

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 535/TT/2014

Coram:

**Shri A.S Bakshi, Member
Dr. M.K. Iyer, Member**

**Date of Hearing : 02.12.2015
Date of Order : 30.12.2015**

In the matter of:

Truing up of transmission tariff for 2009-14 tariff period and determination of transmission tariff for 2014-19 tariff period for 400 kV Kahalgaon transmission system in Eastern Region under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999, Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And in the matter of:

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

.....**Petitioner**

Versus

1. North Bihar Power Distribution Company Limited
2nd Floor, Vidyut Bhawan, Bailey Road
Patna- 800 001
2. South Bihar Power Distribution Company Limited
2nd Floor, Vidyut Bhawan, Bailey Road
Patna- 800 001
3. West Bengal State Electricity Distribution Company Limited
Bidyut Bhawan, Bidhan Nagar,
Block DJ, Sector-II, Salt Lake City
Kolkata -700 091
4. Grid Corporation of Orissa Limited
Shahid Nagar,
Bhubaneswar- 751 007



5. Damodar Valley Corporation
DVC Tower, Maniktala,
Civic Centre, VIP Road
Kolkata - 700 054
6. Power Department
Govt. of Sikkim, Gangtok- 737 101
7. Jharkhand State Electricity Board
Infront of Main Secretariat,
Doranda, Ranchi- 834002

....Respondents

The following were present:

For Petitioner: Shri. Jasbir Singh, PGCIL
 Shri. Anshul Garg, PGCIL
 Shri. Angaru Naresh Kumar, PGCIL
 Shri. S.K. Venkatesan, PGCIL
 Shri. M.M. Mondal, PGCIL
 Shri. Shashi Bhushan, PGCIL
 Shri. J. Mazumder, PGCIL
 Shri. R. Prasad, PGCIL
 Shri. Sunil Kumar, PGCIL
 Shri. S.S. Raju, PGCIL

For Respondent: None

ORDER

The present petition has been preferred by Power Grid Corporation of India Ltd. ('the petitioner'), a transmission licensee, for truing up of capital expenditure and tariff for 400 kV Kahalgaon transmission system in Eastern Region (hereinafter referred as "transmission asset") under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations") based on actual expenditure for the period 1.4.2009 to 31.3.2014, and for determination



of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.4.2014 to 31.3.2019.

2. The respondents are distribution licensees or power procurement companies of States, who are procuring transmission service from the petitioner, mainly beneficiaries of Eastern Region.

3. The petitioner has served the petition to the respondents and notice of this application has been published in the newspaper in accordance with Section 64 of the Electricity Act, 2003 (“the Act”). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. None of the respondents have filed reply to the petition. The hearing in this matter was held on 2.12.2015. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

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

a) The revised cost estimates for the transmission system were approved by the Ministry of Power, Government of India, vide letter dated 1.6.1992 and 7.9.1992 at a total cost of ₹22375.00 lakh as mentioned in Order dated 14.12.2005, Petition No. 127/2004.

b) The project scope as per investment approval is as under:

Transmission Lines

- i. Kahalgaon- Maithon AC D/C Line
- ii. Maithon-Jamshedpur AC D/C Line



iii. Jamshedpur- Rourkela AC S/C Line

Substations

400 kV Line Bays: 15

- c) The transmission assets were put in commercial operation from 1.3.1993 to 1.10.1994.
- d) The annual transmission charges up to 31.3.2009 in respect of the transmission system were approved vide order dated 14.12.2005 in Petition No. 127/2004, which were subsequently revised vide order dated 7.2.2008.
- e) The Commission, in its order dated 2.5.2011 in Petition No. 254/2010, determined the tariff for the tariff period 2009-14 based on admitted capital cost of ₹19666.55 lakh as on 31.3.2009 and additional capital expenditure of ₹362.53 lakh for FY 2011-12, in accordance with the 2009 Tariff Regulations. The tariff allowed for the tariff period 2009-14 is as under:-

Particulars	(₹in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	342.35	342.35	353.23	364.88	364.88
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1699.77	1699.77	1709.27	1718.78	1718.78
Interest on working capital	95.19	98.20	101.81	105.62	109.16
O&M expenses	1052.07	1112.25	1175.98	1243.23	1314.15
Total	3189.37	3252.56	3340.29	3432.50	3506.97

- f) The MAT rate applicable as on 2008-09 was considered to arrive at the rate of return on equity for the tariff period 2009-14, which is required to be adjusted as per the actual MAT rate applicable for the respective year at the time of truing up of tariff for 2009-14 tariff period.
- g) The instant petition was filed on 5.12.2014.



TRUING UP OF ANNUAL FIXED CHARGES FOR TARIFF PERIOD 2009-14

5. The truing up of tariff for 2009-14 tariff period has been determined as discussed below:-

Capital Cost

6. The petitioner has claimed admitted capital cost of ₹19666.55 lakh as on 1.4.2009 for the purpose of tariff. In addition to this, the petitioner has claimed additional capitalisation of ₹348.06 lakh during FY 2013-14 for tower strengthening work.

7. Last proviso to Clause (2) of Regulation 7 of the 2009 Tariff Regulations provides that:

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff”.

8. The capital cost admitted as on 31.3.2009 has been considered as the opening capital cost as on 1.4.2009 for determination of tariff in accordance with Regulation 7 of the 2009 Tariff Regulations. Accordingly, the admitted capital cost of ₹19666.55 lakh has been considered as opening capital cost as on 1.4.2009 to work out the trued up tariff for the tariff period 2009-14.

Additional Capital Expenditure

9. The petitioner has claimed ₹348.06 lakh as additional capital expenditure against the approved estimated additional capital expenditure of ₹362.53 lakh for



tower strengthening work under Clause (2)(v) of Regulation 9 of the 2009 Tariff Regulations.

10. Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations provides as follows:-

“(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

...

(v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:

...

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2009.”

11. The petitioner has claimed ₹348.06 lakh for 2013-14 against additional capitalisation of ₹362.53 lakh for 2011-12 approved by the Commission vide order dated 2.5.2011 in Petition No. 254/2010.

12. The petitioner has submitted justification for the delay in the tower strengthening work in the petition. The petitioner has submitted that the tower material for the strengthening of said lines was procured through open tender, which usually takes around six months for placing of award. Further, supply of material by the agency was also delayed, which accounted for another six months. Jamshedpur- Rourkela transmission line is located in deep forest and is



a militant prone area of Jharkhand and Odisha. Due to ROW issue and other problems, the initially engaged contractor could not complete the work even after lapse of more than six months of time. Accordingly, the said contract was cancelled and fresh tendering was done, which took around additional six months for award to another party. The line also passes through cultivated land, for which the farmers/land owners obstructed to the strengthening work due to standing crop and the work was stalled on several occasions. The Kahalgaon-Maithon line is located in certain low lying areas of Bihar, Jharkhand and West Bengal. During supply of tower material, there was flood in that area due to which the progress of work got hampered. The work got delayed and was completed on May, 2013.

13. The total actual additional capitalisation of ₹348.06 lakh claimed during the tariff period 2009-14 is less than the additional capitalisation of ₹362.53 lakh for the tariff period 2009-14 approved by the Commission vide order dated 2.5.2011 in Petition No. 254/2010. The Commission therefore, approves additional capitalisation of ₹348.06 lakh, in accordance with Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations. The summary of capital cost including additional capitalization is shown in the table below:-

(₹in lakh)

Cost as per Investment Approval:- ₹22375.00 lakh								
Particulars	Admitted capital cost as on 31.3.2009	Additional Capitalisation					Total additional capitalisation	Total capital cost including additional capitalisation
		2009-10	2010-11	2011-12	2012-13	2013-14		
Approved in order dated 2.5.2011	19666.55	0.00	0.00	362.53	0.00	0.00	362.53	20029.08



Cost as per Investment Approval:- ₹22375.00 lakh								
Allowed	19666.55	0.00	0.00	0.00	0.00	348.06	348.06	20014.61

Debt: Equity

14. Clause 2 of Regulation 12 of the 2009 Tariff Regulations provides that:

“In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt:equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.”

15. The petitioner has claimed trued up Annual Fixed Charge based on debt:equity ratio of 50.56:49.44 for the capital cost as considered by the Commission in its order dated 2.5.2011 in Petition No. 254/2010. The transmission asset was covered in order dated 7.2.2008 in Petition No.127/2004, in which the Commission considered admitted debt:equity ratio of 50.56:49.44 as on 31.3.2009. The admitted debt:equity ratio as on 31.3.2009 has been considered as opening debt:equity ratio as on 1.4.2009 for the purpose of truing up of the approved tariff for the tariff period 2009-14, as given under:-

(₹ in lakh)		
Funding	Admitted as on 31.3.2009 Amount	(%)
Debt	9943.05	50.56
Equity	9723.50	49.44
Total	19666.55	100.00

16. The petitioner has claimed normative debt:equity ratio of 70:30 for additional capitalizations during 2013-14. Debt-equity ratio is allowed in accordance with Clause 2 of Regulation 12 of the 2009 Tariff Regulations. The



overall debt:equity admitted as on 31.03.2014 including additional capitalization is as under:-

(₹ in lakh)

Funding	Admitted as on 31.3.2014 Amount	(%)
Debt	10186.69	50.90
Equity	9827.92	49.10
Total	20014.61	100.00

Interest on Loan ("IOL')

17. The petitioner has not claimed any interest on loan for the tariff period 2009-14 as the entire loan has already been repaid prior to 1.4.2009. As regards additional capital expenditure incurred during the tariff period 2009-14, it is observed that the petitioner has not claimed any interest on loan as the normative loan amount added during 2009-14 is less than the depreciation allowed for the respective years and therefore, the same is getting repaid in the same year. The petitioner has therefore, not claimed any IOL during 2013-14 for the tariff period 2009-14. Accordingly, IOL has been considered as nil for the purpose of truing up of tariff.

Return on Equity ("ROE")

18. Clause (3), (4) and (5) of Regulation 15 of the 2009 Tariff Regulations provide that:

“(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.



(4) Rate of return on equity shall be rounded off to three decimal points and 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 applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case maybe, shall recover the shortfall or refund the excess Annual Fixed Charge 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:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

19. The MAT rate of 11.330% applicable for 2008-09 was considered in the order dated 2.5.2011. However, for truing up purpose, the computation of RoE for the tariff period 2009-14 has been done on the basis of actual MAT rate applicable during 2009-14. The petitioner has submitted the variation in the MAT rate during 2009-14 as per the Finance Act of the relevant year for the purpose of grossing up of ROE, as below:-

Particulars	MAT Rate (%)	Grossed up RoE (Base rate/(1-t)) (%)
2009-10	16.995	18.674
2010-11	19.931	19.358
2011-12	20.008	19.377
2012-13	20.008	19.377
2013-14	20.961	19.610

20. Accordingly, the ROE as trued up is shown in the table below:-



Particulars	(₹in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 2.5.2011	1699.77	1699.77	1709.27	1718.78	1718.78
As claimed by the petitioner	1815.77	1882.28	1884.12	1884.12	1917.02
Allowed after trued up	1815.77	1882.28	1884.12	1884.12	1917.02

21. The return on equity allowed in the instant order is more than the ROE allowed vide order dated 2.5.2011 due to increase in the applicable MAT rate for the purpose of grossing up of base rate of return on equity.

Depreciation

22. Clause (42) of Regulation 3 of the 2009 Tariff Regulations defines useful life as follows:-

“**useful life**’ in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:-

.....

(c) AC and DC sub-station	25 years
(d) Hydro generating station	35 years
(e) Transmission line	35 years”

12. Further, Clause (4) of Regulation 17 of the 2009 Tariff Regulations provides as follows:-

"17. Depreciation:

...

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.”



23. Regulation 17 of the 2009 Tariff Regulations provides the methodology to workout the depreciation. The Commission, in its order dated 2.5.2011, has worked out the depreciation in accordance with Regulation 17 of the 2009 Tariff Regulations based on estimated capital expenditure. There is variation in actual capital expenditure incurred during the tariff period 2009-14 with that admitted vide order dated 2.5.2011 in Petition No. 254/2010.

24. As per Regulation 17 (4) of the 2009 Tariff Regulations, useful life for transmission line, sub-station and PLCC is 35 years, 25 years, and 15 years, respectively. In the present case, balance weighted average life of asset as on 1.4.2004, i.e., 22 years as mentioned in order dated 2.5.2011 in Petition No. 254/2010 has been considered for calculation of transmission charge for 2009-14 tariff period.

25. The depreciation for the tariff period 2009-14 has been worked out in accordance with Regulation 17 of the 2009 Tariff Regulations based on admitted capital expenditure and additional capitalisation as under:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 2.5.2011	342.35	342.35	353.23	364.88	364.88
As claimed by petitioner	342.35	342.35	342.35	342.36	354.40
Allowed after true up	342.35	342.35	342.35	342.35	354.40

The depreciation allowed in the instant order is less than the depreciation allowed vide order dated 2.5.2011 due to reduction in actual additional capitalisation vis-à-vis that approved vide order dated 2.5.2011.



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

26. The petitioner has computed O&M Expenses for the assets mentioned in the petition in accordance with the O&M norms for 400kV D/C twin conductor, 400kV S/C twin conductor transmission line and 400 kV bay specified in Regulation 19(g) of the 2009 Tariff Regulations. Accordingly, the O&M Expenses have been worked out as given below:-

(₹in lakh)

Particulars		2009-10	2010-11	2011-12	2012-13	2013-14
Norms as per the 2009 Tariff Regulations	400 kV, D/C, 2 conductors, transmission line (₹ lakh/km)	0.627	0.663	0.701	0.741	0.783
	400 kV, S/C, 2 conductor, transmission line(₹ lakh/km)	0.358	0.378	0.400	0.423	0.447
	400 kV Sub-station(₹ lakh/bay)	52.40	55.40	58.57	61.92	65.46



Actual line length (km)	400 kV, D/C, 2 conductors, transmission line	325	325	325	325	325
	400 kV, S/C, 2 conductors, transmission line	174	174	174	174	174
Actual (No. of Sub-stations)	400 kV Sub-stations	15	15	15	15	15
O&M expenses	400 kV, D/C, 2 conductors, transmission line (₹ lakh/km)	203.78	215.48	227.83	240.83	254.48
	400 kV, S/C, 2 conductors, transmission line	62.29	65.77	69.60	73.60	77.78
	400 kV Sub-station (₹ lakh)	786.00	831.00	878.55	928.80	981.90
Total(₹ in lakh)		1052.07	1112.25	1175.98	1243.23	1314.15

27. The O&M Expenses claimed by the petitioner for the tariff period 2009-14 are same as that approved in the tariff order dated 2.5.2011 in Petition No. 254/2010. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are the same, and are as follows:-

Particulars	(₹in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 2.5.2011	1052.07	1112.25	1175.98	1243.23	1314.15
As claimed by petitioner	1052.07	1112.25	1175.98	1243.23	1314.15
Allowed after true up	1052.07	1112.25	1175.98	1243.23	1314.15



Interest on working capital (“IWC”)

28. Sub-clause (c) of Clause (1) of Regulation 18 of the 2009 Tariff Regulations provides the components of the working capital for the transmission system and Clause (3) of Regulation 18 of the 2009 Tariff Regulations provides for the rate of interest on working capital.

29. The petitioner has submitted that the rate of interest on working capital has been considered as 12.25% as per Clause (3) of Regulation 18 of the 2009 Tariff Regulations and the components of working capital are also considered in accordance with Sub-clause (c) of Clause (1) of Regulation 18 of the 2009 Tariff Regulations.

30. The Commission in its order dated 2.5.2011 in Petition No. 254/2010 approved rate of interest on working capital as 12.25% as applicable for 2008-09. In accordance with Clause (3) of Regulation 18 of the 2009 Tariff Regulations, rate of interest on working capital shall be on normative basis and in case of transmission assets declared under commercial operation prior to 1.4.2009, shall be equal to short-term Prime Lending Rate as applicable as on 1.4.2009. State Bank of India short-term Prime Lending Rate on 1.4.2009 was 12.25%. Therefore, interest rate of 12.25% has been considered to work-out the interest on working capital in the instant case.

31. The IWC trued up is as under:-

	(₹in lakh)				
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	157.81	166.84	176.40	186.48	197.12
O & M expenses	87.67	92.69	98.00	103.60	109.51
Receivables	551.30	573.15	584.61	596.38	616.44
Total	796.78	832.67	859.01	886.47	923.08



Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Rate of Interest (%)	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	97.61	102.00	105.23	108.59	113.08

32. The IWC claimed by the petitioner, allowed and trued up are as shown in the table below:-

Particulars	(₹in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 2.5.2011	95.19	98.20	101.81	105.62	109.16
As claimed by petitioner	97.61	102.00	105.23	108.59	113.08
Allowed after true up	97.61	102.00	105.23	108.59	113.08

33. The IWC has increased on account of increase in receivables due to variation in ROE on account of applicable MAT rate during the 2009-14 tariff period.

ANNUAL FIXED CHARGES FOR 2009-14 TARIFF PERIOD

34. The detailed computation of the various components of the trued up annual fixed charges for the transmission asset for the tariff period 2009-14 is summarised below:

Particulars	(₹in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Block					
Opening Gross block	19666.55	19666.55	19666.55	19666.55	19666.55
Addition during 2009-14 due to Additional Capitalization	0.00	0.00	0.00	0.00	348.06
Closing Gross block	19666.55	19666.55	19666.55	19666.55	20014.61
Average Gross block	19666.55	19666.55	19666.55	19666.55	19840.58



Depreciation					
Rate of Depreciation (%)	1.741	1.741	1.741	1.741	1.786
Depreciable Value	17475.78	17475.78	17475.78	17475.78	17632.40
Elapsed Life (Beginning of the year)	13	14	15	16	17
Weighted Balance Useful life of the assets (years)	17	16	15	14	13
Remaining Depreciable Value	5819.97	5477.62	5135.27	4792.91	4607.19
Depreciation	342.35	342.35	342.35	342.35	354.40
Cumulative Depreciation	11998.16	12340.51	12682.86	13025.21	13379.61
Interest on Loan					
Gross normative loan	-	-	-	-	-
Cumulative repayment up to previous year	-	-	-	-	-
Net loan opening	-	-	-	-	-
Addition due to additional capitalisation	-	-	-	-	243.64
Repayment during the year	-	-	-	-	243.64
Net loan closing	-	-	-	-	-
Average Loan	-	-	-	-	-
Weighted Average Rate of Interest on Loan (%)	-	-	-	-	-
Interest	-	-	-	-	-
Return on Equity					
Opening Equity	9723.50	9723.50	9723.50	9723.50	9723.50
Additional Capitalisation	0.00	0.00	0.00	0.00	104.42
Closing Equity	9723.50	9723.50	9723.50	9723.50	9827.92
Average Equity	9723.50	9723.50	9723.50	9723.50	9775.71
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT rate for respective year (%)	16.995	19.931	20.008	20.008	20.961
Rate of Return on Equity (Pre Tax)(%)	18.674	19.358	19.377	19.377	19.610
Return on Equity (Pre Tax)	1815.77	1882.28	1884.12	1884.12	1917.02
Interest on Working Capital					
Maintenance Spares	157.81	166.84	176.40	186.48	197.12
O & M expenses	87.67	92.69	98.00	103.60	109.51



Receivables	551.30	573.15	584.61	596.38	616.44
Total	796.78	832.67	859.01	886.47	923.08
Interest	97.61	102.00	105.23	108.59	113.08
Annual Transmission Charges					
Depreciation	342.35	342.35	342.35	342.35	354.40
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1815.77	1882.28	1884.12	1884.12	1917.02
Interest on Working Capital	97.61	102.00	105.23	108.59	113.08
O & M Expenses	1052.07	1112.25	1175.98	1243.23	1314.15
Total	3307.79	3438.88	3507.68	3578.29	3698.65

DETERMINATION OF ANNUAL TRANSMISSION CHARGES FOR 2014-19

35. The petitioner has claimed the transmission charges as under:

	(₹in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	371.49	375.88	375.88	375.87	375.88
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1930.42	1933.58	1933.58	1933.58	1933.58
Interest on Working Capital	119.53	121.93	124.21	126.56	129.00
O & M Expenses	1204.57	1244.81	1286.09	1328.75	1372.81
Total	3626.01	3676.20	3719.76	3764.76	3811.27

36. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:

	(₹in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	180.69	186.72	192.91	199.31	205.92
O & M Expenses	100.38	103.73	107.17	110.73	114.40
Receivables	604.34	612.70	619.96	627.46	635.21
Total	885.41	903.15	920.04	937.50	955.53
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	119.53	121.93	124.21	126.56	129.00



Capital Cost

37. Clause (1) and (3) of Regulation 9 of the 2014 Tariff Regulations provide as follows:-

“(1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.

...

(3) The Capital cost of an existing project shall include the following:
(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and
(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”

38. The petitioner has claimed capital expenditure of ₹20014.61 lakh as on 31.3.2014 including additional capitalisation during the tariff period 2009-14. Further, the petitioner has also projected additional capital expenditure of ₹ 107.40 lakh during the tariff period 2014-19.

39. The trued up capital cost of ₹20014.61 lakh as on 1.4.2014 is considered for the purpose of tariff for tariff period 2014-19.

Additional Capital Expenditure

40. The petitioner has claimed additional expenditure of ₹107.40 lakh in FY 2014-15 on account of tower strengthening works for transmission line under Clause (3)(ix) of Regulation 14 of the 2014 Tariff Regulations incurred after cut-off date.

41. Clause 3(ix) of Regulation 14 of the 2014 Tariff Regulations provides as follows:-

“(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be



incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:

...

(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system”

42. The Commission vide letter dated 27.11.2015 directed the petitioner to submit clarification regarding whether the projected additional capitalisation for 2014-15 is a part of work under additional capitalisation approved by the Commission in its order dated 2.5.2011 in Petition No. 254/2010 and if so the petitioner should provide reasons for the cost overrun of ₹92.93 lakh [₹348.06 lakh (claimed for 2013-14) + ₹107.40 lakh (projected for 2014-15) - ₹362.53 lakh (approved for 2011-12)] on additional capitalisation approved by the Commission towards tower strengthening.

43. The petitioner vide affidavit dated 14.12.2015, submitted that the additional capitalization in the order dated 2.5.2011 in Petition No: 254/2010 was approved towards tower strengthening work of 400 kV D/C Kahalgaon- Maithon and 400 kV S/C Jamshedpur- Rourkela-I. The same work has been carried out during 2013-14 and 2014-15. The price for the said work was discovered through inviting open tender over which the petitioner has no control. The total expenditure incurred during 2013-14 and 2014-15 is based on LOA placed as per actual work whereas earlier it was on estimated basis. Total estimated material for this line was 501 MT and for the actual work carried out, total material used is



494 MT, which is almost equal to the estimated one. The increase in cost is due to increase in execution cost as per actual cost discovered through tendering process compared to the estimated one.

44. In view of the justification provided by the petitioner for the cost escalation in tower strengthening work, which have been executed beyond cut-off date, additional capitalisation proposed by the petitioner is allowed in accordance with sub clause (ix) of clause (3) of the Regulations 14 of the 2014 Tariff Regulations. The summary of total capital cost including additional capitalisation considered by the Commission is given below:-

Particulars	Admitted capital cost as on 31.3.2014	Additional Capitalisation					Total Additional Capitalisation	Total capital cost including additional capitalisation
		2014-15	2015-16	2016-17	2017-18	2018-19		
Amount	20014.61	107.40	0.00	0.00	0.00	0.00	107.40	20122.01

Debt:Equity Ratio

45. Clause 3 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(3) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2014, debt:equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.”

46. The admitted debt:equity ratio of 50.90:49.10 for the tariff period ending 31.3.2014 has been considered as opening debt:equity ratio as on 1.4.2014 for determination of tariff for the period 2014-19. The admitted debt:equity ratio as on 1.4.2014 for the purpose of determination of tariff is as follows:-



Particulars	Amount (in ₹lakh)	(%)
Debt	10186.69	50.90
Equity	9827.92	49.10
Total	20014.61	100.00

47. The debt:equity ratio for additional capitalisation proposed during the tariff period 2014-19 of ₹107.40 lakh is considered on normative basis, i.e., 70:30.

Interest on Loan (“IOL”)

48. The petitioner has not claimed any interest on loan for the tariff period 2014-19 as the complete loan has already been repaid before the tariff period 2014-19. With regard to additional capital expenditure projected during the tariff period 2014-19, the petitioner has submitted that the funding has been done through debt:equity ratio of 70:30 and it has claimed debt corresponding to 70% of the additional capitalization. It is observed that the petitioner has not claimed any interest on loan as the loan amount added corresponding to year-wise additional capitalization is less than the depreciation allowed for the respective years and therefore, the same is getting repaid in the same year. The petitioner has therefore, not claimed any IOL during 2014-19. Accordingly, Interest on Loan has been considered as nil for the purpose of tariff.

Return on Equity (“ROE”)

49. Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify as under:-



“24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system....

...

25. Tax on Return on Equity:

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

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

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

50. The petitioner has computed ROE at the rate of 19.610% after grossing up the ROE with MAT rate for 2013-14 as per the above Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

51. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.



52. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, MAT rate applicable during 2013-14 has been considered for the purpose of allowing return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. Accordingly, the ROE determined by the Commission is given below:-

(₹in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	9827.92	9860.14	9860.14	9860.14	9860.14
Addition due to additional capitalization	32.22	0.00	0.00	0.00	0.00
Closing Equity	9860.14	9860.14	9860.14	9860.14	9860.14
Average Equity	9844.03	9860.14	9860.14	9860.14	9860.14
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	1930.41	1933.57	1933.57	1933.57	1933.57

Depreciation

53. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

...(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 transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial



operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis

...

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** 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 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.”

54. The petitioner has computed depreciation considering capital expenditure of ₹20014.61lakh as on 31.3.2014. We have considered the submission made by the petitioner with reference to depreciation. Depreciation is allowed as provided under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation allowed are given hereunder:-

(₹in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	20014.61	20122.01	20122.01	20122.01	20122.01
Addition during the year due to projected additional capitalization	107.40	0.00	0.00	0.00	0.00
Closing Gross block	20122.01	20122.01	20122.01	20122.01	20122.01
Rate of Depreciation (%)	1.851	1.868	1.868	1.868	1.868
Depreciable Value	17837.36	17885.69	17885.69	17885.69	17885.69
Elapsed Life (Beginning of the year)	18	19	20	21	22
Weighted Balance Useful life of the assets	12	11	10	9	8
Remaining Depreciable Value	4457.75	4134.60	3758.73	3382.85	3006.98
Depreciation	371.48	375.87	375.87	375.87	375.87



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

55. The petitioner has computed normative O&M Expenses as per sub clause (a) of Clause (3) of Regulation 29 of the 2014 Tariff Regulations, as given hereunder:

		(₹in lakh)				
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
Norms as per the 2014 Tariff Regulations	400 kV, D/C, 2 conductors, transmission line (₹ lakh/km)	0.707	0.731	0.755	0.780	0.806
	400 kV, S/C, 2 conductor, transmission line (₹ lakh/km)	0.303	0.313	0.324	0.334	0.346
	400 kV Sub-station (₹ lakh/bay)	60.30	62.30	64.37	66.51	68.71
Actual line length (km)	400 kV, D/C, 2 conductors, transmission line	325	325	325	325	325
	400 kV, S/C, 2 conductors, transmission line	174	174	174	174	174
Actual (No. of Sub-stations)	400 kV Sub-stations	15	15	15	15	15
O&M expenses	400 kV, D/C, 2 conductors, transmission line (₹ lakh/km)	229.78	237.58	245.38	253.50	261.95
	400 kV, S/C, 2 conductors, transmission line	70.30	72.73	75.17	77.60	80.21
	400 kV Sub-station (₹ lakh)	904.50	934.50	965.55	997.65	1030.65
Total(₹in lakh)		1204.57	1244.81	1286.09	1328.75	1372.81

56. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 have been arrived on the basis of normalized actual O&M Expenses during the period 2008-13. The petitioner has further submitted that the wage revision of the employees of the petitioner company is due during 2014-19 and



actual impact of wage hike, which will be effective at a future date, has not been factored in fixation of the normative O&M rate specified for the tariff period 2014-19. The petitioner has prayed to be allowed to approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase.

57. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, we would like to clarify that any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

58. The details of O&M Expenses allowed are given hereunder:

Particulars	(₹in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses approved	1204.57	1244.81	1286.09	1328.75	1372.81

Interest on Working Capital (“IWC”)

26. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as follows:

“28. Interest on Working Capital

- (c)(i) Receivables equivalent to two months of fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
- (iii) Operation and maintenance expenses for one month”

“(5)‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”



59. The petitioner has submitted that it has computed IWC for the tariff period 2014-19 considering the SBI Base Rate as on 1.4.2014 plus 350 basis points. The rate of interest on working capital considered for the purpose of computation of tariff is 13.50%.

60. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The interest on working capital as allowed is shown in the table below:

(₹in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	180.69	186.72	192.91	199.31	205.92
O & M expenses	100.38	103.73	107.17	110.73	114.40
Receivables	604.33	612.70	619.96	627.46	635.21
Total	885.40	903.15	920.05	937.50	955.53
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	119.53	121.93	124.21	126.56	129.00

Annual Transmission Charges

61. The Annual Transmission Charges allowed for the transmission asset is given hereunder:-

(₹in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	371.48	375.87	375.87	375.87	375.87
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1930.41	1933.57	1933.57	1933.57	1933.57
Interest on WC	119.53	121.93	124.21	126.56	129.00
O&M Expenses	1204.57	1244.81	1286.09	1328.75	1372.81
Total	3625.99	3676.18	3719.75	3764.76	3811.26

62. The detailed computation of various components of annual fixed charges for the tariff period 2014-19 is summarized below:-

(₹in lakh)



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Block					
Opening Gross block	20014.61	20122.01	20122.01	20122.01	20122.01
Addition during 2014-19 due to Projected Additional Capitalization	107.40	0.00	0.00	0.00	0.00
Closing Gross block	20122.01	20122.01	20122.01	20122.01	20122.01
Average Gross block	20068.31	20122.01	20122.01	20122.01	20122.01
Depreciation					
Rate of Depreciation (%)	1.851	1.868	1.868	1.868	1.868
Depreciable Value	17837.36	17885.69	17885.69	17885.69	17885.69
Elapsed Life (Beginning of the year)	18	19	20	21	22
Weighted Balance Useful life of the assets	12	11	10	9	8
Remaining Depreciable Value	4457.75	4134.60	3758.73	3382.85	3006.98
Depreciation	371.48	375.87	375.87	375.87	375.87
Cumulative Depreciation	13751.09	14126.96	14502.84	14878.71	15254.58
Interest on Loan					
Net Loan-Opening	-	-	-	-	-
Addition due to Additional Capitalization	75.18	-	-	-	-
Repayment during the year	75.18	-	-	-	-
Net Loan-Closing	-	-	-	-	-
Average Loan	-	-	-	-	-
Weighted Average Rate of Interest on Loan (%)	-	-	-	-	-
Interest	-	-	-	-	-
Return on Equity					
Opening Equity	9827.92	9860.14	9860.14	9860.14	9860.14
Additions	32.22	0.00	0.00	0.00	0.00
Closing Equity	9860.14	9860.14	9860.14	9860.14	9860.14
Average Equity	9844.03	9860.14	9860.14	9860.14	9860.14
Return on Equity (Base Rate)(%)	15.500	15.500	15.500	15.500	15.500
MAT rate for the respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax)(%)	19.610	19.610	19.610	19.610%	19.610
Return on Equity (Pre Tax)	1930.41	1933.57	1933.57	1933.57	1933.57
Interest on Working Capital					
Maintenance Spares	180.69	186.72	192.91	199.31	205.92



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O & M expenses	100.38	103.73	107.17	110.73	114.40
Receivables	604.33	612.70	619.96	627.46	635.21
Total	885.40	903.15	920.05	937.50	955.53
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	119.53	121.93	124.21	126.56	129.00
Annual Transmission Charges					
Depreciation	371.48	375.87	375.87	375.87	375.87
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1930.41	1933.57	1933.57	1933.57	1933.57
Interest on Working Capital	119.53	121.93	124.21	126.56	129.00
O & M Expenses	1204.57	1244.81	1286.09	1328.75	1372.81
Total	3625.99	3676.18	3719.75	3764.76	3811.26

Filing Fee and Publication Expenses

62. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 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 clause (1) of Regulation 52 of the 2014 Tariff Regulations.

Licence Fee and RLDC Fees and Charges

63. The petitioner has requested to allow the petitioner to bill and recover Licence fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

Service Tax



64. The petitioner has sought to recover service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We are of the view that the petitioner's prayer is premature.

Deferred Tax Liability

65. The petitioner has sought recovery of deferred tax liability before 1.4.2009 from the beneficiaries or long term consumers/ DICs as and when materialized under Regulation 49 of the 2014 Tariff Regulations. The deferred tax liability shall be dealt as per Regulation 49 of the 2014 Tariff Regulations, as amended. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same materializes, directly from the beneficiaries or long term transmission customers /DICs.

Sharing of Transmission Charges

66. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 43 of the 2014 Tariff Regulations.

67. This order disposes of Petition No. 535/TT/2014.

Sd/-
(Dr. M. K. Iyer)
Member

Sd/-
(A.S. Bakshi)
Member

