

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 248/TT/2015

Coram:

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

Date of Hearing : 29.04.2016

Date of Order : 30.05.2016

In the matter of:

Determination of transmission tariff for Asset-I: 765 kV D/C Solapur–Aurangabad Transmission Line along with 2 x 240 MVAR Switchable Line Reactor with associated bays at Solapur Sub-station and Asset-II: 2 x 240 MVAR Switchable Line Reactor along with associated bays at Aurangabad Sub-station associated with Inter-Regional system strengthening scheme for Western Region and Northern Region (Part-A) 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.
HONGKONG Bank Building 3rd Floor,
M.G. Road, Fort, Mumbai- 400001
3. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road
Vadodara- 390007



4. Electricity Department
Govt. of Goa,
Vidyut Bhawan, Panaji- 403001
5. Electricity Department
Administration of Daman & Diu,
Daman- 396210
6. Electricity Department
Administration of Dadra Nagar Haveli,
U.T., Silvassa- 396230
7. Chhattisgarh State Electricity Board
P.O Sunder Nagar, Dangania, Raipur
Chhattisgarh-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 M.M. Mondal, PGCIL
 Shri Avinash M.Pavgi, PGCIL
 Shri Rakesh Prasad, PGCIL
 Shri S.S. Raju, PGCIL
 Shri Mohd Mohsin, PGCIL
 Shri Pankaj Sharma, PGCIL

For Respondent: None

ORDER

This petition has been filed by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of tariff for 765 kV D/C Solapur–Aurangabad Transmission Line along with 2 x 240 MVAR Switchable Line Reactor with associated bays at Solapur Sub-station (hereinafter referred as “**Asset-I**”) and 2



x 240 MVAR Switchable Line Reactor along with associated bays at Aurangabad Sub-station (hereinafter referred as “**Asset-II**”) associated with Inter-Regional system strengthening scheme for Western Region and Northern Region (Part-A) for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period starting from COD to 31.3.2019.

2. The respondents are distribution licensees, electricity departments and centralised power procurement companies who are procuring transmission service from the petitioner, mainly beneficiaries of the 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/Investment/ Solapur dated 31.10.2013 with an estimated cost of ₹131590 lakh including Interest during Construction of ₹7942 lakh, at 2nd quarter, 2013, price level. The approved apportioned cost of the Asset is ₹121923.47 lakh.

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

Transmission Line

(i) Aurangabad-Solapur 765 kV D/C Line.

Sub-station

i. Bays extensions at 765 kV Solapur and Aurangabad Sub-stations.



Reactive Compensation

- i. 240 MVAR, 765 kV Switchable line reactor with 950 Ohms NGR on both ends and both circuits of Aurangabad–Solapur 765 kV D/C line.
- (c) Initially, the petitioner submitted that the COD for Asset-I was achieved on 7.10.2015 and the COD of Asset-II is anticipated to be achieved on 15.3.2016. The petitioner has subsequently submitted that the commissioning of Asset-II is delayed and is now anticipated to be commissioned in October 2016. The Commission directed the petitioner to file a separate petition for Asset-II. The petitioner, vide its affidavit dated 26.5.2016, has complied the same stating that the separate petition will be filed for Asset-II after commissioning of the assets. Therefore, tariff of Asset-I is determined from COD of Asset-I to 31.3.2019.
- (d) The petitioner has further submitted that till the time Asset-II, i.e., 2 x 240 MVAR Switchable Line Reactor along with associated bays at Aurangabad Sub-station is not commissioned, 2 nos. 765 kV bays at Aurangabad (along with switchable line reactors-charged as Bus Reactors on 2.8.2014 and 7.8.2014 respectively) for Aurangabad-Padghe 765 kV D/C Transmission line have been used for termination of 765 kV D/C Solapur-Aurangabad Transmission Line at Aurangabad. These bays have been covered under Petition No. 115/TT/2014 filed under Project “System Strengthening in North/West part of Western Region for IPP Projects in Chhattisgarh (Chhattisgarh IPP-E)”.



(e) The petitioner has revised the claim of transmission charges after re-apportionment of the FR cost, vide its affidavit dated 26.5.2016, for the tariff period from actual COD to 31.3.2019 as under:-

(₹ in lakh)				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	2469.38	5657.07	5986.78	6040.31
Interest on Loan	2887.40	6266.49	6139.55	5662.56
Return on Equity	2854.47	6544.74	6930.37	6992.46
Interest on Working Capital	206.50	462.45	477.24	470.20
O&M Expenses	316.67	676.08	698.62	721.85
Total	8734.42	19606.83	20232.56	19887.38

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

(₹ in lakh)				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	98.17	101.41	104.79	108.28
O & M Expenses	54.54	56.34	58.22	60.15
Receivables	3008.50	3267.81	3372.09	3314.56
Total	3161.21	3425.56	3535.10	3482.99
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%
Interest	206.50	462.45	477.24	470.20

4. The Annual Fixed 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 18.12.2015. As stated in para 3, the tariff is not allowed for Asset-II, i.e. 2 x 240 MVAR Switchable Line Reactor along with associated bays at Aurangabad Sub-station as it is anticipated to be commissioned in October, 2016. Accordingly, the AFC granted vide order dated 18.12.2015 to Asset-II is



withdrawn and the petitioner and POSOCO are directed to ensure that it is taken out of the PoC computation.

5. 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 for final tariff was held on 29.4.2016. None of the respondents have filed their reply. The petitioner has submitted additional information vide affidavit dated 26.5.2016. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

Commercial Operation Date (“COD”)

6. The petitioner has claimed the date of the commercial operation as 7.10.2015. 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 a certificate dated 8.1.2016 issued by Western Regional Load Dispatch Centre (WRLDC) in support of the claim of



commercial operation indicating completion of successful trial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations. The petitioner has also submitted the certificate issued by CEA dated 29.9.2015 and approval of energisation of electrical installation (under Regulation 43) by Regional Inspectorial Organization (West) dated 29.9.2015. We have therefore considered the commercial operation date (COD) of the transmission asset as 7.10.2015.

8. Accordingly, the tariff has been worked out from COD to 31.3.2019 in accordance with the 2014 Tariff Regulations as discussed in subsequent paragraphs.

Capital Cost

9. The petitioner has claimed capital cost of ₹92396.07 lakh as on COD. The capital cost as on COD also includes the cost of IDC, IEDC and initial spares.

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) capitalized 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.”

11. 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 as per auditor’s certificate for the instant asset covered in the petition as submitted by the petitioner for Asset-I are as under:-

Approved Apportioned Cost	Capital cost as on COD	Additional capitalization			Total Additional Capitalization	Total estimated completion cost
		2015-16	2016-17	2017-18		
121923.47	92396.07	9552.28	10603.98	2035.08	22191.34	114587.41

(₹ in lakh)

Time over-run

12. As per the investment approval, the commissioning schedule of the project is 36 months from the date of investment approval. The investment approval was accorded on 23.10.2013 and accordingly, the schedule date of commercial



operation works out to 23.10.2016. The transmission asset was commissioned on 7.10.2015. Hence, the assets have been commissioned within time limit.

Cost Over-run

13. There is no cost over-run for the said asset since the estimated completion cost of ₹114587.41 lakh is within the approved apportioned cost of ₹121923.47 lakh.

Initial spares:

14. 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%”

15. The petitioner has claimed initial spares of ₹645.88 lakh and ₹240.23 lakh for transmission line and transmission sub-station (Greenfield) of the asset respectively. Initial spares claimed for transmission line and sub-station are within the ceiling limit specified in the 2014 Tariff Regulations. The initial spares claimed and allowed are as shown below:-



(₹ in lakh)

Description	Plant & Machinery Cost as on cut-off date based on Auditor's Certificate (a)	Initial spares claimed (b)	Ceiling limit (%) as per Regulation 13 of the 2014 Tariff Regulation (c)	Ceiling limit of Initial Spares (d)=*((a-b) *c) / (100-c)%	Excess initial Spares	Initial Spares Allowed Min [(b) & (d)]
Transmission line	104330.44	645.88	1.00%	1047.32	0.00	645.88
Transmission Sub-station (Greenfield)	5641.71	240.23	6.00%	344.78	0.00	240.23

IDC & IEDC

16. The petitioner has submitted the details of accrued IDC which is expected to be discharged during 2015-16. The petitioner also clarified that entire IEDC has been discharged as on COD for the said asset. The accrued IDC (yet to be discharged) as on COD has been adjusted from the capital cost as on COD and the same has been considered as a part of additional capitalization in addition to the additional capitalization submitted in the Auditor Certificate dated 25.5.2016 as follows:-

Particulars	(₹ in lakh)
Capital cost as on COD as per Auditor's Certificate	92396.07
Less: Accrual IDC discharged during 2016-17	1001.06
Less: Excess Initial spares	0.00
Capital Cost considered as on COD	91395.01

Additional Capital Expenditure

17. The petitioner has proposed additional capitalization of ₹9552.28 lakh, ₹10603.98 and ₹2035.08 lakh for the year 2015-16, 2016-17 and 2017-18



respectively towards balance and retention payment under Regulation 14(1) of 2014 Tariff Regulations.

18. Clause 1, 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:

.....

- (i) Undischarged liabilities recognized 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 of law; and
- (v) Change in law or compliance of any existing law;

19. The petitioner has claimed additional capitalization including the IDC to be discharged during 2015-16, 2016-17 and 2017-18. It is observed that total estimated completion cost as on 31.3.2019 including additional capitalization for 2015-16, 2016-17 and 2017-18 is within the approved apportioned cost. The additional capitalization is towards the balance and retention payment for the work within the original scope of work.

20. 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:”



21. The cut-off date for the asset works out to be 31.3.2018. The additional capitalization claimed by the petitioner is within the cut-off date and original scope of work in line with clause (1) of Regulation 14 of the 2014 Tariff Regulations. The additional capitalization for 2015-16, 2016-17 and 2017-18 is allowed under clause (1) of Regulation 14 of the 2014 Tariff Regulations. The details of additional capitalization allowed is as follows:-

(₹ in lakh)

Cost as per Investment Approval is ₹121923.47 lakh						
Asset	Capital cost as on COD	Additional capitalisation projected			Total additional capitalization	Total completion cost as on 31.3.2019
		2015-16	2016-17	2017-18		
As claimed	91395.01	10533.34	10603.98	2035.08	23192.40	114587.41
Approved in this order	91395.01	10533.34	10603.98	2035.08	23192.40	114587.41

Debt:Equity Ratio

22. 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:

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

23. The petitioner has considered debt:equity ratio as 70:30 as on COD and for additional capitalisation post COD. We have considered debt:equity ratio of



70:30 as on COD and for additional capitalization during 2015-16, 2016-17 and 2017-18. 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:-

(₹ in lakh)

Asset	As on COD		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	63976.51	70.00	16234.68	70.00%	80211.19	70.00
Equity	27418.50	30.00	6957.72	30.00%	34376.22	30.00
Total	91395.01	100.00	23192.40	100.00%	114587.41	100.00

Interest on Loan (“IOL”)

24. 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.”

25. We have considered the weighted average rate of IOL on the basis of actual loans. 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 2015-19 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 2015-19 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:-

Particulars	(₹ in lakh)			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	63976.51	71363.85	78786.63	80211.19
Cumulative Repayment up to previous year	0.00	2468.01	8125.08	14111.86
Net Loan-Opening	63976.51	68895.84	70661.55	66099.33
Additions during the year	7387.34	7422.79	1424.56	0.00
Repayment during the year	2468.01	5657.07	5986.78	6040.31
Net Loan-Closing	68895.84	70661.55	66099.33	60059.02
Average Loan	66436.17	69778.69	68380.44	63079.17
Rate of Interest (%)	8.9820%	8.9807%	8.9787%	8.9771%
Interest	2885.83	6266.62	6139.65	5662.69

Return on Equity("ROE")

26. 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:

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 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

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.”

27. The petitioner has submitted that RoE has been calculated at the rate of 20.243 % after grossing up the RoE with MAT rate of 20.961% based on the rate prescribed as per illustration under Regulation 25(2)(i) of the 2014 Tariff Regulations. The petitioner further claimed additional ROE of 0.5% for Asset-I as the same has been commissioned within CERC time line of 40 months. Further, WRPC certificate for claiming additional ROE under Regulation 24(2)(iii) of 2014 Tariff Regulation has been submitted by the petitioner vide affidavit dated 12.4.2016. 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 2015-19 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.

28. 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.

29. The petitioner has claimed additional RoE of 0.5% for commissioning the instant line within the timeline specified in the 2014 Tariff Regulations. It is observed that part of the project i.e., 2 x 240 MVar switchable Line Reactors is yet to be commissioned. As per Regulation 24(2) of the 2014 Tariff Regulations, additional RoE is to be allowed only if the project as a whole has been commissioned within the timeline specified in Appendix-I of the 2014 Tariff Regulations, but with an exception vide Regulation 24(2)(iii) which specifies that it can be considered in a case wherein it has been certified by RPC/NPC that the element of a project completed within the time specified will benefit the system operation in the regional/national grid. However, the certificate submitted by the petitioner does not clearly state that the element will benefit the system and further the entire project is yet to achieve COD and hence we are not inclined to allow the petitioner's claim for additional RoE.

30. 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 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. The grossed up ROE considered for computation of tariff is 19.610%. The ROE allowed for the instant transmission asset is given below:-

(₹ in lakh)				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	27418.50	30584.51	33765.70	34376.22
Additional Capitalization	3166.00	3181.19	610.52	0.00
Closing Equity	30584.51	33765.70	34376.22	34376.22
Average Equity	29001.50	32175.10	34070.96	34376.22
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
Tax rate for the year (%)	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	2750.36	6309.54	6681.32	6741.18

Depreciation

31. 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.”

32. 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”

33. The petitioner has claimed depreciation considering capital expenditure of ₹91395.01 lakh as on COD with additional capitalization of ₹10553.34 lakh, ₹10603.98 lakh and ₹2035.08 lakh for 2015-16, 2016-17 and 2017-18 respectively.

34. We have considered the submissions of the petitioner and have computed depreciation considering capital expenditure as on COD and additional capitalization for 2015-16, 2016-17 and 2017-18. The weighted average useful



life of the asset has been considered as 35 years for the asset in accordance with the above regulation. The details of the depreciation allowed for the asset is given hereunder:-

(₹ in lakh)				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross block	91395.01	101948.35	112552.33	114587.41
Additional Capitalization	10553.34	10603.98	2035.08	0.00
Closing Gross block	101948.35	112552.33	114587.41	114587.41
Average Gross block	96671.68	107250.34	113569.87	114587.41
Rate of Depreciation (%)	5.279	5.275	5.271	5.271
Depreciable Value	87004.51	96525.31	102212.88	103128.67
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	35	34	33	32
Remaining Depreciable Value	87004.51	94057.30	94087.80	89016.81
Depreciation	2468.01	5657.07	5986.78	6040.31

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

35. The petitioner has computed normative O&M Expenses as per Regulation 29(4)(a) of the 2014 Tariff Regulations. We have worked out the O&M expenses as per Regulation 29(4)(a) of the 2014 Tariff Regulations and approved as given hereunder:-

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Norm (₹ lakh/km)				
Double Circuit (Bundled Conductor with four sub conductors)	1.097	1.133	1.171	1.21
Line (km)				
Line Length	278.55	278.55	278.55	278.55
Norm (₹ lakh/bay)				
765 kV Bay	87.22	90.12	93.11	96.20
Number of bay				



Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
765 kV bays	4	4	4	4
Total O&M Expense (line & bay) (₹ in lakh)	316.50	676.08	698.62	721.85

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 in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on Working Capital (“IWC”)

38. As per the 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).

39. The interest on working capital allowed for the asset is shown in the table below:-

(₹ in lakh)				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	47.47	101.41	104.79	108.28
O & M expenses	26.37	56.34	58.22	60.15
Receivables	1437.46	3227.72	3329.65	3271.74
Total	1511.30	3385.48	3492.66	3440.17
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	204.03	457.04	471.51	464.42

Annual Transmission Charges

40. The detailed computation of the various components of the annual fixed charges for the asset for the tariff period 2015-19 is summarised below:-

(₹ in lakh)				
Asset-I	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	91395.01	101948.35	112552.33	114587.41
Additional Capitalisation	10553.34	10603.98	2035.08	0.00
Closing Gross Block	101948.35	112552.33	114587.41	114587.41
Average Gross Block	96671.68	107250.34	113569.87	114587.41
Rate of Depreciation	5.279	5.275	5.271	5.271
Depreciable Value	87004.51	96525.31	102212.88	103128.67



Asset-I	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	35	34	33	32
Remaining Depreciable Value	87004.51	94057.30	94087.80	89016.81
Depreciation	2468.01	5657.07	5986.78	6040.31
Interest on Loan				
Gross Normative Loan	63976.51	71363.85	78786.63	80211.19
Cumulative Repayment upto Previous Year	0.00	2468.01	8125.08	14111.86
Net Loan-Opening	63976.51	68895.84	70661.55	66099.33
Additions	7387.34	7422.79	1424.56	0.00
Repayment during the year	2468.01	5657.07	5986.78	6040.31
Net Loan-Closing	68895.84	70661.55	66099.33	60059.02
Average Loan	66436.17	69778.69	68380.44	63079.17
Weighted Average Rate of Interest on Loan (%)	8.982	8.981	8.979	8.977
Interest	2885.83	6266.62	6139.65	5662.69
Return on Equity				
Opening Equity	27418.50	30584.51	33765.70	34376.22
Additions	3166.00	3181.19	610.52	0.00
Closing Equity	30584.51	33765.70	34376.22	34376.22
Average Equity	29001.50	32175.10	34070.96	34376.22
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	2750.36	6309.54	6681.32	6741.18
Interest on Working Capital				
Maintenance Spares	47.47	101.41	104.79	108.28
O & M expenses	26.37	56.34	58.22	60.15



Asset-I	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Receivables	1437.46	3227.72	3329.65	3271.74
Total	1511.30	3385.48	3492.66	3440.17
Interest	204.03	457.04	471.51	464.42
Annual Transmission Charges				
Depreciation	2468.01	5657.07	5986.78	6040.31
Interest on Loan	2885.83	6266.62	6139.65	5662.69
Return on Equity	2750.36	6309.54	6681.32	6741.18
Interest on Working Capital	204.03	457.04	471.51	464.42
O & M Expenses	316.50	676.08	698.62	721.85
Total	8624.73	19366.34	19977.87	19630.45

Filing Fee and Publication Expenses

41. 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

42. 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

43. 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

44. 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.

45. This order disposes of Petition No. 248/TT/2015.

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

Sd/-
(A.S. Bakshi)
Member



ANNEXURE I**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2015-19****(₹ in lakh)**

Asset-I	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.03.2012)-Loan-8-	9.55	2800.00	0.00	2800.00
BOND - XLIV-Loan-1-	8.70	350.82	0.00	350.82
SBI (2014-15)-ADDCAP FOR 2015-2016 Add Cap 3-	9.55	0.00	3700.00	3700.00
SBI (2014-15)-Loan 11-	9.55	1448.00	0.00	1448.00
SBI (2014-15)-Loan 7-	9.55	6500.00	0.00	6500.00
SBI (2014-15)-Loan 9-	9.55	6000.00	0.00	6000.00
SBI (2014-15)-Loan III-	9.55	1783.00	0.00	1783.00
BOND XLVI -Loan-2-	9.30	13069.00	0.00	13069.00
Bond XLVII-Loan-3-	8.93	10193.72	0.00	10193.72
Bond XLVII-Loan-4-	8.20	4493.85	0.00	4493.85
BOND XLIX-Loan 5-	8.15	1692.19	0.00	1692.19
BOND L-Loan 6-	8.40	13731.27	0.00	13731.27
BOND LI-ADDCAP FOR 2015-2016 Add Cap 1-	8.40	0.00	2986.60	2986.60
BOND LI-ADDCAP FOR 2015-2016 Add Cap 2-	8.40	0.00	700.74	700.74
BOND LI-Loan 10-	8.40	1914.66	0.00	1914.66
Total		63976.51	7387.34	71363.85



**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2015-19**

(₹ in lakh)

Asset	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	63976.51	71363.85	71363.85	71363.85
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	254.55	509.10
Net Loans Opening	63976.51	71363.85	71109.30	70854.75
Add: Drawl(s) during the year	7387.34	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	254.55	254.55	1220.97
Net Closing Loan	71363.85	71109.30	70854.75	69633.78
Average Net Loan	67670.18	71236.58	70982.03	70244.27
Rate of Interest on Loan (%)	8.9820%	8.9807%	8.9787%	8.9771%
Interest on Loan	6078.16	6397.55	6373.24	6305.91

