

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 399/TT/2014

Coram:

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

**Date of Hearing : 06.04.2016
Date of Order : 26.04.2016**

In the matter of:

Determination of transmission tariff for **Asset-I** : 400 kV, 1 x 125 MVAR Bus Reactor at Parli Sub-station and **Asset-II** : Conversion of 50 MVAR Line Reactor (4 nos.) into switchable Line Reactors at 400/200 kV Pune Sub-station under installation of reactors (Part-II) in western Region for the 2014-19 tariff period 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-482008
2. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, 4th Floor, Andheri(East), Mumbai-400052
3. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road
Vadodara- 390007
4. Electricity Department
Government of Goa,
Vidyut Bhawan, Panaji- 403001



5. Electricity Department
Administration of Daman & Diu,
Daman- 396210
6. Electricity Department
Administration of Dadar Nagar Haveli,
U.T., Silvassa- 396230
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-452008

.....**Respondents**

The following were present:-

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

For Respondent: None.

ORDER

The present petition has been filed by Power Grid Corporation of India Ltd. ("the petitioner") for determination of tariff for **Asset-I** : 400 kV, 1 x 125 MVAR Bus Reactor at Parli Sub-station and **Asset-II** : Conversion of 50 MVAR Line Reactor (4 nos.) into switchable Line Reactors at 400/200 kV Pune Sub-station



under installation of reactors (Part-II) in Western Region for 2014-19 tariff period (hereinafter referred as “transmission asset”) under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from COD 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 for the project was accorded by Board of Directors of the petitioner company vide memorandum no. C/CP/WR-343 dated 5.4.2013 at an estimated cost of ₹9283 lakh, which included IDC of ₹502 lakh. Subsequently, the Revised Cost Estimate (RCE) was accorded by Board of Directors of the petitioner company vide memorandum no. C/CP/RCE/Rectr. Part-II-WR dated 12.10.2015 at an estimated cost of ₹10211lakh, which included IDC of ₹182 lakh.

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

Sub-Station:

Sl. No.	Sub-station	Reactive Compensation
(i)	Damoh	1 x 125 MVAR Bus Reactor
(ii)	Bachau	1 x 125 MVAR Bus Reactor
(iii)	Pirana	1 x 125 MVAR Bus Reactor
(iv)	Itarsi*	2 x 125 MVAR Bus Reactor
(v)	Seoni	1 x 125 MVAR Bus Reactor



(vi)	Parli	1 x 125 MVAR Bus Reactor
(vii)	Raipur	1 x 125 MVAR Bus Reactor
(viii)	Gwalior**	1 x 125 MVAR Bus Reactor
(ix)	Raipur [one ckt of 400 kV Raipur-Bhadrawati D/C line]	1 x 63 MVAR Bus Reactor

*To replace existing 2*50 MVAR reactor at Itarsi Sub-station which shall be used as spares.

**To replace existing 1*50 MVAR reactor at Gwalior Sub-station which shall be used as spares.

(c) The petitioner has claimed the revised transmission charges on account of revised capital cost as on COD and additional capitalization as under:-

(₹ in lakh)

Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	6.71	41.47	51.52	55.32	55.32
Interest on Loan	8.43	49.68	58.94	59.08	53.81
Return on Equity	7.58	47.75	60.2	64.99	64.99
Interest on Working Capital	1.28	6.64	7.48	7.8	7.8
O&M Expenses	13.62	62.3	64.37	66.51	68.71
Total	37.62	207.84	242.51	253.7	250.63

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	3.91	15.63	18.35	19.85	19.85
Interest on Loan	4.86	18.46	20.25	20.29	18.41
Return on Equity	4.4	17.83	20.91	22.59	22.59
Interest on Working Capital	4.31	14.96	15.59	16.14	16.58
O&M Expenses	72.62	249.2	257.48	266.04	274.84
Total	90.1	316.08	332.58	344.91	352.27

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



(₹ in lakh)

Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	9.05	9.35	9.66	9.98	10.31
O & M Expenses	5.03	5.19	5.36	5.54	5.73
Receivables	27.77	34.64	40.42	42.28	41.77
Total	41.85	49.18	55.44	57.8	57.81
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	1.28	6.64	7.48	7.8	7.8

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	36.18	37.38	38.62	39.91	41.23
O & M Expenses	20.1	20.77	21.46	22.17	22.9
Receivables	49.88	52.68	55.43	57.49	58.71
Total	106.16	110.83	115.51	119.57	122.84
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	4.31	14.96	15.59	16.14	16.58

4. The petitioner has submitted revised tariff forms vide affidavit dated 22.4.2016. The petitioner has also submitted RCE vide affidavit dated 11.4.2016.

5. The annual transmission charges for the instant asset was allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges vide order dated 24.12.2014.

6. 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 have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. The hearing in this matter was held on 6.4.2016. None of the



respondents have filed their reply. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

Commercial Operation Date (“COD”)

7. The petitioner has claimed the date of the commercial operation as 10.1.2015 and 13.12.2014 for Asset-I and Asset-II respectively. 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”

8. The petitioner has submitted RLDC certificate issued by WRLDC, POSOCO, vide letter dated 22.4.2016 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 for Asset-I and Asset-II. Accordingly, the commercial operation date (COD) of the transmission asset has been considered as 10.1.2015 and 13.12.2014 for Asset-I and Asset-II respectively. The tariff is worked out from COD to 31.3.2019 for both the assets.



Capital Cost

9. The details of apportioned approved cost, capital cost as on date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred for the instant assets are as under:-

(₹ in lakh)

Asset	Approved apportioned cost as per FR	Approved apportioned cost as per RCE	Capital cost as on COD	Additional capitalization			Total estimated completion cost
				2014-15	2015-16	2016-17	
Asset-I	873.05	1104.27	430.67	242.45	259.38	161.97	1094.47
Asset-II	414.23	387.17	218.57	59.30	47.37	56.97	382.21

10. 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.”

Time over-run

11. As per the investment approval, the commissioning schedule of the project is 24 months from the date of investment approval. The investment approval was accorded on 28.3.2013 and the schedule date of commercial operation was 27.3.2015. The Asset-I and Asset-II was commissioned on 10.1.2015 and 13.12.2014 respectively. Hence, there is a no time over-run for both Asset-I and Asset-II in commissioning of the assets.

Cost Over-run

12. There was cost over-run in case of Asset-I when compared to the approved apportioned FR cost. The petitioner has submitted that cost over-run was mainly on account of variation in cost of foundation for structures from actual execution to site condition, due to increase in award cost for Switchgear, Compensating Equipments, Control, Relay and Protection Panel, Bus bars/ Conductors/Insulators and Auxiliary System. However, as per the revised apportioned cost, submitted vide affidavit dated 11.4.2016, the



estimated completion cost of both the assets is within the revised apportioned cost.

Treatment of 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 6.50% for Asset-I which is above the ceiling limit specified in the 2014 Tariff Regulations. The petitioner has not claimed any initial spares for Asset-II. The excess initial spares worked out is shown in table below:-

Description	Particulars	Plant and Machinery Cost	Initial Spares claimed	Ceiling limit as per 2014 Tariff Regulations	Initial spares worked out	Excess initial spares claimed
		(a)	(b)	(c)	(d)=((a-b)*c)/(100-c)%	(e)=(b-d)
Asset-I	Sub-station	920.60	59.87	6.00%	54.94	4.93



15. In response to query regarding the initial spares discharged post COD, the petitioner submitted that it has discharged ₹27.48 lakh out of total initial spares post COD. We have considered the submissions of the petitioner and have adjusted the same from the capital cost as on COD, considered ₹27.48 lakh as additional capitalization for 2014-15 in addition to the additional capitalization claimed by the petitioner.

IDC & IEDC

16. The petitioner, vide affidavit dated 22.4.2016, has submitted that portion of IDC was discharged during 2014-15 and 2015-16. We have considered the submissions of the petitioner and accordingly the capital cost considered as on COD for tariff computation is shown below:-

Particulars	(₹ in lakh)	
	Asset-I	Asset-II
Capital cost as on COD as per Auditor's Certificate	485.46	227.20
Less: Accrued IDC upto COD	22.38	8.63
Less: Excess Initial Spares	4.93	0.00
Less: Initial Spares discharged post COD	27.48	0.00
Capital cost considered as on COD for tariff computation	430.67	218.57

Additional Capital Expenditure

17. The petitioner has proposed additional capitalization of ₹214.97 lakh, ₹259.38 lakh and ₹161.97 lakh for Asset-I for the year 2014-15, 2015-16 and 2016-17 respectively towards balance and retention payment under Regulation 14(1)(i) of 2014 Tariff Regulations. Further, the petitioner has proposed additional capitalization of ₹59.30 lakh, ₹47.37 lakh and ₹56.97 lakh for Asset-II for the year 2014-15, 2015-16 and 2016-17 respectively towards balance and retention



payment under Regulation 14(1)(i) of 2014 Tariff Regulations. The additional capitalization proposed by the petitioner is inclusive of IDC discharged during 2014-15 and 2015-16. Initial spares discharged post COD for Asset-I has also been considered as part of additional capitalization for 2014-15. We have considered the submissions of the petitioner. It is observed that total estimated completion cost including additional capitalization for 2014-15, 2015-16 and 2016-17 is within the approved apportioned cost for both Asset-I and Asset-II.

18. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” as follows:-

“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 a year, the cut - off date shall be 31st March of the year closing after three years of the year of commercial operation.”

19. The cut-off date for Asset-I and Asset-II works out to be 31.3.2018 and 31.3.2017 respectively. The additional capitalization claimed by the petitioner is within the cut-off date. The additional capitalization for 2014-15, 2015-16 and 2016-17 is allowed under Regulation 14(1)(i) of 2014 Tariff Regulations for both Asset-I and Asset-II. The details of additional capitalization allowed is as follows:-

Cost as per Investment Approval for Asset-I is ₹1104.27lakh							
Capital cost as on 10.1.2015 (COD)	Additional capitalisation projected					Total additional capitalisation	Total capital cost including additional capitalisation as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19		
430.67	242.45	259.38	161.97	0.00	0.00	663.80	1094.47



Cost as per Investment Approval for Asset-II is ₹387.17lakh							
Capital cost as on 13.12.2014 (COD)	Additional capitalisation projected					Total additional capitalisation	Total capital cost including additional capitalisation as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19		
218.57	59.30	47.37	56.97	0.00	0.00	163.64	382.21

Debt:Equity Ratio

20. 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.”

21. The petitioner has considered debt:equity ratio as 70:30 as on COD as well as for additional capitalisation. We have considered debt:equity ratio of 70:30 as on COD and for additional capitalization during 2014-19 period. The details of the debt:equity as on the date of COD and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

Asset-I	(₹ in lakh)					
	As on 10.1.2015		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	301.47	70.00	464.66	70.00	766.13	70.00
Equity	129.20	30.00	199.14	30.00	328.34	30.00
Total	430.67	100.00	663.80	100.00	1094.47	100.00

(₹ in lakh)



Asset-II	As on 13.12.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	153.00	70.00	114.55	70.00	267.55	70.00
Equity	65.57	30.00	49.09	30.00	114.66	30.00
Total	218.57	100.00	163.64	100.00	382.21	100.00

Interest on Loan (“IOL”)

22. 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.”

23. We have considered the weighted average rate of IOL on the basis of rate prevailing as on 1.4.2014. Further, the petitioner has prayed to allow it to bill and adjust impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period, if any from the respondents. 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** and the IOL for Asset-I and Asset-II has been worked out as follows:-

(₹ in lakh)

Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross loan opening	301.47	471.18	652.75	766.13	766.13
Cumulative Repayment upto previous year	0.00	6.22	46.02	95.91	149.59
Net Loan-Opening	301.47	464.97	606.73	670.22	616.54
Additions during the year	169.72	181.57	113.38	0.00	0.00
Repayment during the year	6.22	39.80	49.88	53.68	53.68
Net Loan-Closing	464.97	606.73	670.22	616.54	562.85
Average Loan	383.22	535.85	638.48	643.38	589.70
Rate of Interest (%)	9.4266	9.2344	9.2237	9.2005	9.1677
Interest	8.02	49.48	58.89	59.19	54.06

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross loan opening	153.00	194.51	227.67	267.55	267.55
Cumulative Repayment upto previous year	0.00	3.88	19.51	37.85	57.70
Net Loan-Opening	153.00	190.63	208.16	229.70	209.85
Additions during the year	41.51	33.16	39.88	0.00	0.00
Repayment during the year	3.88	15.63	18.35	19.85	19.85
Net Loan-Closing	190.63	208.16	229.70	209.85	190.00
Average Loan	171.82	199.40	218.93	219.77	199.92
Rate of Interest (%)	9.3888	9.2608	9.2496	9.2320	9.2137
Interest	4.82	18.47	20.25	20.29	18.42

Return on Equity("ROE")

24. Clause (1) & (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 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:”

“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.”

25. The petitioner has computed ROE at the rate of 19.610% for FY 2014-15 and at the rate of 19.705% from FY 2015-16 onwards after grossing up the ROE with MAT rate as per the above Regulation for both Asset-I and Asset-II. The Petitioner has considered the MAT Rate of 20.96% for FY 2014-15 and MAT Rate of 21.34% from FY 2015-16 onwards. 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.



26. 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.

27. 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. We have considered the MAT rate applicable during 2013-14 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. The ROE allowed for Asset-I and Asset-II is given below:-

(₹ in lakh)					
Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	129.20	201.94	279.75	328.34	328.34
Additional Capitalization	72.74	77.81	48.59	0.00	0.00
Closing Equity	201.94	279.75	328.34	328.34	328.34
Average Equity	165.57	240.84	304.05	328.34	328.34
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
Tax 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)	7.21	47.23	59.62	64.39	64.39



(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	65.57	83.36	97.57	114.66	114.66
Additional Capitalization	17.79	14.21	17.09	0.00	0.00
Closing Equity	83.36	97.57	114.66	114.66	114.66
Average Equity	74.47	90.47	106.12	114.66	114.66
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
Tax 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)	4.36	17.74	20.81	22.49	22.49

Depreciation

28. 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."

29. 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 pumpedStorage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years”

30. The petitioner has claimed depreciation considering capital expenditure of ₹463.08 lakh as on 10.1.2015 with additional capitalization of ₹214.97 lakh, ₹259.38 lakh and ₹161.97 lakh for 2014-15, 2015-16 and 2016-17 respectively for Asset-I. With respect to Asset-II the petitioner has claimed depreciation considering capital expenditure of ₹218.57 lakh as on 13.12.2014 with additional capitalization of ₹59.30 lakh, ₹47.37 lakh and ₹56.97 lakh for 2014-15, 2015-16 and 2016-17 respectively.

31. We have considered the submissions of the petitioner and have computed depreciation considering capital expenditure approved in this order as on COD and additional capitalization for 2014-15, 2015-16 and 2016-17 for Asset-I and Asset-II. The weighted average useful life of the asset has been considered as 25 years for Asset-I and Asset-II in accordance with the above regulation. The details of the depreciation allowed for Asset-I and Asset-II are given hereunder:-

(₹ in lakh)

Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross block	430.67	673.12	932.50	1094.47	1094.47
Additional Capitalization	242.45	259.38	161.97	0.00	0.00
Closing Gross block	673.12	932.50	1094.47	1094.47	1094.47
Average Gross block	551.90	802.81	1013.49	1094.47	1094.47



Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Rate of Depreciation (%)	5.202	5.130	5.056	5.028	5.028
Depreciable Value	496.71	722.53	912.14	985.02	985.02
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	496.71	716.16	864.58	886.23	831.20
Depreciation	6.37	41.18	51.24	55.03	55.03

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross block	218.57	277.87	325.24	382.21	382.21
Additional Capitalization	59.30	47.37	56.97	0.00	0.00
Closing Gross block	277.87	325.24	382.21	382.21	382.21
Average Gross block	248.22	301.56	353.73	382.21	382.21
Rate of Depreciation (%)	5.229	5.183	5.186	5.193	5.193
Depreciable Value	223.40	271.40	318.35	343.99	343.99
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	223.40	267.52	298.85	306.14	286.29
Depreciation	3.88	15.63	18.35	19.85	19.85

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

32. The petitioner has computed normative O&M Expenses as per Regulation 29(4)(a) of the 2014 Tariff Regulations. Accordingly, the petitioner’s entitlement to O&M expenses for Asset-I and Asset-II have been worked out as given hereunder:-



Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Asset-I					
Bay (₹ lakh/bay)					
400 kV	60.3	62.3	64.37	66.51	68.71
Bay					
400 kV	1	1	1	1	1
Total O&M expense (bay) (₹ Lakh)	13.38	62.30	64.37	66.51	68.71
Asset-II					
Bay (₹ lakh/bay)					
400 kV	60.3	62.3	64.37	66.51	68.71
Bay					
400 kV	4	4	4	4	4
Total O&M expense (bay)(₹ Lakh)	72.03	249.20	257.48	266.04	274.84

33. 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.

34. 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.



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

(₹ in lakh)					
Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses Allowed	13.38	62.30	64.37	66.51	68.71

(₹ in lakh)					
Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses Allowed	72.03	249.20	257.48	266.04	274.84

Interest on Working Capital (“IWC”)

36. 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).

37. The interest on working capital allowed for Asset-I and Asset-II is shown in the table below:-

(₹ in lakh)					
Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	2.01	9.35	9.66	9.98	10.31
O & M expenses	1.12	5.19	5.36	5.54	5.73
Receivables	6.03	34.46	40.23	42.10	41.59
Total	9.16	48.99	55.25	57.61	57.62
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50



Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Interest	1.24	6.61	7.46	7.78	7.78

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	10.80	37.38	38.62	39.91	41.23
O & M expenses	6.00	20.77	21.46	22.17	22.90
Receivables	14.89	52.67	55.41	57.47	58.70
Total	31.70	110.81	115.49	119.54	122.83
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	4.28	14.96	15.59	16.14	16.58

Annual Transmission Charges

38. The detailed computation of the various components of the annual fixed charges for Asset-I and Asset-II for the tariff period 2014-19 is summarised below:-

(₹ in lakh)

Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Block					
Opening Gross Block	430.67	673.12	932.50	1094.47	1094.47
Additional Capitalization	242.45	259.38	161.97	0.00	0.00
Closing Gross Block	673.12	932.50	1094.47	1094.47	1094.47
Average Gross Block	551.90	802.81	1013.49	1094.47	1094.47
Depreciation					
Rate of Depreciation (%)	5.202	5.130	5.056	5.028	5.028
Depreciable Value	496.71	722.53	912.14	985.02	985.02
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life	25	24	23	22	21
Remaining Depreciable Value	496.71	716.16	864.58	886.23	831.20
Depreciation	6.37	41.18	51.24	55.03	55.03
Interest on Loan					
Gross Normative Loan	301.47	471.18	652.75	766.13	766.13
Cumulative Repayment upto Previous Year	0.00	6.22	46.02	95.91	149.59
Net Loan-Opening	301.47	464.97	606.73	670.22	616.54



Particulars (Asset-I)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Additions	169.72	181.57	113.38	0.00	0.00
Repayment during the year	6.22	39.80	49.88	53.68	53.68
Net Loan-Closing	464.97	606.73	670.22	616.54	562.85
Average Loan	383.22	535.85	638.48	643.38	589.70
Weighted Average Rate of Interest on Loan (%)	9.4266	9.2344	9.2237	9.2005	9.1677
Interest	8.02	49.48	58.89	59.19	54.06
Return on Equity					
Opening Equity	129.20	201.94	279.75	328.34	328.34
Additions	72.74	77.81	48.59	0.00	0.00
Closing Equity	201.94	279.75	328.34	328.34	328.34
Average Equity	165.57	240.84	304.05	328.34	328.34
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14(%)	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 (Pre Tax)	7.21	47.23	59.62	64.39	64.39
Interest on Working Capital					
Maintenance Spares	2.01	9.35	9.66	9.98	10.31
O & M expenses	1.12	5.19	5.36	5.54	5.73
Receivables	6.03	34.46	40.23	42.10	41.59
Total	9.16	48.99	55.25	57.61	57.62
Interest	1.24	6.61	7.46	7.78	7.78
Annual Transmission Charges					
Depreciation	6.37	41.18	51.24	55.03	55.03
Interest on Loan	8.02	49.40	58.69	58.87	53.61
Return on Equity	7.21	47.23	59.62	64.39	64.39
Interest on Working Capital	1.24	6.61	7.46	7.78	7.78
O & M Expenses	13.38	62.30	64.37	66.51	68.71
Total	36.21	206.73	241.38	252.57	249.52

(₹ in lakh)

Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Block					
Opening Gross Block	218.57	277.87	325.24	382.21	382.21
Additional Capitalization	59.30	47.37	56.97	0.00	0.00
Closing Gross Block	277.87	325.24	382.21	382.21	382.21
Average Gross Block	248.22	301.56	353.73	382.21	382.21



Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation					
Rate of Depreciation (%)	5.229	5.183	5.186	5.193	5.193
Depreciable Value	223.40	271.40	318.35	343.99	343.99
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life	25	24	23	22	21
Remaining Depreciable Value	223.40	267.52	298.85	306.14	286.29
Depreciation	3.88	15.63	18.35	19.85	19.85
Interest on Loan					
Gross Normative Loan	153.00	194.51	227.67	267.55	267.55
Cumulative Repayment upto Previous Year	0.00	3.88	19.51	37.85	57.70
Net Loan-Opening	153.00	190.63	208.16	229.70	209.85
Additions	41.51	33.16	39.88	0.00	0.00
Repayment during the year	3.88	15.63	18.35	19.85	19.85
Net Loan-Closing	190.63	208.16	229.70	209.85	190.00
Average Loan	171.82	199.40	218.93	219.77	199.92
Weighted Average Rate of Interest on Loan (%)	9.3888	9.2608	9.2496	9.2320	9.2137
Interest	4.82	18.47	20.25	20.29	18.42
Return on Equity					
Opening Equity	65.57	83.36	97.57	114.66	114.66
Additions	17.79	14.21	17.09	0.00	0.00
Closing Equity	83.36	97.57	114.66	114.66	114.66
Average Equity	74.47	90.47	106.12	114.66	114.66
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14(%)	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 (Pre Tax)	4.36	17.74	20.81	22.49	22.49
Interest on Working Capital					
Maintenance Spares	10.80	37.38	38.62	39.91	41.23
O & M expenses	6.00	20.77	21.46	22.17	22.90
Receivables	14.89	52.67	55.41	57.47	58.70
Total	31.70	110.81	115.49	119.54	122.83
Interest	4.28	14.96	15.59	16.14	16.58
Annual Transmission Charges					
Depreciation	3.88	15.63	18.35	19.85	19.85
Interest on Loan	4.82	18.47	20.25	20.29	18.42



Particulars (Asset-II)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Return on Equity	4.36	17.74	20.81	22.49	22.49
Interest on Working Capital	4.28	14.96	15.59	16.14	16.58
O & M Expenses	72.03	249.20	257.48	266.04	274.84
Total	89.36	316.00	332.48	344.80	352.18

Filing Fee and Publication Expenses

39. 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

40. 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

41. 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

42. 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.

43. This order disposes of Petition No. 399/TT/2014.

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

Sd/-
(A.S. Bakshi)
Member



ANNEXURE

DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19

Particulars (Asset-I)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-doco-	10.25%	100	0	100.00
BOND XLV-doco-	9.65%	108.25	0	108.25
BOND XLVI-ADDCAP FOR 2014-2015 addcap-	9.30%	0	6.51	6.51
BOND XLVI-doco	9.30%	115.91	0	115.91
BOND XLVIII-ADDCAP FOR 2014-2015 addcap-	8.20%	0	25.69	25.69
BOND XLIX-ADDCAP FOR 2014-2015 addcap-	8.15%	0	118.28	118.28
Total		324.16	150.48	474.64

Particulars (Asset-II)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-doco-	10.25%	40	0	40.00
BOND XLVI-ADDCAP FOR 2014-2015 addcap-	9.30%	0	0.09	0.09
BOND XLVI-doco	9.30%	112.75	0	112.75
BOND XLVIII-ADDCAP FOR 2014-2015 addcap-	8.20%	0	41.42	41.42
Total		152.75	41.51	194.26



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

(₹ in lakh)

Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	324.16	474.64	474.64	474.64	474.64
Cumulative Repayment of loan upto previous year	0	0	0	9.09	27.2
Net Loan Opening	324.16	474.64	474.64	465.55	447.44
Additions during the year	150.48	0	0	0	0
Repayment during the year	0	0	9.09	18.11	18.11
Net Loan Closing	474.64	474.64	465.55	447.44	429.33
Average Loan	399.4	474.64	470.095	456.495	438.385
Rate of Interest (%)	9.4266%	9.2344%	9.2237%	9.2005%	9.1677%
Interest	37.65	43.83	43.36	42	40.19

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	152.75	194.26	194.26	194.26	194.26
Cumulative Repayment of loan upto previous year	0	0	0	3.64	7.28
Net Loan Opening	152.75	194.26	194.26	190.62	186.98
Additions during the year	41.51	0	0	0	0
Repayment during the year	0	0	3.64	3.64	3.64
Net Loan Closing	194.26	194.26	190.62	186.98	183.34
Average Loan	173.505	194.26	192.44	188.8	185.16
Rate of Interest (%)	9.3888%	9.2608%	9.2496%	9.2320%	9.2137%
Interest	16.29	17.99	17.8	17.43	17.06

