085.25	709.41	271.51
De-capitalisation	0.00	181.24	264.41	143.35	44.07
Repayment during the year	0.00	21.71	84.36	152.04	189.04
Adjustment of Cumulative Repayment Pertaining to decapitalized asset	0.00	181.24	264.41	143.35	44.07
Net Loan-Closing	0.00	554.04	1554.92	2112.29	2194.76
Average Loan	0.00	277.02	1054.48	1833.61	2153.53



Weighted Average Rate of Interest on Loan (%)	8.0051	7.9715	8.1217	8.4078	8.3792
Interest on Loan	0.00	22.08	85.64	154.17	180.45

Return on Equity

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

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

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

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

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

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

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

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

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

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

“31. Tax on Return on Equity:(1) *The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year*



in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded for the calculation of effective tax rate.

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

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

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

Illustration-

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

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

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

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

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

85. The Petitioner has submitted that it is liable to pay Income Tax at MAT rate specified under the Taxation laws (Amendment) Ordinance 2019. In addition to above,



the Petitioner has replicated its submissions and prayer already made regarding RoE in numerous other petitions (already disposed by the Commission).

86. We have considered the submissions of the Petitioner and accordingly MAT rate applicable for 2019-20 has been considered for the purpose of grossing up RoE, which shall be trued-up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed for the transmission system under Regulation 30 of the 2019 Tariff Regulations is as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	15473.11	15473.11	15538.62	15739.32	15900.01
Additions	0.00	246.75	465.11	304.03	116.36
De-capitalisation	0.00	181.24	264.41	143.35	44.07
Closing Equity	15473.11	15538.62	15739.32	15900.01	15972.30
Average Equity	15473.11	15505.87	15638.97	15819.66	15936.15
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
Return on Equity	2906.16	2912.31	2937.31	2971.25	2993.13

Operation & Maintenance Expenses

87. The O&M Expenses claimed by the Petitioner for the various elements included in the transmission system for the 2019-24 tariff period are as follows:

(₹ in lakh)					
Details	2019-20	2020-21	2021-22	2022-23	2023-24
17 Numbers 400 kV sub-station Bays	546.55	565.76	585.65	606.22	627.47
947.00 kms S/C (Twin/Triple Conductor)	476.34	493.40	510.42	528.43	547.37
296.00 kms D/C (Twin/Triple Conductor)	260.78	269.95	279.42	289.20	299.26
04 Numbers 315 MVA 400 kV ICT	451.08	467.46	483.84	501.48	517.86
Total	1734.75	1796.57	1859.33	1925.33	1991.96

88. Regulation 35(3)(a) of the 2019 Tariff Regulations provides as follows:

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



Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (₹ Lakh per bay)					
765 kV	45.01	46.60	48.23	49.93	51.68
400 kV	32.15	33.28	34.45	35.66	36.91
220 kV	22.51	23.30	24.12	24.96	25.84
132 kV and below	16.08	16.64	17.23	17.83	18.46
Norms for Transformers (₹ Lakh per MVA)					
765 kV	0.491	0.508	0.526	0.545	0.564
400 kV	0.358	0.371	0.384	0.398	0.411
220 kV	0.245	0.254	0.263	0.272	0.282
132 kV and below	0.245	0.254	0.263	0.272	0.282
Norms for AC and HVDC lines (₹ Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.881	0.912	0.944	0.977	1.011
Single Circuit (Bundled conductor with four sub-conductors)	0.755	0.781	0.809	0.837	0.867
Single Circuit (Twin & Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Single Circuit (Single Conductor)	0.252	0.260	0.270	0.279	0.289
Double Circuit (Bundled conductor with four or more sub-conductors)	1.322	1.368	1.416	1.466	1.517
Double Circuit (Twin & Triple Conductor)	0.881	0.912	0.944	0.977	1.011
Double Circuit (Single Conductor)	0.377	0.391	0.404	0.419	0.433
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.319	2.401	2.485	2.572	2.662
Multi Circuit (Twin & Triple Conductor)	1.544	1.598	1.654	1.713	1.773
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)	1,666	1,725	1,785	1,848	1,913
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	2,252	2,331	2,413	2,498	2,586
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	2,468	2,555	2,645	2,738	2,834
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	1,696	1,756	1,817	1,881	1,947
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	2,563	2,653	2,746	2,842	2,942

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

Provided further that:

i. the operation and maintenance expenses for new HVDC bi-pole schemes



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

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

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

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

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

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

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

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

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

89. We have considered the submissions of the Petitioner. The O&M Expenses have been worked out as per the norms specified in the 2019 Tariff Regulations and are allowed in respect of the various elements included in the transmission system for the 2019-24 tariff period as follows:

	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
17 Numbers of 400 kV sub-station bays					
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
Total	546.55	565.76	585.65	606.22	627.47



	2019-20	2020-21	2021-22	2022-23	2023-24
947.00 kms S/C (Twin/Triple Conductor)					
Norms (₹ lakh/km)	0.503	0.521	0.539	0.558	0.578
Total	476.34	493.39	510.43	528.43	547.37
296.00 km D/C (Twin/Triple Conductor)					
Norms (₹ lakh/km)	0.881	0.912	0.944	0.977	1.011
Total	260.78	269.95	279.42	289.19	299.26
04 Numbers of 315 MVA ICT at 400 kV Durgapur, Jamshedpur and Biharshriff Sub-station					
Norms (₹ lakh/MVA)	0.358	0.371	0.384	0.398	0.411
Total	451.08	467.46	483.84	501.48	517.86
Total O&M Expenses allowed (₹ in lakh)	1734.75	1796.56	1859.35	1925.32	1991.95

Interest on Working Capital

90. Regulations 34(1)(c), 34(3), 34(4) and 3(7) of the 2019 Tariff Regulations provide as follows:

“34. Interest on Working Capital

(1) The working capital shall cover:

...

(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;"

91. The Petitioner has submitted that it has computed IWC for the 2019-24 tariff period considering the SBI Base Rate plus 350 basis points as on 1.4.2019.

92. We have considered the submissions of the Petitioner regarding IWC. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations and the components of the working capital and interest allowed thereon are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for 1 month)	144.56	149.71	154.95	160.44	166.00
Working Capital for Maintenance Spares (15% of O&M Expenses)	260.21	269.48	278.90	288.80	298.79
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	661.12	680.39	708.62	729.64	759.59
Total Working Capital	1065.90	1099.59	1142.47	1178.88	1224.38
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest on Working Capital	128.44	123.70	119.96	123.78	128.56

Annual Fixed Charges of the 2019-24 Tariff Period

93. The transmission charges allowed for the transmission system for the 2019-24 tariff period are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	607.78	664.10	745.46	743.70	883.94
Interest on Loan	0.00	22.08	85.64	154.17	180.45
Return on Equity	2906.16	2912.31	2937.31	2971.25	2993.13
O&M Expenses	1734.75	1796.56	1859.35	1925.32	1991.95
Interest on Working Capital	128.44	123.70	119.96	123.78	128.56
Total	5377.13	5518.76	5747.72	5918.21	6178.03

Filing Fee and the Publication Expenses

94. The Petitioner has prayed for reimbursement of filing fee and publication expenses.



95. We have considered the prayer of the Petitioner regarding filing fee and publication expenses. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present Petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

License Fee & RLDC Fees and Charges

96. The Petitioner has prayed for reimbursement of License fees & RLDC fees and charges.

97. We have considered the prayer of the Petitioner regarding License fees & RLDC fees and charges. The Petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 70 (4) of the 2019 Tariff Regulations for the 2019-24 tariff period. The Petitioner shall also be entitled for recovery of RLDC fee and charges in accordance with Regulation 70(3) of the 2019 Tariff Regulations for the 2019-24 tariff period.

Goods and Services Tax

98. The Petitioner has submitted that, if GST is levied at any rate and at any point of time in future on charges of transmission of electricity, the same shall be borne and additionally paid by the Respondent(s) to the Petitioner and the same shall be charged and billed separately by the Petitioner. Further additional taxes, if any, are to be paid by the Petitioner on account of demand from Government/ Statutory authorities, the same may be allowed to be recovered from the beneficiaries

99. We have considered the submissions and prayer of the Petitioner regarding GST and observe that since GST is not levied on transmission services at present, Petitioner's instant prayer is premature.



Security Expenses

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

101. We have considered the submissions and prayer of the Petitioner regarding security expenses and observe that 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. accordingly, 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

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

Sharing of Transmission Charges

103. During the tariff periods 2001-04, 2004-09 and 2009-14 (upto to 30.6.2011), the transmission charges for inter-State transmission systems were being shared in accordance with the Tariff Regulations for the respective tariff periods. With effect from 1.7.2011, sharing of transmission charges for inter-state transmission systems



was governed by the provisions of the 2010 Sharing Regulations. With effect from 1.11.2020, sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the liabilities of the DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and shall be recovered from the concerned DICs through Bills under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection and disbursement of the 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.

104. To summarise:

- a) The revised AFC approved in respect of the transmission system as per the APTEL's judgments for the 2001-04 and 2004-09 tariff periods are as follows:

(₹ in lakh)							
2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
4779.76	4615.09	4690.21	4069.09	4088.68	4110.76	3766.64	3805.78

- b) The consequential revision of AFC approved in respect of the transmission system for the 2009-14 tariff period are as follows:

(₹ in lakh)				
2009-10	2010-11	2012-13	2013-14	2014-15
4972.84	5164.31	5257.55	5352.65	5525.62

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

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
5373.72	5471.32	5550.03	5623.14	5692.13

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



(₹ in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
5377.13	5518.76	5747.72	5918.21	6178.03

105. This order disposes of Petition No. 323/TT/2020 in terms of the above discussions and findings.

sd/-
(P. K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I. S. Jha)
Member

sd/-
(P. K. Pujari)
Chairperson

