

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 115/TT/2014

Coram:

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

**Date of Hearing : 06.04.2016
Date of Order : 27.04.2016**

In the matter of:

Determination of transmission tariff for (A) 765 kV, 240 MVAR Switchable Line Reactor of 765 kV D/C Aurangabad-Padghe Line Ckt-I to be charged as Bus Reactor at Aurangabad substation and (B) 765 kV, 240 MVAR Switchable Line Reactor of 765 kV D/C Aurangabad- Padghe Line Ckt-II to be charged as Bus Reactor at Aurangabad Sub-station under "System Strengthening in North/ West part of WR for IPP Projects in Chhattisgarh (IPP-E)" in Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

And in the matter of:

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

.....**Petitioner**

Versus

1. Madhya Pradesh Power Management Company Ltd.
Shakti Bhawan, Rampur
Jabalpur - 482 008
2. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, 4th Floor
Andheri (East), Mumbai - 400 052
3. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road
Vadodara - 390 007



4. Electricity Department Govt. Of Goa
Vidyut Bhawan, Panaji,
Near Mandvi Hotel, Goa - 403 001
5. Electricity Department
Administration of Daman & Diu
Daman - 396 210
6. Electricity Department
Administration of Dadra Nagar Haveli
U.T., Silvassa - 396 230
7. Chhattisgarh State Electricity Board
P.O.Sunder Nagar, Dangania, Raipur
Chhatisgaarh-492013
8. Madhya Pradesh Audyogik Kendra
Vikas Nigam (Indore) Ltd.
3/54, Press Complex, Agra-Bombay Road,
Indore-452 008

....Respondents

The following were present:-

For Petitioner: Shri S. S. Raju, PGCIL
Shri M. M. Mondal, PGCIL
Shri Rakesh Prasad, PGCIL
Shri Subash C Taneja, PGCIL
Shri S. K. Venkatesan, PGCIL
Shri Pankaj Sharma, PGCIL
Shri A. M. Pavgi, PGCIL
Shri Mohd. Mohsin, PGCIL
Shri Piyush Awasthi, PGCIL

For Respondent: Shri Mayank Sharma, Advocate, PSPCL
Shri Gaurav Gupta, Advocate, PSPCL

ORDER

The present petition has been filed by Power Grid Corporation of India Ltd.
("the petitioner") for determination of tariff for Asset-1: 765 kV, 240 MVAR
Switchable Line Reactor of 765 kV D/C Aurangabad-Padghe Line Ckt-I to be



charged as Bus Reactor at Aurangabad Sub-station and Asset-2: 765 kV, 240 MVAR Switchable Line Reactor of 765 kV D/C Aurangabad-Padghe Line Ckt-II to be charged as Bus Reactor at Aurangabad Sub-station under “System Strengthening in North/West part of WR for IPP Projects in Chhattisgarh (IPP-E)” in Western Region for 2014-19 tariff period in Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.8.2015 to 31.3.2019.

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

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

(a) The investment approval of the project was accorded by Board of Directors of the petitioner company vide the Memorandum no. C/CP/Chattisgarh dated 27.12.2011 with an estimated cost of ₹174665 lakh including IDC of ₹11143 lakh based on September, 2011 price level. The approved apportioned cost for both the assets was ₹8470.19 lakh.

(b) The scope of the instant project is as under:-

The scope of work covered under the project “System strengthening in North/ West part of Western Region for IPP Projects in Chhattisgarh(IPP-E)” is as follows:-



Transmission Line

- a. Aurangabad (PowerGrid) – Padghe (PowerGrid) 765 kV D/C Line
- b. Padghe (PowerGrid) – Padhge/Kudus (MSETCL) 400 kV D/C (Quad) Line
- c. Vadodara – Asoj 400 kV D/C (Quad) Line

Sub-station

- d. Establishment of 765/400kV, 2*1500MVA Padghe GIS Sub-station
- e. Bay Extension at 765/400 kV Aurangabad (PowerGrid), Vadodara (PowerGrid) and Asoj (GETCO) Sub-stations
- f. Bay Extensions at 400 kV Padghe (MSETCL) Sub-station

(c) Further, the petitioner has submitted in principal approval of CEA vide letter dated 27.2.2014. CEA has approved commissioning of line reactors into bus reactors as it would help in controlling the high voltages being observed at Jabalpur, Gwalior, Wardha and Aurangabad.

(d) The transmission system was scheduled to be commissioned within 32 months from the date of Investment Approval in a progressive manner. The scheduled date of commissioning of the transmission system was 27.8.2014. Assets 1 and 2 were commissioned on 2.8.2014 and 7.8.2014.

(e) The AFC for the instant assets was approved for inclusion in PoC charges as per Regulation 7(7) of the 2014 Tariff Regulations vide its order dated 26.9.2014.

(f) The petitioner has claimed a capital cost of ₹3440.06 lakh and ₹3672.98 lakh for Asset 1 & Asset 2 as on COD (2.8.2014 and 7.8.2014 for Assets 1 and 2) and additional capital expenditure of ₹1820.21 lakh & ₹1915.85 lakh in 2014-19 tariff period.



(g) The petitioner has served the petition to the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 ("the Act"). No comments/objections have been received from the public in response to the notice published in newspaper. No submission has been made by the respondents. The hearing in this matter was held on 6.4.2016. Having heard the representatives of the petitioner and perused the material on record, we proceed to determine the tariff in accordance with the Tariff Regulations, 2014.

(h) The petitioner has claimed the transmission charges as under:-

(₹ in lakh)					
Particulars Asset 1	2014-15 (Pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	79.83	165.54	174.99	174.99	174.99
Interest on Loan	96.87	193.07	189.84	173.55	157.85
Return on Equity	94.15	197.07	208.91	208.91	208.91
Interest on Working Capital	12.43	22.43	23.16	23.12	23.10
O & M Expenses	112.11	174.44	180.24	186.22	192.40
Total	395.39	752.55	777.14	766.79	757.25

Particulars Asset 2	2014-15 (Pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	83.88	176.56	186.66	186.66	186.66
Interest on Loan	102.37	207.11	203.71	186.27	169.44
Return on Equity	99.02	210.39	223.06	223.06	223.06
Interest on Working Capital	12.63	23.31	24.08	24.01	23.96
O & M Expenses	109.84	174.44	180.24	186.22	192.40
Total	407.74	791.81	817.75	806.22	795.52

(i) The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:-



(₹ in lakh)

Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	14.07	14.54	15.02	15.52	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	99.25	125.43	129.52	127.80	126.21
Total	138.65	166.14	171.58	171.25	171.10
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	18.72	22.43	23.16	23.12	23.10
Pro Rata Interest on working capital	12.43	22.43	23.16	23.12	23.10

(₹ in lakh)

Asset 2					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	14.07	14.54	15.02	15.52	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	104.46	131.97	136.29	134.37	132.59
Total	143.86	172.68	178.35	177.82	177.48
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	19.42	23.31	24.08	24.01	23.96
Pro rata Interest on working capital	12.63	23.31	24.08	24.01	23.96

4. The petitioner has submitted revised tariff forms and Auditor's certificates vide affidavit dated 17.12.2016.

Date of Commercial Operation ("COD")

5. The petitioner has claimed the date of the commercial operation of the instant transmission assets as follows:-

Assets	SCOD	COD (Actual)
Asset-1	27.8.2014	2.8.2014
Asset-2	27.8.2014	7.8.2014

6. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-



“4. Date of Commercial Operation: The date of commercial operation of a generating station or unit or block thereof or a transmission system or element thereof shall be determined as under:

xxx

(3) Date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:

xxx

xxx”

7. The petitioner has submitted RLDC certificate, issued by WRLDC, POSOCO vide letter dated 14.8.2014 in support of the claim of commercial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations indicating completion of successful trial operation. Accordingly, the commercial operation date of the transmission asset has been considered as 2.8.2014 and 7.8.2014 for Assets 1 and 2 respectively and the tariff is worked out from date of commercial operation to 31.3.2019.

Capital Cost

8. The details of approved apportioned cost, capital cost as on COD, the additional capital expenditure and the estimated completion cost claimed by the petitioner for the instant assets are as follows:-

(₹ in lakh)

Asset	Approved apportioned cost	Exp. up to COD	Additional capital expenditure			Estimated completion cost
			2014-15	2015-16	Total	
Asset-1	4294.87	1619.85	1430.36	389.85	1820.21	3440.06
Asset-2	4175.32	1757.13	1498.66	417.19	1915.85	3672.98



9. Regulation 9 (1) and (2) and 10 (1) of the 2014 Tariff Regulations specify as follows:-

“9. Capital Cost: (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.

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

- a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- c) Increase in cost in contract packages as approved by the Commission;
- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

“10. Prudence Check of Capital Expenditure: The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

(1) In case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Commission from time to time: Provided that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff.”

10. We have considered the submissions of the petitioner with regard to the capital cost. The instant assets have been commissioned within the scheduled date of commissioning and there is no time over-run. The completion cost of the instant assets is within the approved apportioned cost and there is no cost over-



run. The capital cost of the transmission assets has been worked out in the subsequent paragraphs taking into consideration IEDC and IDC and initial spares allowed for the instant assets.

IDC and IEDC

11. The Commission had directed the petitioner to submit the IEDC, IDC discharged till SCOD and from SCOD to COD and thereafter on cash basis for all the assets on affidavit with an advance copy to the beneficiaries by 14.4.2016. However, the petitioner has not submitted the same till date. We have worked out the tariff of the instant assets on the basis of information on hand and the petitioner is directed to submit the IEDC, IDC discharged till SCOD and from SCOD to COD and thereafter on cash basis for all the assets at the time of truing up.

12. Therefore, the capital cost considered as on COD is as follows:-

Particulars	Capital cost (As per Auditor's Certificate dated 24.9.2014)
Asset 1	3440.06
Asset 2	3672.98

(₹ in lakh)

Initial Spares

13. Regulation 13(d) of the 2014 Tariff Regulations provides that initial spares shall be capitalised as a percentage of plant and machinery cost upto cut-off date, subject to following ceiling norms:-

- “(a) Coal-based/lignite-fired thermal generating stations - 4.0%
- (b) Gas Turbine/Combined Cycle thermal generating stations - 4.0%
- (c) Hydro generating stations including pumped storage hydro generating station. - 4.0%
- (d) Transmission system
- (i) Transmission line - 1.00%



- (ii) Transmission Sub-station (Green Field) - 4.00%
- (iii) Transmission Sub-station (Brown Field) - 6.00%
- (iv) Series Compensation devices and HVDC Station - 4.00%
- (v) Gas Insulated Sub-station (GIS) - 5.00%
- (vi) Communication system - 3.5%

14. The petitioner has claimed initial spares of ₹130.55 lakh and ₹100.19 lakh for Assets 1 and 2 respectively vide Auditor`s Certificate dated 24.9.2014.

(₹ in lakh)		
Particulars (as per Auditor`s certificate)	Asset-1 (Sub-station)	Asset-2 (Sub-station)
Capital Cost upto cut-off date (excluding IDC, IEDC and land and cost of civil works)	3043.90	3236.43
Initial spares claimed	130.55	100.19
Norms	6.00%	6.00%
Initial spares as per norms	185.96	200.19
Excess	0.00	0.00

15. The initial spares claimed are within the ceiling norms as per Regulation 13 (d) of 2014 Tariff Regulations and hence the amount claimed by the petitioner is allowed.

Additional Capital Expenditure

16. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

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

- (i) Undischarged liabilities recognised to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and



- (v) Change in Law or compliance of any existing law.”

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.

17. Clause (13) of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” date as under:-

“cut-off date” means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation”.

Provided that the cut-off date may be extended by the Commission if it is proved on the basis of documentary evidence that the capitalisation could not be made within the cut-off date for reasons beyond the control of the project developer;”

18. The cut-off date of the transmission assets is 31.3.2017. The petitioner has proposed additional capitalization towards balance and retention payment under Regulation 14(1)(i) of the 2014 Tariff Regulations. The additional capital expenditure claimed by the petitioner as it is within the cut-off date and within the approved apportioned cost. The details are as follows:-

(₹ in lakh)

Asset	Approved apportioned cost	Exp. up to COD	Additional capital expenditure			Estimated completion cost
			2014-15	2015-16	Total	
Asset-1	4294.87	1619.85	1430.36	389.85	1820.21	3440.06
Asset-2	4175.32	1757.13	1498.66	417.19	1915.85	3672.98

Debt:EquityRatio

19. Regulation 19 (1) of the 2014 Tariff Regulations specifies as under:-



“19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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:

- where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- 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.”

20. The petitioner has considered the debt: equity ratio of 70.00:30.00, which is in line with the 2014 Tariff Regulations, hence same is considered for calculation of tariff. We have considered debt:equity ratio of 70.00:30.00 for additional capitalization during 2015-16 and 2016-17. The details of the debt:equity as on the date of COD i.e. 1.8.2015 and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Asset 1	As on COD		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	1133.90	70.00	1274.15	70.00	2408.05	70.00
Equity	485.96	30.00	546.06	30.00	1032.02	30.00
Total	1619.85	100.00	1820.21	100.00	3440.06	100.00

(₹ in lakh)

Asset 2	As on COD		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	1229.99	70.00	1341.10	70.00	1101.89	70.00
Equity	527.14	30.00	574.76	30.00	2571.09	30.00
Total	1757.13	100.00	4021.48	100.00	3672.98	100.00



Interest on Loan ("IOL")

21. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations provides as under:-

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

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

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

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

22. We have considered the weighted average rate of IOL on the basis of rate prevailing as on COD. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The petitioner's prayer to bill and adjust the impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period from the respondents will be considered at the time of truing up. The details of weighted average rate of interest are placed at **Annexure-I** and the IOL has been worked out as follows:-

(₹ in lakh)

Asset 1					
Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	1133.90	2135.15	2408.04	2408.04	2408.04
Cumulative Repayment upto Previous Year	0.00	79.72	245.25	420.24	595.24
Net Loan-Opening	1133.90	2055.43	2162.79	1987.80	1812.80
Additions	1001.25	272.90	0.00	0.00	0.00
Repayment during the year	79.72	165.53	174.99	174.99	174.99



Asset 1					
Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Net Loan-Closing	2055.43	2162.79	1987.80	1812.80	1637.81
Average Loan	1594.66	2109.11	2075.30	1900.30	1725.31
Weighted Average Rate of Interest on Loan (%)	9.1496%	9.1545%	9.1480%	9.1330%	9.1498%
Interest on Loan	96.74	193.08	189.85	173.55	157.86

(₹ in lakh)

Asset 2					
Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	1229.99	2279.05	2571.09	2571.09	2571.09
Cumulative Repayment upto Previous Year	0.00	83.71	260.27	446.93	633.59
Net Loan-Opening	1229.99	2195.34	2310.82	2124.16	1937.50
Additions	1049.06	292.03	0.00	0.00	0.00
Repayment during the year	83.71	176.56	186.66	186.66	186.66
Net Loan-Closing	2195.34	2310.82	2124.16	1937.50	1750.83
Average Loan	1712.67	2253.08	2217.49	2030.83	1844.16
Weighted Average Rate of Interest on Loan (%)	9.1886%	9.1928%	9.1871%	9.1728%	9.1890%
Interest on Loan	102.18	207.12	203.72	186.28	169.46

Return on Equity("ROE")

23. Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25 (2) 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 and run of the 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:

xxx

xxx"



“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.”

24. The petitioner has claimed ROE at the rate of 20.243% after grossing up the ROE of 16.00% (15.50% + 0.50% additional ROE for timely completion) with MAT rate as per the above said 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.

25. The petitioner has considered the additional ROE of 0.50% towards timely completion of the transmission asset under the Regulation 24 (2) of 2014 Tariff Regulation as mentioned below:-

“Provided that:

- i. in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:
- ii. the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:



- iii. additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid.”

26. 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, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations.

27. The petitioner has claimed an additional ROE of 0.50% towards timely completion of the transmission asset. The petitioner has submitted WRPC certificate dated 14.1.2016 in accordance to Regulation 24 2(iii) of 2014 Tariff Regulations for the same.

28. As per the scope of work of the project “System Strengthening in North/West part of WR for IPP Projects in Chhattisgarh” in the Investment approval dated 27.12.2011 the elements covered are:-

Transmission Line

- a. Aurangabad (PowerGrid) – Padghe (PowerGrid) 765 kV D/C Line
- b. Padghe (PowerGrid) – Padhge/ Kudus (MSETCL) 400 kV D/C(Quad) Line
- c. Vadodara – Asoj 400 kV D/C (Quad) Line



Sub-station

- d. Establishment of 765/400 kV, 2*1500 MVA Padghe GIS Sub-station
- e. Bay Extension at 765/400 kV Aurangabad (PowerGrid), Vadodara (PowerGrid) and Asoj (GETCO) Sub-stations
- f. Bay Extensions at 400kV Padghe (MSETCL) Sub-station

29. The 2014 Tariff Regulations define “element” as:

“‘Element’ in respect of a transmission system shall mean an asset which has been distinctively defined under the scope of the project in the Investment Approval;”

30. The petitioner has claimed additional ROE for both the assets i.e. (A) 765 kV, 240 MVAR Switchable Line Reactor of 765 kV D/C Aurangabad- Padghe Line Ckt-I to be charged as Bus Reactor at Aurangabad Sub-station and (B) 765 kV, 240 MVAR Switchable Line Reactor of 765 kV D/C Aurangabad-Padghe Line Ckt-II to be charged as Bus Reactor at Aurangabad Sub-station. It is observed that both the assets have not been distinctively defined as an “element” under the scope of the project in the Investment Approval and they are only a part of an “element” defined under the scope. Further, the associated line i.e. Aurangabad (PowerGrid)-Padghe (PowerGrid) 765 kV D/C Line is yet to be commissioned.

31. We have considered the submissions of the petitioner and the WRPC certificate submitted for the claim. The certificate specifies only that the petitioner is eligible for additional ROE as per Regulation 24(iii) of 2014 Tariff Regulations, however the certificate does not specifically state that the commissioning of the particular assets will benefit the system operation in the regional/national grid as required under Regulation 24(iii). Further, the instant assets, line reactors are



commissioned as bus reactors and they are not put into use as envisaged at the time of investment approval. Further, the assets covered in the instant petition have not been distinctively defined as an “element” under the scope of the project in the Investment Approval and hence cannot be considered as an “element” as per 2014 Tariff Regulations. Hence, we are of the view that the assets in the instant case are not eligible for additional RoE as the assets cannot be considered as a complete “element” as envisaged in the 2014 Tariff Regulations. In view of above, the petitioner’s claim for additional ROE has been disallowed in the instant petition. The ROE allowed for the instant transmission assets is given below:-

(₹ in lakh)

Asset 1					
Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	485.96	915.06	1032.02	1032.02	1032.02
Additions	429.11	116.96	0.00	0.00	0.00
Closing Equity	915.06	1032.02	1032.02	1032.02	1032.02
Average Equity	700.51	973.54	1032.02	1032.02	1032.02
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	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity	91.08	190.92	202.38	202.38	202.38

(₹ in lakh)

Asset 2					
Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	527.14	976.74	1101.89	1101.89	1101.89
Additions	449.60	125.16	0.00	0.00	0.00
Closing Equity	976.74	1101.89	1101.89	1101.89	1101.89
Average Equity	751.94	1039.32	1101.89	1101.89	1101.89
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
MAT rate for respective year	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity	95.75	203.81	216.09	216.09	216.09



Depreciation

32. 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."

33. Clause (67) of Regulation 3 of the 2014 Tariff Regulations defines useful life as follows:-

"(67) '**Useful life**' in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:

- (a) Coal/Lignite based thermal generating station 25 years
- (b) Gas/Liquid fuel based thermal generating station 25 years
- (c) AC and DC sub-station 25 years
- (d) Gas Insulated Substation (GIS) 25 years
- (d) Hydro generating station including pumped Storage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years"



34. The weighted average useful life of the asset has been considered as 25 years in accordance with the above regulation. The details of the depreciation allowed are given hereunder:-

(₹ in lakh)

Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	1619.85	3050.21	3440.06	3440.06	3440.06
Additional Capitalisation	1430.36	389.85	0.00	0.00	0.00
Closing Gross Block	3050.21	3440.06	3440.06	3440.06	3440.06
Average Gross Block	2335.03	3245.14	3440.06	3440.06	3440.06
Rate of Depreciation (%)	5.15%	5.10%	5.09%	5.09%	5.09%
Depreciable Value	2101.53	2920.62	3096.05	3096.05	3096.05
Balance useful life of the asset	25	24	23	22	21
Elapsed life	0	1	2	3	4
Remaining Depreciable Value	2101.53	2840.90	2850.81	2675.81	2500.82
Depreciation during the year	79.72	165.53	174.99	174.99	174.99
Cumulative depreciation	79.72	245.25	420.24	595.24	770.23

(₹ in lakh)

Asset 2					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	1757.13	3255.79	3672.98	3672.98	3672.98
Additional Capitalisation	1,498.66	417.19	-	-	-
Closing Gross Block	3255.79	3672.98	3672.98	3672.98	3672.98
Average Gross Block	2506.46	3464.39	3672.98	3672.98	3672.98
Rate of Depreciation (%)	5.14%	5.10%	5.08%	5.08%	5.08%
Depreciable Value	2255.81	3117.95	3305.68	3305.68	3305.68
Balance useful life of the asset	25	24	23	22	21
Elapsed life	-	1	2	3	4
Remaining Depreciable Value	2255.81	3034.23	3045.41	2858.75	2672.09
Depreciation during the year	83.71	176.56	186.66	186.66	186.66
Cumulative depreciation	83.71	260.27	446.93	633.59	820.25



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

35. Asset 1 & Asset 2 of the instant petition covers 4 bays of 765 kV voltage level. Regulation 29(3)(a) of the 2014 Tariff Regulations specifies the following norms for O&M Expenses for a 765 kV bay:-

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Norm (₹ in lakh/bay)					
765 kV	55.97	87.22	90.12	93.11	96.20

36. The petitioner has submitted that norms for 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 is due during the 2014-19 tariff period 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.

37. 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, any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.



38. The petitioner has claimed O&M Expenses as specified in sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. The details of O&M Expenses allowed are given hereunder:-

(₹ in lakh)

Asset 1	Year				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
765 kV bay (2 No.)	111.94	174.44	180.24	186.22	192.40
Total	111.94	174.44	180.24	186.22	192.40

Asset 2	Year				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
765 kV bay (2 No.)	109.63	174.44	180.24	186.22	192.40
Total	109.63	174.44	180.24	186.22	192.40

Interest on Working Capital ("IWC")

39. As per 2014 Tariff Regulations the components of the working capital and the interest thereon are discussed hereinafter:-

(i) Receivables

As per Regulation 28(1) (c) (i) of the 2014 Tariff Regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis of 2 months transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

(ii) Maintenance Spares



Regulation 28 (1) (c) (ii) of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses from 1.4.2014. The petitioner has claimed maintenance spares for the instant asset and value of maintenance spares has accordingly been worked out as 15% of O&M Expenses.

(iii) O & M Expenses

Regulation 28 (1) (c) (iii) of the 2014 Tariff Regulations provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O & M Expenses for the instant asset and value of O & M Expenses has accordingly been worked out by considering 1 month O&M Expenses.

(iv) Rate of interest on working capital

Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later. Further, the 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. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points).

40. The interest on working capital allowed is shown in the table below:-



(₹ in lakh)

Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M Expenses	14.06	14.53	15.01	15.51	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	98.49	124.37	128.41	126.69	125.10
Total Working Capital	137.88	165.07	170.46	170.13	169.98
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	12.34	22.28	23.01	22.97	22.95

Asset 2					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M Expenses	14.06	14.53	15.01	15.51	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	103.65	130.85	135.10	133.18	131.40
Total Working Capital	143.04	171.55	177.15	176.63	176.29
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	12.54	23.16	23.92	23.84	23.80

Annual Transmission Charges

41. The detailed computation of the various components of the annual fixed charges for the transmission asset for the tariff period 2014-19 is summarised below:-

(₹ in lakh)

Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	1619.85	3050.21	3440.06	3440.06	3440.06
Additional Capitalisation	1430.36	389.85	0.00	0.00	0.00
Closing Gross Block	3050.21	3440.06	3440.06	3440.06	3440.06
Average Gross Block	2335.03	3245.14	3440.06	3440.06	3440.06
Rate of Depreciation (%)	5.15%	5.10%	5.09%	5.09%	5.09%



Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciable Value	2101.53	2920.62	3096.05	3096.05	3096.05
Balance Useful life of the asset	25	24	23	22	21
Elapsed Life	0	1	2	3	4
Remaining Depreciable Value	2101.53	2840.90	2850.81	2675.81	2500.82
Depreciation	79.72	165.53	174.99	174.99	174.99
Cumulative depreciation	79.72	245.25	420.24	595.24	770.23
Interest on Loan					
Gross Normative Loan	1133.90	2135.15	2408.04	2408.04	2408.04
Cumulative Repayment upto Previous Year	0.00	79.72	245.25	420.24	595.24
Net Loan-Opening	1133.90	2055.43	2162.79	1987.80	1812.80
Additions	1001.25	272.90	0.00	0.00	0.00
Repayment during the year	79.72	165.53	174.99	174.99	174.99
Net Loan-Closing	2055.43	2162.79	1987.80	1812.80	1637.81
Average Loan	1594.66	2109.11	2075.30	1900.30	1725.31
Weighted Average Rate of Interest on Loan (%)	9.1496%	9.1545%	9.1480%	9.1330%	9.1498%
Interest	96.74	193.08	189.85	173.55	157.86
Return on Equity					
Opening Equity	485.96	915.06	1032.02	1032.02	1032.02
Additions	429.11	116.96	0.00	0.00	0.00
Closing Equity	915.06	1032.02	1032.02	1032.02	1032.02
Average Equity	700.51	973.54	1032.02	1032.02	1032.02
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	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity	91.08	190.92	202.38	202.38	202.38
Interest on Working Capital					
O & M expenses	14.06	14.53	15.01	15.51	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	98.49	124.37	128.41	126.69	125.10
Total	137.88	165.07	170.46	170.13	169.98
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	12.34	22.28	23.01	22.97	22.95
Annual Transmission Charges					
Depreciation	79.72	165.53	174.99	174.99	174.99

Asset 1					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Interest on Loan	96.74	193.08	189.85	173.55	157.86
Return on Equity	91.08	190.92	202.38	202.38	202.38
Interest on Working Capital	12.34	22.28	23.01	22.97	22.95
O & M Expenses	111.94	174.44	180.24	186.22	192.40
Total	391.82	746.25	770.48	760.12	750.59

Asset 2					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	1757.13	3255.79	3672.98	3672.98	3672.98
Additional Capitalisation	1498.66	417.19	0.00	0.00	0.00
Closing Gross Block	3255.79	3672.98	3672.98	3672.98	3672.98
Average Gross Block	2506.46	3464.39	3672.98	3672.98	3672.98
Rate of Depreciation (%)	5.14%	5.10%	5.08%	5.08%	5.08%
Depreciable Value	2255.81	3117.95	3305.68	3305.68	3305.68
Balance Useful life of the asset	25	24	23	22	21
Elapsed Life	0	1	2	3	4
Remaining Depreciable Value	2255.81	3034.23	3045.41	2858.75	2672.09
Depreciation	83.71	176.56	186.66	186.66	186.66
Cumulative depreciation	83.71	260.27	446.93	633.59	820.25
Interest on Loan					
Gross Normative Loan	1229.99	2279.05	2571.09	2571.09	2571.09
Cumulative Repayment upto Previous Year	0.00	83.71	260.27	446.93	633.59
Net Loan-Opening	1229.99	2195.34	2310.82	2124.16	1937.50
Additions	1049.06	292.03	0.00	0.00	0.00
Repayment during the year	83.71	176.56	186.66	186.66	186.66
Net Loan-Closing	2195.34	2310.82	2124.16	1937.50	1750.83
Average Loan	1712.67	2253.08	2217.49	2030.83	1844.16
Weighted Average Rate of Interest on Loan (%)	9.1886	9.1928	9.1871	9.1728	9.1890
Interest	102.18	207.12	203.72	186.28	169.46
Return on Equity					
Opening Equity	527.14	976.74	1101.89	1101.89	1101.89
Additions	449.60	125.16	0.00	0.00	0.00
Closing Equity	976.74	1101.89	1101.89	1101.89	1101.89
Average Equity	751.94	1039.32	1101.89	1101.89	1101.89



Asset 2					
Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
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	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity	95.75	203.81	216.09	216.09	216.09
Interest on Working Capital					
O & M expenses	14.06	14.53	15.01	15.51	16.03
Maintenance Spares	25.33	26.17	27.04	27.93	28.86
Receivables	103.65	130.85	135.10	133.18	131.40
Total	143.04	171.55	177.15	176.63	176.29
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	12.54	23.16	23.92	23.84	23.80
Annual Transmission Charges					
Depreciation	83.71	176.56	186.66	186.66	186.66
Interest on Loan	102.18	207.12	203.72	186.28	169.46
Return on Equity	95.75	203.81	216.09	216.09	216.09
Interest on Working Capital	12.54	23.16	23.92	23.84	23.80
O & M Expenses	109.63	174.44	180.24	186.22	192.40
Total	403.81	785.09	810.63	799.10	788.41

Filing Fee and Publication Expenses

42. 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

43. The petitioner has requested to allow the petitioner to bill and recover License 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

44. 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 of service tax is premature.

Sharing of Transmission Charges

45. 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.

46. This order disposes of Petition No. 115/TT/2014.

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

Sd/-
(A.S. Bakshi)
Member



ANNEXURE-I**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19**

(₹in lakh)

Asset 1				
Particulars	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIX- Loan 1-	9.40%	133.00	0.00	133.00
SBI (21.03.2012) - Loan 6-	10.25%	153.00	0.00	153.00
BOND - XLII- Loan 2-	8.85%	24.00	0.00	24.00
BOND - XLII- Loan 3-	8.80%	62.00	0.00	62.00
BOND XLII Loan 4	7.93%	34.00	0.00	34.00
BOND - XLIV- Loan 5-	8.70%	489.00	0.00	489.00
BOND XLV - Loan 7-	9.65%	166.00	0.00	166.00
Proposed Loan 2014-15 (9.30%)- Loan 8	9.30%	0.00	72.89	72.89
Total		1061.00	72.89	1133.89

Asset 2				
Particulars	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIX- Loan 1-	9.40%	132.00	0.00	132.00
SBI (21.03.2012) - Loan 6-	10.25%	152.00	0.00	152.00
BOND - XLI- Loan 2-	8.85%	24.00	0.00	24.00
BOND - XLII- Loan 3-	8.80%	61.00	0.00	61.00
BOND XLIII Loan 4	7.93%	33.00	0.00	33.00
BOND - XLIV- Loan 5-	8.70%	484.00	0.00	484.00
BOND XLV - Loan 7-	9.65%	250.00	0.00	250.00
Proposed Loan 2014-15 (9.30%)- Loan 8	9.30%	0.00	94.00	94.00
Total		1136.00	94.00	1230.00



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2014-19

(₹in lakh)

Asset 1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1061.00	1133.89	1133.89	1133.89	1133.89
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	15.91	48.48
Net Loans Opening	1061.00	1133.89	1133.89	1117.98	1085.41
Add: Draw(s) during the Year	72.89	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	15.91	32.57	195.57
Net Closing Loan	1133.89	1133.89	1117.98	1085.41	889.84
Average Net Loan	1097.45	1133.89	1125.94	1101.70	987.63
Rate of Interest on Loan (%)	9.1496	9.1545	9.1480	9.1330	9.1498
Interest on Loan	100.41	103.80	103.00	100.62	90.37

Asset 2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1136.00	1230.00	1230.00	1230.00	1230.00
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	15.82	55.22
Net Loans Opening	1136.00	1230.00	1230.00	1214.18	1174.78
Add: Draw(s) during the Year	94.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	15.82	39.40	200.73
Net Closing Loan	1230.00	1230.00	1214.18	1174.78	974.05
Average Net Loan	1183.00	1230.00	1222.09	1194.48	1074.42
Rate of Interest on Loan (%)	9.1886%	9.1928%	9.1871%	9.1728%	9.1890%
Interest on Loan	108.70	113.07	112.28	109.57	98.73

