

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 479/TT/2020

Coram:

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

Date of order: 06.03.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and revision of transmission tariff of 2001-04, 2004-09 and 2009-14 tariff periods and truing up of transmission tariff of 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2019 for **Asset-1:** 400 kV Jeypore-Gazuwaka transmission line along with associated bays; and **Asset-2:** 500 MW HVDC back to back stations at Gazuwaka under "Gazuwaka HVDC back to back project" in Southern Region.

And in the Matter of:

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

.....Petitioner

Versus

1. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan,
Bangalore – 560 009.
2. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha,
Hyderabad – 500 082.
3. Kerala State Electricity Board,
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram – 695 004.
4. Tamil Nadu Generation and Distribution Corporation Limited,
(Formerly Tamilnadu Electricity Board -TNEB),
NPKRR Maaligai, 800, Anna Salai,
Chennai – 600 002.



5. Electricity Department,
Government of Pondicherry,
Pondicherry – 605001.
6. Eastern Power Distribution Company of Andhra Pradesh Limited,
P&T Colony, Seethmmadhara,
Vishakhapatnam, Andhra Pradesh.
7. Southern Power Distribution Company of Andhra Pradesh Limited,
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta,
Tirupati – 517 501.
8. Southern Power Distribution Company of Telanagana Limited,
Corporate Office, Mint Compound,
Hyderabad – 500 063, Telangana.
9. Northern Power Distribution Company of Telanagana Limited,
Opp. NIT Petrol Pump, Chaitanyapuri, Kazipet,
Warangal – 506 004, Telangana.
10. Bangalore Electricity Supply Company Limited,
Corporate Office, K.R.Circle,
Bangalore – 560 001, Karanataka.
11. Gulbarga Electricity Supply Company Limited,
Station Main Road,
Gulburga, Karnataka.
12. Hubli Electricity Supply Company Limited,
Navanagar, PB Road,
Hubli, Karnataka.
13. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore – 575 001, Karnataka.
14. Chamundeswari Electricity Supply Corporation Limited,
927, L J Avenue,
Ground Floor, New Kantharaj Urs Road, Saraswatipuram,
Mysore – 570 009, Karnataka.
15. Electricity Department,
Government of Goa,
Vidyuti Bhawan,
Panaji, Goa – 403 001.
16. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad – 500 082.



17. Tamil Nadu Transmission Corporation,
NPKRR Maaligai, 800, Anna Salai,
Chennai – 600 002.
18. Bihar State Electricity Board,
Vidyut Bhawan, Bailey Road,
Patna – 800 001.
19. West Bengal State Electricity Distribution Company,
Bidyut Bhawan, Bidhan Nagar,
Block Dj, Sector- II, Salt Lake City,
Calcutta –700 091.
20. Grid Corporation of Orrisa Limited,
Shahid Nagar,
Bhubaneswar –751 007.
21. Damodar Valley Corporation,
DVC Tower, Maniktala,
Civic Centre, VIP Road,
Calcutta –700 054.
22. Power Department,
Government of Sikkim,
Gangtok –737 101.
23. Jharkhand State Electricity Board,
In front of Main Secretariat, Doranda,
Ranchi – 834 002.

.....Respondent(s)

For Petitioner: Ms. Swapna Seshadri, Advocate, PGCIL
Shri Aditya H. Dubey, Advocate, PGCIL
Shri S.S. Raju, PGCIL
Shri D.K. Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Shri A.K. Verma, PGCIL

For Respondents: Shri S. Vallinayagam, Advocate, TANGEDCO

ORDER

The instant petition has been filed by the Petitioner, Power Grid Corporation of India Limited, a deemed transmission licensee, for revision of transmission tariff of 2001-04, 2004-09 and 2009-14 tariff periods; trueing up of transmission tariff of 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 of 2019-2024 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) in respect of the following assets (hereinafter referred to as “the transmission assets”) under “Gazuwaka HVDC back to back Project” (hereinafter referred to as “the transmission project”) in Southern Region:

Asset-1: 400 kV Jeypore-Gazuwaka transmission line along with associated bays; and

Asset-2: 500 MW HVDC back to back stations at Gazuwaka

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

“1) Approve the revised Transmission Tariff for 2001-04 block, 2004-09 block and transmission tariff for 2009-14 block for the assets covered under this petition, as per para 8 above.

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

3) A. Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2014 and Tariff regulations 2019 as per para 9 and 10 above for respective block.

B. Further it is submitted that deferred tax liability before 01.04.2009 shall be recoverable from the beneficiaries or long-term customers / DIC as the case may be, as and when the same is materialized as per regulation 49 of 2014 and regulation 67 of 2019 tariff regulation. The petitioner may be allow to recover the deferred tax liability materialised directly without making any application before the commission as provided in the regulation.

4) 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.

5) 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.

6) Allow the petitioner to recover FERV on the foreign loans deployed as provided under clause 68 of the 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”

Backdrop of the case

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

(a) Ministry of Power accorded its approval (Investment Approval) for the transmission project vide letter dated 21.2.1995 at an estimated cost of ₹65998.00 lakh, including an IDC of ₹10959.00 lakh.

(b) The scope of work covered under the transmission project is as follows:

- i. 1 X 500 MW HVDC back-to-back at Gazuwaka (Vizag),
- ii. 400 kV D/C transmission line between Jeypore (Orissa) and Gazuwaka (Andhra Pradesh), and
- iii. Extension of associated Sub-stations/terminal bays

(c) The complete scope of work as per Investment Approval is covered in the instant petition.

(d) The transmission assets were put into commercial operation (COD) on 1.9.1999.



(e) Transmission tariff for the period from 1.4.2001 to 31.3.2004 in respect of the transmission assets was approved vide order dated 18.7.2003 in Petition No. 51/2002 and the same was revised vide order dated 10.9.2004 in Petition No. 51/2002 on account of inadvertent error in calculation of Interest on Loan (IoL). Transmission tariff in respect of the transmission assets was further revised vide order dated 8.2.2008 in Petition No. 51/ 2002 on account of FERV adjustments.

(f) Transmission tariff in respect of the transmission assets for the period from 1.4.2004 to 31.3.2009 was approved vide order dated 16.2.2006 in Petition No. 70/2004 which was revised vide order dated 7.6.2006 in Petition No. 70/2004 on account of inadvertent error in calculation of IWC. Transmission tariff was again revised vide order dated 9.4.2008 in Petition No. 70/2004 on account of FERV adjustments.

(g) The Commission vide order dated 20.7.2010 in Petition No. 35/2010 allowed revision of tariff from 1.4.2007 to 31.3.2008 on account of de-capitalization.

(h) Transmission tariff in respect of the transmission assets for 2009-14 period was allowed vide order dated 10.5.2011 in Petition No. 297/2010. Transmission tariff in respect of the transmission assets for 2009-14 period was trued up and tariff for the period from 1.4.2014 to 31.3.2019 was determined vide order dated 9.11.2015 in Petition No. 141/TT/2014.

(i) The Commission vide order dated 10.5.2011 in Petition No. 297/2010 allowed separate tariff calculations for HVDC and AC lines.

(j) Nomenclature of the transmission assets during 2009-14, 2014-19 and 2019-24 tariff periods is as follows:

Assets	Name of Asset	COD
Asset-1	400 kV Jeypore- Gazuwaka transmission line along with associated bays	1.9.1999
Asset-2	500 MW HVDC back to back stations at Gazuwaka	1.9.1999

(k) The Petitioner has sought revision of transmission tariff approved for 2001-04 and 2004-09 tariff periods on account of change in IoL and IWC to the



extent of revision in IoL and in Maintenance Spares in terms of the judgments of the Appellate Tribunal for Electricity (“the APTEL”) dated 22.1.2007 in Appeal No. 81 of 2005 and batch matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases. The Petitioner has also sought consequential revision of tariff allowed for 2009-14 tariff period, truing up of tariff of 2014-19 tariff period and determination of tariff of 2019-24 tariff period in respect of the transmission assets.

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

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 the APTEL.
2	Computation of interest on loan	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.
3(a)	O&M Expenses: Inadequate provision of employee costs as part of O&M Expenses due to variation in salary and wages	The Commission’s view upheld.
3(b)	O&M Expenses: Non-inclusion of incentives and ex-gratia payment to employees	The Commission’s view upheld.
4	Cost of spares for calculation of working capital	The Commission’s view upheld.

(m) The APTEL in its judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases pertaining to generating stations of NTPC had considered 9 (nine) issues. The issues considered and decisions of the APTEL are as follows:



Sl. No.	Issue	APTEL's decisions/ directions
I	Computation of outstanding loan at the beginning of the tariff period i.e. 1.4.2004.	The Commission is required to recalculate the loan outstanding as on 31.3.2004 based on loan repayment on normative basis.
II	Consequence of refinance of loan	The Commission to consider the issue afresh.
III	Treating depreciation available as deemed repayment of loan	The Commission to make a fresh computation of outstanding loan.
IV	Admissibility of depreciation up to 90%	The Commission to consider the issue afresh.
V	Cost of Maintenance Spares	The Commission to consider the issue afresh.
VI	Impact of de-capitalisation of the assets on cumulative repayment of Loan.	The cumulative repayment of the loan proportionate to the assets decapitalized required to be reduced. Commission to act accordingly.
VII	Non-consideration of normative transit loss for coal import.	The Commission to consider afresh the transit losses for coal imported from coal mines other than the dedicated ones.
VIII	Foreign Exchange rate variation (FERV)	FERV has been kept as pass through to ensure that any liability or gain, if any, arising on account of any variation in foreign exchange rates is passed on to the beneficiary as held in order dated 4.10.2006 in Appeal No.135 to 140 of 2005. The Commission to act accordingly.
IX	Computation of interest on loan in Singrauli Station	Net loan closing at the end of a year is reflected as net loan opening on the first day of the next year. Commission shall re-compute the interest accordingly.

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



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

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

(r) The instant petition was heard on 10.9.2021 and in view of the APTEL's judgments dated 22.1.2007 and 13.6.2007 and the order of 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 transmission utilities, distribution licensees and power departments, which are procuring transmission services from the Petitioner, mainly beneficiaries of the Southern and 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. TANGEDCO, Respondent No. 4, has filed its reply vide affidavit dated 7.9.2021 and has raised issues with respect to retrospective tariff and sharing of transmission charges. The Petitioner vide affidavit dated 8.9.2021 has filed rejoinder to the reply of TANGEDCO. The issues raised by TANGEDCO and clarifications given by the Petitioner are dealt in the relevant portions of this order.



Re: Interest on Loan (“IoL”)

6. The APTEL while dealing with the issue of computation of IoL, in judgment dated 22.1.2007, observed that IoL for the period from 1.4.1998 to 31.3.2001 shall be computed only on normative loan repayment as per its judgment dated 14.11.2006 in Appeal No. 94 and Appeal No. 96 of 2005. The APTEL vide its judgment dated 14.11.2006 had set aside the Commission’s methodology of computation of loan on the actual repayment basis or normative repayment whichever is higher and held that the Commission is required to adopt normative debt repayment methodology for working out IoL liability order for the period 1.4.1998 to 31.3.2001. In view of above, interest allowed for 2001-04 and 2004-09 tariff periods is revised on the basis of the normative debt repayment methodology.

Re: Additional Capital Expenditure (“ACE”)

7. The APTEL vide judgment dated 13.6.2007 in Appeal No. 139 of 2006 and batch matters held that ACE after COD should also be considered for computation of maintenance spares. In view of the above, the maintenance spares to be considered for computation of working capital for 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 its judgement dated 13.6.2007 in Appeal No.139 of 2006 and batch cases observed that depreciation is an expense and it cannot be deployed for deemed repayment of loan and accordingly directed the Commission to compute the outstanding loan afresh. In view of above directions of the APTEL, the outstanding loan allowed in respect of the transmission assets for 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 necessitate the revision of transmission tariff allowed for 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 of 2005 and batch matters and dated 13.6.2007 in Appeal No. 139 of 2006 and batch cases in the case of the Petitioner was kept pending 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 beneficiaries should not be burdened with the carrying cost for the difference in the tariff allowed earlier and allowed in the instant order for 2001-04, 2004-09 and 2009-14 tariff periods. Therefore, we direct that the Petitioner will neither claim nor pay any carrying cost from or to the beneficiaries for the difference, if any, in the tariff allowed earlier and the tariff being allowed in the instant order. Further, the said difference in tariff shall be recovered/ paid over a period of six months from the date of issue of this order.

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

11. Having heard the representatives of the Petitioner and learned counsel for TANGEDCO and having perused the material on record, we proceed to dispose of the petition.

12. This order is issued considering the submissions made by the Petitioner in the petition vide affidavits dated 16.12.2019 and 8.9.2021, TANGEDCO's reply filed vide affidavit dated 7.9.2021 and the Petitioner's rejoinder to TANGEDCO's reply filed vide affidavit dated 8.9.2021.

13. It has been placed before us that TANGEDCO has been raising the same issue of retrospective revision of tariff in other petitions as well despite clear findings of the



Commission. The contentions of TANGEDCO on retrospective revision of tariff have been rejected by the Commission in various petitions including vide order dated 8.11.2021 in Petition No. 141/TT/2020. As TANGEDCO did not challenge the findings of the Commission, the same have attained finality. Accordingly, the issue of retrospective revision of tariff raised by TANGEDCO is rejected. The issue of sharing of transmission charges is dealt with in the relevant paragraph of the instant order.

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

2001-04 Tariff Period

14. The Commission approved the transmission charges in respect of the transmission assets for 2001-04 period vide orders dated 18.7.2003, 10.9.2004 and 8.2.2008 in Petition No. 51/2002 are as follows:

Particulars	(₹ in lakh)		
	2001-02	2002-03	2003-04
Depreciation	2012.70	2012.70	2012.70
Return on Equity	1534.29	1534.29	1534.29
O&M Expenses	571.68	605.98	642.34
Advance against Depreciation	2443.55	1163.72	2443.55
Interest on Loan	3999.62	3170.28	2795.18
Interest on Working Capital	281.91	245.89	269.08
Total	10843.75	8732.86	9697.14

15. The Petitioner has claimed the following revised transmission charges in respect of the transmission assets for 2001-04 period in this petition:

Particulars	(₹ in lakh)		
	2001-02	2002-03	2003-04
Depreciation	2012.70	2012.70	2012.70
Return on Equity	1534.29	1534.29	1534.29
O&M Expenses	571.68	605.98	642.34
Advance against Depreciation	2443.55	1238.22	2445.15
Interest on Loan	3989.98	3155.90	2773.78
Interest on Working Capital	283.09	248.55	270.28
Total	10835.29	8795.64	9678.55

16. We have considered the Petitioner's claim. The tariff is allowed in respect of the transmission assets on the basis of following:



- a) Admitted capital cost of ₹63064.34 lakh as on 1.4.2001;
- b) Weighted Average Rate of Interest (WAROI) on actual loan adopted from orders dated 18.7.2003 and 8.2.2008 in Petition No. 51 of 2002; and
- c) Weighted Average Rate of Depreciation, Rate of Interest for Working Capital and O&M Expenses as per order dated order dated 18.7.2003 and 8.2.2008 in Petition No. 51/2002.

17. In view of above, the revised transmission charges allowed in respect of the transmission assets for 2001-04 tariff period are as follows:

Particulars	(₹ in lakh)		
	2001-02	2002-03	2003-04
Depreciation	2012.70	2012.70	2012.70
Return on Equity	1534.29	1534.29	1534.29
O&M Expenses	571.68	605.98	642.34
Advance against Depreciation	2443.55	1237.23	2443.55
Interest on Loan	3989.98	3154.94	2772.26
Interest on Working Capital	283.09	248.52	270.22
Total	10835.29	8793.66	9675.37

18. The Annual Fixed Charges (AFC) allowed for 2001-04 tariff period vide order dated 8.2.2008 in Petition No. 51/2002, revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

Particulars	(₹ in lakh)		
	2001-02	2002-03	2003-04
AFC approved vide order dated 8.2.2008 in Petition No. 51 of 2002	10843.75	8732.86	9697.14
AFC claimed by the Petitioner in the instant petition	10835.29	8795.64	9678.55
AFC allowed in the instant order	10835.29	8793.66	9675.37

**In addition to this Return on Equity of ₹7.83 lakh in FY 2002-03 and ₹13.54 lakh in FY 2003-04 and IoL of ₹0.83 lakh in FY 2002-03 and ₹1.45 lakh in FY 2003-04 on account of Impact of Additional Capital Expenditure (ACE) for 2001-04 period shall be recovered from the Petitioner by the Respondents as per order dated 16.2.2006 in Petition No. 70 of 2004.*



2004-09 Tariff Period

19. The Commission approved the transmission charges in respect of the transmission assets for 2004-09 period vide order dated 9.4.2008 in Petition No. 70/2004 and vide order dated 20.7.2010 in Petition No. 35/2010 which are as follows:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	2085.46	2085.46	2085.46	2082.2	2078.95
Return on Equity	1357.05	1357.05	1357.05	1355.12	1353.19
O&M Expenses	690.4	718.09	747.06	776.43	807.94
Advance against Depreciation	3211.15	3262.73	3319.58	1841.39	0.00
Interest on Loan	2073.15	1699.75	1322.29	970.1	720.39
Interest on Working Capital	251.27	251.29	251.67	226.03	196.25
Total	9668.48	9374.37	9083.11	7251.27	5156.71

20. The Petitioner has claimed the following revised transmission charges in respect of the transmission assets for 2004-09 period in the instant petition:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	2085.46	2085.46	2085.46	2082.2	2078.95
Return on Equity	1357.05	1357.05	1357.05	1355.12	1353.19
O&M Expenses	690.40	718.09	747.06	776.43	807.94
Advance against Depreciation	3284.75	3337.04	3394.68	1895.91	0.00
Interest on Loan	2101.94	1723.38	1340.66	983.70	738.85
Interest on Working Capital	259.33	259.66	260.35	234.70	204.51
Total	9778.94	9480.68	9185.27	7328.06	5183.43

21. We have considered the Petitioner's claim. The tariff is allowed in respect of the transmission assets on the basis of following:

- a) Admitted capital cost of ₹65374.34 lakh as on 1.4.2004;
- b) Weighted Average Rate of Interest on actual loan adopted from order dated 9.4.2008 and 20.7.2010 in Petition No. 70/2004 and Petition No. 35/2010 respectively; and
- c) Weighted Average Rate of Depreciation, Rate of Interest for Working Capital and O&M Expenses as per orders dated 9.4.2008 and 20.7.2010 in Petition No. 70/2004 and Petition No. 35/2010 respectively.



22. In view of above, the revised transmission charges allowed in respect of the transmission assets for 2004-09 tariff period are as follows:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	2085.46	2085.46	2085.46	2082.20	2078.95
Return on Equity	1357.05	1357.05	1357.05	1355.12	1353.19
O&M Expenses	690.40	718.09	747.06	776.43	807.94
Advance against Depreciation	3282.01	3334.28	3391.89	1893.88	0.00
Interest on Loan	2100.87	1722.50	1339.98	983.20	738.46
Interest on Working Capital	259.27	259.60	260.29	234.66	204.50
Total	9775.07	9476.98	9181.74	7325.49	5183.04

23. AFC allowed for 2004-09 tariff period vide orders dated 9.4.2008 and 20.7.2010 in Petition No. 70/2004 and Petition No. 35/2010 respectively, revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
AFC approved vide orders dated 9.4.2008 in Petition No. 70 of 2004 and order dated 20.7.2010 in Petition No. and 35 of 2010	9668.48	9374.37	9083.11	7251.27	5156.71
AFC claimed by the Petitioner in the instant petition	9778.94	9480.68	9185.27	7328.06	5183.43
AFC allowed in the instant order	9775.07	9476.98	9181.74	7325.49	5183.04

2009-14 Tariff Period

24. The Commission vide order dated 10.5.2011 in Petition No. 297/2010 approved separate tariff calculations for HVDC and AC lines for 2009-14 period and subsequently vide order dated 9.11.2015 in Petition No. 141/TT/2014 trued up the tariff allowed for 2009-14 tariff period in respect of the transmission assets and the same is as follows:

(₹ in lakh)					
Asset-1					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1662.56	1662.56	1662.56	168.93	168.93
Return on Equity	876.97	909.09	909.99	909.99	920.93
O&M Expenses	399.94	422.86	447.07	472.62	499.56
Interest on Loan	213.67	85.82	16.73	0.00	0.00



Interest on Working Capital	77.39	76.54	76.33	46.13	47.70
Total	3230.52	3156.87	3112.67	1597.67	1637.12

(₹ in lakh)

Asset-2					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1755.42	1755.42	1755.42	291.28	291.28
Return on Equity	927.99	961.98	962.92	962.92	974.50
O&M Expenses	443.00	468.00	495.00	523.00	553.00
Interest on Loan	226.23	91.18	17.94	0.00	0.00
Interest on Working Capital	82.80	81.95	81.79	52.30	54.04
Total	3435.44	3358.53	3313.08	1829.51	1872.83

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

(₹ in lakh)

Asset-1					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1662.56	1662.56	1662.56	168.93	168.93
Return on Equity	876.97	909.09	909.99	909.99	920.93
O&M Expenses	399.94	422.86	447.07	472.62	499.56
Interest on Loan	224.59	95.56	21.59	0.00	0.00
Interest on Working Capital	77.62	76.74	76.43	46.13	47.70
Total	3241.67	3166.81	3117.64	1597.67	1637.12

(₹ in lakh)

Asset-2					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1755.42	1755.42	1755.42	291.28	291.28
Return on Equity	927.99	961.98	962.92	962.92	974.50
O&M Expenses	443.00	468.00	495.00	523.00	553.00
Interest on Loan	237.75	101.45	23.08	0.00	0.00
Interest on Working Capital	83.04	82.16	81.90	52.30	54.04
Total	3447.20	3369.01	3318.31	1829.50	1872.82

26. We have considered the Petitioner's claim. The tariff is allowed in respect of the transmission assets on the basis of following:

- a) Admitted capital cost of ₹31640.24 lakh and ₹33480.93 lakh for the transmission Asset -1 and Asset-2 as on 1.4.2009;
- b) Weighted Average Rate of Interest on actual loan derived/adopted from order dated 9.11.2015 in Petition No. 141/TT/2014, and



c) Weighted Average Rate of Depreciation as per order dated 9.11.2015 in Petition No. 141/TT/2014.

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

(₹ in lakh)

Asset-1					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1662.56	1662.56	1662.56	168.93	168.93
Return on Equity	876.97	909.09	909.99	909.99	920.93
O&M Expenses	399.94	422.86	447.07	472.62	499.56
Interest on Loan	224.42	95.41	21.52	0.00	0.00
Interest on Working Capital	77.61	76.74	76.43	46.13	47.48
Total	3241.50	3166.66	3117.57	1597.67	1625.96

(₹ in lakh)

Asset-2					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1755.42	1755.42	1755.42	291.28	291.28
Return on Equity	927.99	961.98	962.92	962.92	974.50
O&M Expenses	443.00	468.00	495.00	523.00	553.00
Interest on Loan	237.61	101.33	23.01	0.00	0.00
Interest on Working Capital	83.04	82.16	81.90	52.30	54.04
Total	3447.06	3368.88	3318.26	1829.51	1872.83

28. AFC allowed for 2009-14 tariff period vide order dated 9.11.2015 in Petition No. 141/TT/2014, revised AFC claimed in the instant petition and AFC allowed in the instant order are as follows:

(₹ in lakh)

Asset	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Asset-1	AFC approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	3230.52	3156.87	3112.67	1597.67	1637.12
	AFC claimed by the Petitioner in the instant petition	3241.67	3166.81	3117.64	1597.67	1637.12
	AFC allowed in the instant order	3241.50	3166.66	3117.57	1597.67	1625.96
Asset-2	AFC approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	3435.44	3358.53	3313.08	1829.51	1872.83
	AFC claimed by the Petitioner in the instant	3447.20	3369.01	3318.31	1829.50	1872.82



petition						
AFC allowed in the instant order	3447.06	3368.88	3318.26	1829.51	1872.83	

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

29. The details of the trued-up transmission charges claimed by the Petitioner in respect of the transmission assets are as follows:

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	163.42	163.43	163.42	163.43	163.41
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	919.45	923.66	923.20	923.20	925.68
Interest on Working Capital	50.18	51.12	51.97	52.86	53.84
O&M Expenses	457.04	472.32	487.95	504.15	520.87
Total	1590.09	1610.53	1626.54	1643.64	1663.80

(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	281.21	281.22	281.21	281.22	281.20
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	973.66	978.12	977.63	977.63	980.26
Interest on Working Capital	60.82	63.62	66.49	69.63	73.07
O&M Expenses	578.00	627.00	679.00	736.00	797.00
Total	1893.69	1949.96	2004.33	2064.48	2131.53

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

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses	38.09	39.36	40.66	42.01	43.41
Maintenance Spares	68.56	70.85	73.19	75.62	78.13
Receivables	265.02	268.42	271.09	273.94	277.30
Total	371.67	378.63	384.94	391.57	398.84
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	50.18	51.12	51.97	52.86	53.84



(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses	48.17	52.25	56.58	61.33	66.42
Maintenance Spares	86.70	94.05	101.85	110.40	119.55
Receivables	315.62	324.99	334.06	344.08	355.26
Total	450.49	471.29	492.49	515.81	541.23
Rate of Interest (in %)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	60.82	63.62	66.49	69.63	73.07

Capital Cost as on 1.4.2014

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

32. The Commission vide order dated 9.11.2015 in Petition No. 141/TT/2014 approved the transmission tariff of the transmission assets for 2014-19 period based on admitted capital cost of ₹31640.24 lakh for Asset-1 and ₹ 33480.93 for Asset-2 as on 31.3.2014. Therefore, total admitted capital cost of ₹ 65121.17 lakh as on 31.3.2014 has been considered for working out the trued up tariff for 2014-19 tariff period.

Additional Capital Expenditure (“ACE”)

33. The Petitioner has not claimed any ACE during 2014-19 period.

Capital Cost considered for true up of tariff of 2014-19 tariff period

34. The capital cost considered in respect of the transmission assets for trueing up of tariff for 2014-19 tariff period is as follows:

(₹ in lakh)			
Particulars	Capital Cost as on 1.4.2014	ACE during 2014-19 Period	Capital Cost as on 31.3.2019
Asset-1	31640.24	0.00	31640.24
Asset-2	33480.93	0.00	33480.93

Debt-Equity Ratio

35. As per Regulation 19(3) of the 2014 Tariff Regulations, debt-equity ratio allowed by the Commission for determination of tariff for the period ending on



31.3.2014 shall be considered. Accordingly, the admitted debt-equity ratio of 85.16:14.84 for the period ending on 31.3.2014 has been considered as opening debt-equity ratio as on 1.4.2014 for the purpose of truing up of tariff of 2014-19 tariff period in respect of the transmission assets. The details of debt-equity ratio allowed in respect of the transmission assets as on 1.4.2014 and 31.3.2019 are as follows:

Asset- 1	As on 1.4.2014		As on 31.3.2019	
	Amount (₹ in lakh)	(in %)	Amount (₹ in lakh)	(in %)
Debt	26944.03	85.16	26944.03	85.16
Equity	4696.21	14.84	4696.21	14.84
Total	31640.24	100.00	31640.24	100.00
Asset-2	As on 1.4.2014		As on 31.3.2019	
	Amount (₹ in lakh)	(in %)	Amount (₹ in lakh)	(in %)
Debt	28511.51	85.16	28511.51	85.16
Equity	4969.42	14.84	4969.42	14.84
Total	33480.93	100.00	33480.93	100.00

Depreciation

36. Depreciation has been worked out as per the methodology provided in Regulation 27 of the 2014 Tariff Regulations. The transmission assets have already completed 12 years of useful life as on 31.3.2014. The remaining depreciable value of ₹3111.34 lakh and ₹3099.96 lakh in respect of Asset-1 and Asset-2 respectively has been spread over the balance useful life of 19 years and 11 years respectively. Accordingly, depreciation allowed for 2014-19 tariff period in respect of the transmission assets is as follows:

(₹ in lakh)						
Asset-1						
	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Gross Block	31640.24	31640.24	31640.24	31640.24	31640.24
B	ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Gross Block (A+B)	31640.24	31640.24	31640.24	31640.24	31640.24
D	Average Gross Block [(A+C)/2]	31640.24	31640.24	31640.24	31640.24	31640.24
E	Average Gross Block	31618.10	31618.10	31618.10	31618.10	31618.10



	(90% depreciable assets)					
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	0.00	0.00	0.00	0.00	0.00
H	Depreciable value of IT equipment and software	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	28456.29	28456.29	28456.29	28456.29	28456.29
J	Rate of Depreciation (in %)	0.52	0.52	0.52	0.52	0.52
K	Lapsed Life (Year)	14.00	15.00	16.00	17.00	18.00
L	Balance useful life at the beginning of the year (Year)	19.00	18.00	17.00	16.00	15.00
M	Depreciation during the year (D*J)	163.75	163.75	163.75	163.75	163.75
N	Cumulative depreciation at the end of year	25508.71	25672.46	25836.22	25999.97	26163.73
O	Remaining Depreciable Value	2947.58	2783.83	2620.07	2456.32	2292.56

(₹ in lakh)

Asset-2						
	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Gross Block	33480.93	33480.93	33480.93	33480.93	33480.93
B	ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Gross Block (A+B)	33480.93	33480.93	33480.93	33480.93	33480.93
D	Average Gross Block [(A+C)/2]	33480.93	33480.93	33480.93	33480.93	33480.93
E	Average Gross Block (90% depreciable assets)	33480.93	33480.93	33480.93	33480.93	33480.93
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	30132.84	30132.84	30132.84	30132.84	30132.84
H	Depreciable value of IT equipment and software	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	30132.84	30132.84	30132.84	30132.84	30132.84
J	Rate of Depreciation (in %)	0.84	0.84	0.84	0.84	0.84
K	Lapsed Life (Year)	14.00	15.00	16.00	17.00	18.00
L	Balance useful life at the beginning of the year (Year)	11.00	10.00	9.00	8.00	7.00
M	Depreciation during the year (D*J)	281.81	281.81	281.81	281.81	281.81
N	Cumulative depreciation at the end of year	27314.69	27596.50	27878.32	28160.13	28441.95
O	Remaining Depreciable Value	2818.15	2536.33	2254.52	1972.70	1690.89



37. The details of depreciation approved vide order dated 9.11.2015 in Petition No. 141/TT/2014, as claimed by the Petitioner in the instant petition and trued up depreciation in respect of the transmission assets is as follows:

(₹ in lakh)						
Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	168.93	168.93	168.93	168.93	168.93
	Claimed by the Petitioner in the instant petition	163.42	163.43	163.42	163.43	163.41
	Allowed in the instant order	163.75	163.75	163.75	163.75	163.75
Asset-2	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	291.28	291.28	291.28	291.28	291.28
	Claimed by the Petitioner in the instant petition	281.21	281.22	281.21	281.22	281.20
	Allowed in the instant order	281.81	281.81	281.81	281.81	281.81

Interest on Loan (“IoL”)

38. The Petitioner has not claimed any IoL in respect of the transmission assets for 2014-19 tariff period as entire loan has already been repaid. Accordingly, IoL has been considered as 'Nil' for the purpose of tariff.

Return on Equity (“RoE”)

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

Year	Claimed effective tax rate (in %)	Grossed up RoE (in %) [(Base Rate)/(1-t)]
2014-15	21.018	19.624
2015-16	21.382	19.716
2016-17	21.338	19.705
2017-18	21.337	19.704
2018-19	21.549	19.758



40. The Commission vide order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate for the Petitioner based on the notified MAT rates and the same 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

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

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

42. The details of trued up RoE allowed in respect of the transmission assets are as follows:

(₹ in lakh)					
Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	4696.21	4696.21	4696.21	4696.21	4696.21
Addition due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	4696.21	4696.21	4696.21	4696.21	4696.21
Average Equity	4696.21	4696.21	4696.21	4696.21	4696.21
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (in %)	20.961	21.342	21.342	21.342	21.549
Applicable RoE Rate (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity for the year	920.93	925.39	925.39	925.39	927.88



(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	4969.42	4969.42	4969.42	4969.42	4969.42
Addition due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	4969.42	4969.42	4969.42	4969.42	4969.42
Average Equity	4969.42	4969.42	4969.42	4969.42	4969.42
Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
Tax Rate applicable (in %)	20.961	21.342	21.342	21.342	21.549
Applicable RoE Rate (in %)	19.610	19.705	19.705	19.705	19.758
Return on Equity for the year	974.50	979.22	979.22	979.22	981.86

43. The details of RoE approved vide order dated 9.11.2015 in Petition No.141/TT/2014, as claimed in the instant petition and trued up in respect of the transmission assets are as follows:

Asset-2						
Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	920.03	920.03	920.03	920.03	920.03
	Claimed by the Petitioner in the instant petition	919.45	923.66	923.20	923.20	925.68
	Allowed after true up in the instant order	920.93	925.39	925.39	925.39	927.88
Asset-2	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	974.50	974.50	974.50	974.50	974.50
	Claimed by the Petitioner in the instant petition	973.66	978.12	977.63	977.63	980.26
	Allowed after true up in the instant order	974.50	979.22	979.22	979.22	981.86

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

44. O&M expenses as claimed by the Petitioner are as follows:

Asset- 1				
Transmission lines				
Sl. No.	Name of Line	Single Circuit / Double Circuit	Number of Sub- Conductors	Line Length km
1	400 kV D/C Jeypore-Gazuwaka T/L	Double Circuit	2	220
Sl. No.	400 kV Sub-station bay			
1	Gajuwaka/ Vishakhapatnam: Jeypore Bay I & Bay II			
2	Jeypore: Gazuwaka- I & II			
3	Jeypore: Bus Reactor Bay			

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O&M Expenses					
	2014-15	2015-16	2016-17	2017-18	2018-19
Sub-station					
400 kV					
Number of bays	4	4	4	4	4
Transmission lines					
D/C Twin/Triple Conductor (km)	0.71	0.73	0.76	0.78	0.81
Total O&M Expense (₹ in lakh)	457.04	472.32	487.95	504.15	520.87

(₹ in lakh)

Asset- 2					
HVDC Line					
Sl. No.	Name of Line				
1	Gazuwaka/ Vishakhapatnam: HVDC B/B Station at Gazuwaka				
O&M Expenses					
	2014-15	2015-16	2016-17	2017-18	2018-19
HVDC lines					
HVDC Back to Back	578.00	627.00	679.00	736.00	797.00
Total O&M Expense (₹ in lakh)	578.00	627.00	679.00	736.00	797.00

45. 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 assets are as follows:

Asset- 1						
Element	UoM	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
400 kV Sub-station	₹ lakh/bay	60.30	62.30	64.37	66.51	68.71
D/C Twin/Triple Conductor	₹ lakh/km	0.71	0.73	0.76	0.78	0.81

Asset- 2						
Element	UoM	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
HVDC Back to Back station at Gazuwaka	₹ lakh/ 500 MW	578.00	627.00	679.00	736.00	797.00

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



(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
4 Numbers of 400 kV Sub-station bays	301.50	311.50	321.85	332.55	343.55
220 km D/C Twin/Triple Conductor transmission line	155.54	160.82	166.10	171.60	177.32
Total	457.04	472.32	487.95	504.15	520.87

(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
HVDC Back to Back	578.00	627.00	679.00	736.00	797.00
Total	578.00	627.00	679.00	736.00	797.00

47. The details of O&M Expenses approved vide order dated 9.11.2015 in Petition No. 141/TT/2014, as claimed in the instant petition and trued up in respect of the transmission assets are as follows:

(₹ in lakh)

Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	457.04	472.32	487.95	504.15	520.87
	Claimed by the Petitioner in the instant petition	457.04	472.32	487.95	504.15	520.87
	Allowed after true up in the instant order	457.04	472.32	487.95	504.15	520.87
Asset-2	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	578.00	627.00	679.00	736.00	797.00
	Claimed by the Petitioner in the instant petition	578.00	627.00	679.00	736.00	797.00
	Allowed after true up in the instant order	578.00	627.00	679.00	736.00	797.00

Interest on Working Capital (“IWC”)

48. The Petitioner is entitled to IWC as per Regulation 28 of the 2014 Tariff Regulations.

49. IWC worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and allowed in respect of the transmission assets is as follows:



(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M Expenses (one month of O&M Expenses)	38.09	39.36	40.66	42.01	43.41
Working Capital for Maintenance Spares (15% of O&M Expenses)	68.56	70.85	73.19	75.62	78.13
Working Capital for Receivables (Equivalent to two months of annual fixed cost /annual transmission charges)	265.32	268.77	271.52	274.37	277.73
Total	371.97	378.98	385.37	392.00	399.27
Rate of Interest on working capital (in %)	13.50	13.50	13.50	13.50	13.50
Interest of Working Capital	50.22	51.16	52.03	52.92	53.90

(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O&M Expenses (One month of O&M Expenses)	48.17	52.25	56.58	61.33	66.42
Working Capital for Maintenance Spares (15% of O&M Expenses)	86.70	94.05	101.85	110.40	119.55
Working Capital for Receivables (Equivalent to two months of annual fixed cost/ annual transmission charges)	315.86	325.28	334.43	344.45	355.63
Total	450.73	471.58	492.86	516.19	541.60
Rate of Interest on working capital (in %)	13.50	13.50	13.50	13.50	13.50
Interest of Working Capital	60.85	63.66	66.54	69.69	73.12

50. The details of IWC approved vide order dated 9.11.2015 in Petition No. 141/TT/2014, as claimed in the instant petition and trued up IWC in respect of the transmission assets is as follows:

(₹ in lakh)

Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	50.33	51.18	52.04	52.94	53.86
	Claimed by the Petitioner in the instant petition	50.18	51.12	51.97	52.86	53.84
	Allowed after true up in the instant order	50.22	51.16	52.03	52.92	53.90
Asset-2	Approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	61.07	63.77	66.65	69.79	73.16

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	Claimed by the Petitioner in the instant petition	60.82	63.62	66.49	69.63	73.07
	Allowed after true up in the instant order	60.85	63.66	66.54	69.69	73.12

Approved Annual Fixed Charges for 2014-19 Tariff Period

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

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	163.75	163.75	163.75	163.75	163.75
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	920.93	925.39	925.39	925.39	927.88
O&M Expenses	457.04	472.32	487.95	504.15	520.87
Interest on Working Capital	50.22	51.16	52.03	52.92	53.90
Total	1591.94	1612.62	1629.12	1646.21	1666.40

(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	281.81	281.81	281.81	281.81	281.81
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	974.50	979.22	979.22	979.22	981.86
O&M Expenses	578.00	627.00	679.00	736.00	797.00
Interest on Working Capital	60.85	63.66	66.54	69.69	73.12
Total	1895.17	1951.70	2006.58	2066.72	2133.79

52. The details of AFC approved vide order dated 9.11.2015 in Petition No. 141/TT/2014, AFC as claimed in the instant petition and as trued up AFC in respect of the transmission assets are as follows:

(₹ in lakh)

Asset	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-1	AFC approved vide order dated 9.11.2015 in Petition No. 141/TT/2014	1596.33	1612.46	1628.95	1646.05	1663.69
	AFC claimed by the Petitioner in the instant petition	1590.09	1610.53	1626.54	1643.64	1663.80
	AFC allowed after true up in the instant order	1591.94	1612.62	1629.12	1646.21	1666.40
Asset-2	AFC approved vide order dated 9.11.2015 in	1904.85	1956.55	2011.43	2071.58	2135.95



Petition No. 141/TT/2014						
AFC claimed by the Petitioner in the instant petition	1893.69	1949.96	2004.33	2064.48	2131.53	
AFC allowed after true up in the instant order	1895.17	1951.70	2006.58	2066.72	2133.79	

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

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

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	163.43	163.41	163.44	163.41	163.44
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	879.95	879.95	879.95	879.95	879.95
Interest on Working Capital	31.25	31.85	32.41	32.99	33.53
O&M Expenses	356.98	369.45	382.34	395.65	409.38
Total	1431.61	1444.66	1458.14	1472.00	1486.30

(₹ in lakh)

Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	281.22	281.20	281.22	281.20	281.22
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	931.83	931.83	931.83	931.83	931.83
Interest on Working Capital	90.84	93.54	96.16	98.90	101.61
O&M Expenses	1666.00	1725.00	1785.00	1848.00	1913.00
Total	2969.89	3031.57	3094.21	3159.93	3227.66

54. The Petitioner has claimed the following IWC for 2019-24 period in respect of the transmission assets:

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	29.75	30.79	31.86	32.97	34.12
Maintenance Spares	53.55	55.42	57.35	59.35	61.41
Receivables	176.02	178.11	179.77	181.48	182.74
Total	259.32	264.32	268.98	273.80	278.27
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	31.25	31.85	32.41	32.99	33.53



Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	138.83	143.75	148.75	154.00	159.42
Maintenance Spares	249.90	258.75	267.75	277.20	286.95
Receivables	365.15	373.76	381.48	389.58	396.84
Total	753.88	776.26	797.98	820.78	843.21
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	90.84	93.54	96.16	98.90	101.61

Capital Cost

55. 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.*

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

- (a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*
- (d) *Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*
- (e) *Capitalised Initial Spares subject to the ceiling rates in accordance with these regulations;*
- (f) *Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*
- (g) *Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*
- (h) *Adjustment of revenue earned by the transmission licensee by using the Asset-before the date of commercial operation;*
- (i) *Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
- (j) *Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal 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.
- (2) 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.”
- (3) 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.
- (4) The following shall be excluded from the capital cost of the existing and new projects:
- (a) The Asset-forming part of the project, but not in use, as declared in the tariff petition;
- (b) De-capitalised Asset-after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:
- Provided that in case replacement of transmission Asset-is recommended by Regional Power Committee, such Asset-shall be decapitalised only after its redeployment;
- Provided further that unless shifting of an Asset-from one project to another is of permanent nature, there shall be no de-capitalization of the concerned asset.
- (c) In case of hydro generating stations, any expenditure incurred or



- committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;*
- (d) *Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and*
- (e) *Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.”*

56. The Petitioner has claimed capital cost of ₹31640.24 lakh for Asset-1 and ₹33480.93 lakh for Asset-2 as on 31.3.2019 lakh which is same as worked out by the Commission. Accordingly, capital cost of ₹31640.24 lakh for Asset-1 and ₹33480.93 lakh for Asset-2 in has been considered as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations.

Additional Capital Expenditure (“ACE”)

57. The Petitioner has not claimed any ACE in respect of the transmission assets in 2019-24 tariff period.

Debt-Equity Ratio

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

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

Provided that:

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

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

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of



the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

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

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

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

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

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

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

59. The details of debt-equity considered for the purpose of tariff in respect of the transmission assets for 2019-24 tariff period are as follows:

(₹ in lakh)				
Asset-1	Capital Cost (as on 1.4.2019) (₹ in lakh)	(in %)	Capital Cost (as on 31.3.2024) (₹ in lakh)	(in %)
Debt	26944.03	85.16	26944.03	85.16
Equity	4696.21	14.84	4696.21	14.84
Total	31640.24	100.00	31640.24	100.00

(₹ in lakh)				
Asset- 2	Capital Cost (as on 1.4.2019) (₹ in lakh)	(in %)	Capital Cost (as on 31.3.2024) (₹ in lakh)	(in %)
Debt	28511.51	85.16	28511.51	85.16
Equity	4969.42	14.84	4969.42	14.84
Total	33480.93	100.00	33480.93	100.00



Depreciation

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

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

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

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

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

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) *Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

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

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



(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.

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

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

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

61. The transmission assets have already completed 12 years of useful life as on 31.3.2019. The remaining depreciable value of ₹2292.56 lakh with respect to Asset-1 and ₹1690.89 lakh with respect to Asset-2 has been spread over the balance useful life of 14 years in accordance with Regulation 33(5) of the 2019 Tariff Regulations. Depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. Depreciation worked out in respect of the transmission assets is as follows:



(₹ in lakh)

Asset-1						
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	31640.24	31640.24	31640.24	31640.24	31640.24
B	ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Gross Block (A+B)	31640.24	31640.24	31640.24	31640.24	31640.24
D	Average Gross Block [(A+C)/2]	31640.24	31640.24	31640.24	31640.24	31640.24
E	Average Gross Block (90% depreciable assets)	31618.10	31618.10	31618.10	31618.10	31618.10
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	28456.29	28456.29	28456.29	28456.29	28456.29
H	Depreciable value of IT equipment and software	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	28456.29	28456.29	28456.29	28456.29	28456.29
J	Rate of Depreciation (in %)	0.52	0.52	0.52	0.52	0.52
K	Lapsed Life (Year)	19.00	20.00	21.00	22.00	23.00
L	Balance useful life at the beginning of the year (Year)	14.00	13.00	12.00	11.00	10.00
M	Depreciation during the year (D*J)	163.75	163.75	163.75	163.75	163.75
N	Cumulative depreciation at the end of year	26327.48	26491.24	26654.99	26818.75	26982.50
O	Remaining Depreciable Value	2128.81	1965.05	1801.30	1637.54	1473.79

(₹ in lakh)

Asset-2						
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	33480.93	33480.93	33480.93	33480.93	33480.93
B	ACE	0.00	0.00	0.00	0.00	0.00
C	Closing Gross Block (A+B)	33480.93	33480.93	33480.93	33480.93	33480.93
D	Average Gross Block [(A+C)/2]	33480.93	33480.93	33480.93	33480.93	33480.93
E	Average Gross Block (90% depreciable assets)	33480.93	33480.93	33480.93	33480.93	33480.93
F	Average Gross Block (100% depreciable assets)	0.00	0.00	0.00	0.00	0.00
G	Depreciable value (excluding IT equipment and software) (E*90%)	30132.84	30132.84	30132.84	30132.84	30132.84
H	Depreciable value of IT equipment and software	0.00	0.00	0.00	0.00	0.00
I	Total Depreciable Value (G+H)	30132.84	30132.84	30132.84	30132.84	30132.84
J	Rate of Depreciation (in %)	0.84	0.84	0.84	0.84	0.84
K	Lapsed Life (Year)	19.00	20.00	21.00	22.00	23.00
L	Balance useful life at the	6.00	5.00	4.00	3.00	2.00



	beginning of the year (Year)					
M	Depreciation during the year (D*J)	281.81	281.81	281.81	281.81	281.81
N	Cumulative depreciation at the end of year	28723.76	29005.58	29287.39	29569.21	29851.02
O	Remaining Depreciable Value	1409.07	1127.26	845.44	563.63	281.81

Interest on Loan (“IoL”)

62. The Petitioner has not claimed any IoL in respect of the transmission assets for 2019-24 tariff period as the entire loan has already been repaid during 2009-14. Accordingly, IoL with respect to the transmission assets has been considered as ‘Nil’ for the purpose of tariff.

Return on Equity (“RoE”)

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

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

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

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

Provided further that:

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

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



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

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

- a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;
- b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:

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

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

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

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

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

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

(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.”



64. RoE considered in respect of the transmission assets under Regulation 30 of the 2019 Tariff Regulations as follows:

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	4696.21	4696.21	4696.21	4696.21	4696.21
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	4696.21	4696.21	4696.21	4696.21	4696.21
Average Equity	4696.21	4696.21	4696.21	4696.21	4696.21
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	882.04	882.04	882.04	882.04	882.04

(₹ in lakh)

Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Equity	4969.42	4969.42	4969.42	4969.42	4969.42
Additions due to ACE	0.00	0.00	0.00	0.00	0.00
Closing Equity	4969.42	4969.42	4969.42	4969.42	4969.42
Average Equity	4969.42	4969.42	4969.42	4969.42	4969.42
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	933.36	933.36	933.36	933.36	933.36

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

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

(₹ in lakh)

Asset- 1						
Transmission lines						
Sl. No.	Name of Line	Single Circuit / Double Circuit	Number of Sub- Conductors	Line Length Km		
1	400 kV D/C Jeypore-Gazuwaka T/L	Double Circuit	2	220		
Sl. No.	400 kV Sub-station bay					
1	Gajuwaka/ Vishakhapatnam: Jeypore Bay I & Bay II					
2	Jeypore: Gazuwaka- I & II					
3	Jeypore: Bus Reactor Bay					
Sl. No.	Communication System (PLCC)					
1	PLCC (Capital Cost up to Cut off)				120.28	
O&M Expenses						
		2019-20	2020-21	2021-22	2022-23	2023-24



Sl. No.	400 kV Sub-station bay				
Sub-station					
400 kV					
Number of bays	4	4	4	4	4
Transmission lines					
D/C Twin/Triple Conductor (km)	0.88	0.91	0.94	0.98	1.01
PLCC					
Normative rate of O&M as per Regulation	2	2	2	2	2
Total O&M Expense (₹ in lakh)	356.98	369.45	382.34	395.65	409.38

(₹ in lakh)

Asset- 2					
HVDC Line					
Srl. No.	Name of Line				
1	Gazuwaka/ Vishakhapatnam: HVDC B/B Station at Gajuwaka				
O&M Expenses					
	2019-20	2020-21	2021-22	2022-23	2023-24
HVDC lines					
HVDC Back to Back Station at Gajuwaka	1666.00	1725.00	1785.00	1848.00	1913.00
Total O&M Expense (₹ in lakh)	1666.00	1725.00	1785.00	1848.00	1913.00

66. Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provide as follows:

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Norms for sub-station Bays (Rs 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 (Rs 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 (Rs 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 (Rs. 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 (2500 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
- (v) the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.

(b) The total allowable operation and maintenance expenses for the transmission



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

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

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

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

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

68. O&M Expenses in respect of the transmission assets have been worked out as per the norms specified in the 2019 Tariff Regulations and the same is as follows:



(₹ in lakh)

Asset-1					
Details	2019-20	2020-21	2021-22	2022-23	2023-24
4 Numbers of 400 kV Sub-station bays	160.75	166.40	172.25	178.30	184.55
220 km D/C Twin/Triple Conductor transmission line	193.82	200.64	207.68	214.94	222.42
Total	354.57	367.04	379.93	393.24	406.97

(₹ in lakh)

Asset-2					
Details	2019-20	2020-21	2021-22	2022-23	2023-24
HVDC Back to Back Station at Gajuwaka	1666.00	1725.00	1785.00	1848.00	1913.00
Total	1666.00	1725.00	1785.00	1848.00	1913.00

Interest on Working Capital (“IWC”)

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

“34. Interest on Working Capital: (1) *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 annual 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. Definition - In these regulations, unless the context otherwise requires:-

(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;”

70. IWC has been worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of IWC considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-24. The components of the working capital and interest allowed thereon in respect of the transmission assets is as follows:

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M expenses for one month)	29.55	30.59	31.66	32.77	33.91
Working Components for Maintenance Spares (15% of O&M Expenses)	53.19	55.06	56.99	58.99	61.05
Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	176.01	177.84	179.24	180.95	182.20
Total Working Capital	258.74	263.48	267.89	272.70	277.16
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest of working capital	31.18	29.64	28.13	28.63	29.10

(₹ in lakh)

Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	138.83	143.75	148.75	154.00	159.42
Working Capital for Maintenance Spares (15% of O&M Expenses)	249.90	258.75	267.75	277.20	286.95
Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/ annual transmission charges)	365.42	373.25	380.20	388.26	395.48



Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Total Working Capital	754.15	775.75	796.70	819.46	841.85
Rate of Interest (in %)	12.05	11.25	10.50	10.50	10.50
Interest of working capital	90.87	87.27	83.65	86.04	88.39

Annual Fixed Charges for 2019-24 Tariff Period

71. The annual transmission charges allowed in respect of the transmission assets for 2019-24 tariff period are as follows:

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	163.75	163.75	163.75	163.75	163.75
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	882.04	882.04	882.04	882.04	882.04
O&M Expenses	354.57	367.04	379.93	393.24	406.97
Interest on Working Capital	31.18	29.64	28.13	28.63	29.10
Total	1431.55	1442.48	1453.86	1467.67	1481.87

(₹ in lakh)

Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	281.81	281.81	281.81	281.81	281.81
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	933.36	933.36	933.36	933.36	933.36
O&M Expenses	1666.00	1725.00	1785.00	1848.00	1913.00
Interest on Working Capital	90.87	87.27	83.65	86.04	88.39
Total	2972.05	3027.44	3083.82	3149.21	3216.57

Filing Fee and Publication Expenses

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



Licence Fee and RLDC Fees and Charges

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

Good and Service Tax

74. 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 Respondents 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.

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

Security Expenses

76. The Petitioner has submitted that security expenses in respect of 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.

77. We have considered the above submissions of Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on projected basis for 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The said petition has already been disposed of by the Commission vide order dated 3.8.2021 wherein the Commission



has approved the 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

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

Sharing of Transmission Charges

79. TANGEDCO has submitted that after coming into force of the 2020 Sharing Regulations, it has become inevitable to segregate the capital cost of the transmission assets and consequent yearly transmission charges into two parts i.e. up to the period (i.e. 31.10.2020) when the 2010 Sharing Regulations were in force and afterwards (i.e. since 1.11.2020) when the 2020 Sharing Regulations came into effect. This will give a correct allocation of the transmission charges as per the 2010 Sharing Regulations and the 2020 Sharing Regulations as provided in Regulation 43 of the 2014 Tariff Regulations and Regulation 57 of the 2019 Tariff Regulations respectively. TANGEDCO has further submitted that similar approach was adopted by the Commission when the 2010 Sharing Regulations had come into force on 1.7.2011 wherein the Commission had directed to split the capital cost in two heads viz. pre-PoC and post-PoC i.e. up to 30.6.2011 and beyond 30.6.2011 respectively.

80. In response, the Petitioner has submitted that after truing up and determination of transmission tariff, sharing of transmission charges for 2014-19 tariff period and



2019-24 tariff period up to 31.10.2020 shall be done as per the 2010 Sharing Regulations and thereafter from 1.11.2020 onwards, it shall be done as per the 2020 Sharing Regulations. The Petitioner has further submitted that tariff determination and sharing of transmission charges are two independent activities and the same cannot be interlinked. After determination of tariff of the transmission assets, the aspect of YTC bifurcation as contended by TANGEDCO shall be taken care of by CTUIL at the time of billing.

81. We have considered the submissions of the Petitioner and TANGEDCO. We agree with the submission of the Petitioner that tariff determination and sharing of transmission charges are two independent activities and they are not interlinked. The tariff of the transmission assets is determined in accordance with the provisions of the relevant Tariff Regulations and after determination of tariff of the transmission assets by the Commission, the sharing of the YTC amongst DICs is worked out in terms of provisions of the relevant Sharing Regulations and bills are raised accordingly.

82. During 2001-04, 2004-09 and 2009-14 tariff periods (up to 30.6.2011), the transmission charges for inter-State transmission systems were being shared in accordance with the Tariff Regulations for the respective tariff periods. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems was governed by the 2010 Sharing Regulations and with effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and Sharing 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.

83. To summarise:

- a) The revised AFC allowed in respect of the transmission assets for 2001-04 tariff period are as follows:

(₹ in lakh)			
Particulars	2001-02	2002-03	2003-04
AFC	10835.29	8793.66	9675.37

- b) The revised AFC allowed in respect of the transmission assets for 2004-09 tariff period are as follows:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
AFC	9775.07	9476.98	9181.74	7325.49	5183.04

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

(₹ in lakh)					
Asset-1					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
AFC	3241.50	3166.66	3117.57	1597.67	1625.96

(₹ in lakh)					
Asset-2					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
AFC	3447.06	3368.88	3318.26	1829.51	1872.83

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

(₹ in lakh)					
Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC	1591.94	1612.62	1629.12	1646.21	1666.40



(₹ in lakh)

Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
AFC	1895.17	1951.70	2006.58	2066.72	2133.79

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

(₹ in lakh)

Asset-1					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	1431.55	1442.48	1453.86	1467.67	1481.87

(₹ in lakh)

Asset-2					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
AFC	2972.05	3027.44	3083.82	3149.21	3216.57

84. This order disposes of Petition No. 479/TT/2020 in terms of the above discussions and findings.

sd/-
(P. K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(P. K. Pujari)
Chairperson

