

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 415/TT/2014**

**Coram:**

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

**Date of Hearing : 06.04.2016**

**Date of Order : 30.05.2016**

**In the matter of:**

Determination of transmission tariff for Asset I- 400kV D/C Solapur (STPP) - Solapur (PG) T/L along with bay extension at Solapur (PG) S/S & Asset II - Extension of 400/220kV Solapur sub-station - Augmentation of Substation by 1 x 315 MVA (3rd) Transformer (by Shifting of 500 MVA Transformer from Wardha to Solapur) under "Transmission system for Solapur STPP (2x660MW)" 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 Limited,  
Shakti Bhawan, Rampur,  
Jabalpur- 482008
2. Maharashtra State Electricity Distribution Company Limited,  
Prakshgad, 4th Floor,  
Andheri(East), Mumbai-400052
3. Gujarat Urja Vikas Nigam Limited,  
Sardar Patel Vidhyut Bhawan,  
Race Course Road, Vadodara- 390007



4. Electricity Department, Government of Goa,  
Vidhyut Bhawan, Panaji, Near Mandvi Hotel,  
GOA- 403001
5. Electricity Department,  
Administration of Daman and 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 Audhyogik Kendra,  
Vikas Nigam (Indore) Limited, 3/54, Press Complex,  
Agra- Bombay Road, Indore- 452008

....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. Venkatasan, PGCIL  
                              Shri Pankaj Sharma, PGCIL  
                              Shri A. M. Pavgi, PGCIL  
                              Shri Mohd. Mohsin, PGCIL  
                              Shri PiyushAwasthi, PGCIL

For Respondent:        None



## ORDER

The present petition has been filed by Power Grid Corporation of India Ltd. ("the petitioner") for 400 kV D/C Solapur (STPP) - Solapur (PG) Transmission line along with bay extension at Solapur (PG) Sub-station (referred as "**Asset 1**"); and Extension of 400/220kV Solapur Sub-station - Augmentation of Sub-station by 1 x 315 MVA (3rd) Transformer (by Shifting of 500 MVA Transformer from Wardha to Solapur) (referred as "**Asset 2**") under "Transmission system for Solapur STPP (2x660MW)" 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 date of commercial operation to 31.3.2019 for the subject assets.

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 approvals 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 ₹6332 lakh including IDC of ₹318 lakh based on June 2013 price level. The total approved apportioned cost for the subject Asset 1 and Asset 2 is ₹4850.89 lakh and ₹1480.85 lakh respectively.



(b) The scope of works under “Transmission System for Solapur STPP 2X660MW” in Western Region is as follows:-

**Transmission line**

- (i) Solapur (STPP) – Solapur (PG) 400 kV D/C (Quad); line -12 Kms. .

**Substations:**

- (i) Extension of 400/220 kV Solapur substation – Augmentation of substation by 1X315 MVA (3<sup>rd</sup>) .

(c) The petitioner has submitted revised tariff forms based on actual COD and claimed the transmission charges vide its petition dated 20.5.2016 as under:-

(₹in lakh)

<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	182.22	220.57	235.28	235.70
Interest on Loan	211.61	238.83	236.84	216.73
Return on Equity	201.57	245.90	263.26	264.00
Interest on Working Capital	21.25	24.05	25.00	24.83
O&M Expenses	136.09	141.40	146.10	150.94
<b>Total</b>	<b>752.72</b>	<b>870.75</b>	<b>906.48</b>	<b>892.20</b>

**Asset 2**

(₹in lakh)

<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	14.61	57.16	70.05	70.05
Interest on Loan	18.35	68.87	79.32	72.80
Return on Equity	16.39	64.83	79.66	79.66
Interest on Working Capital	5.55	15.42	16.66	16.89
O&M Expenses	79.93	199.55	206.16	213.01
<b>Total</b>	<b>134.83</b>	<b>405.83</b>	<b>451.85</b>	<b>452.41</b>



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

(₹in lakh)

<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	11.40	11.78	12.18	12.58
Maintenance Spares	20.53	21.21	21.92	22.64
Receivables	126.36	145.12	151.08	148.70
<b>Total</b>	<b>158.29</b>	<b>178.12</b>	<b>185.17</b>	<b>183.92</b>
Rate of Interest (%)	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>21.25</b>	<b>24.05</b>	<b>25.00</b>	<b>24.83</b>

(₹in lakh)

<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	16.09	16.63	17.18	17.75
Maintenance Spares	28.97	29.93	30.92	31.95
Receivables	54.30	67.64	75.31	75.40
<b>Total</b>	<b>99.36</b>	<b>114.20</b>	<b>123.41</b>	<b>125.10</b>
Rate of Interest (%)	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>5.55</b>	<b>15.42</b>	<b>16.66</b>	<b>16.89</b>

4. The AFC for the instant assets was allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges vide order dated 26.09.2014 based on anticipated COD. The petitioner has submitted the tariff forms along with the Auditor's certificates for actual COD in additional submission vide affidavit dated 25.5.2016 and the same has been considered for the purpose of computation of tariff.

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"). Having heard the representatives of the



petitioner and respondents and perused the material on record, we proceed to dispose of the petition.

### **Commercial Operation Date (“COD”)**

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, vide affidavit dated 25.6.2016, has submitted the actual date of the commercial operation as 3.4.2015 and 2.11.2015 for Asset 1 and Asset 2 respectively. The petitioner has also submitted the letter declaring COD and the RLDC trial run certificate dated 25.5.2015 (for Asset 1) and 30.12.2015 (for Asset 2) in support of claim of commercial operation. Accordingly, the commercial operation date considered for the instant assets is 3.4.2015, and 2.11.2015 for Asset 1 and Asset 2 respectively. The tariff is worked out for the instant assets from the COD to 31.3.2019



## Capital Cost

8. The petitioner has claimed capital cost of ₹3085.78 lakh for Asset 1, ₹512.64 for Asset 2 as on COD as per Auditor's certificates dated 19.5.2016 for Asset 1 and Asset 2. In the revised tariff forms and auditor's certificates, submitted vide affidavit dated 25.5.2016, the petitioner has claimed the capital cost as below:

(₹ in lakh)

Assets	Approved apportioned cost as per FR	Capital cost as on COD	Additional capital expenditure				Estimated completion cost as on 31.3.2019
			2015-16	2016-17	2017-18	Total	
Asset 1	4850.89	3085.78	867.59	562.11	25.00	1454.70	4540.48
Asset 2	1480.85	512.64	352.03	495.96	0.00	847.99	1360.64

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. The Capital Cost claimed by the petitioner is considered for the purpose of tariff subjected to prudence check as discussed in subsequent paragraphs.

### **Time Overrun**

11. As per the Investment approval the scheduled COD was 31.10.2015 for the instant assets. The petitioner has claimed the date of the commercial operation as 3.4.2015 and 2.11.2015 for Asset 1 and Asset 2 respectively. Hence, we have considered there is no time overrun in commissioning of the instant assets.

### **Cost Overrun**

12. As per the Investment approval the apportioned approved cost of the transmission asset was ₹5040.89 lakh and ₹1290.85 lakh for Asset 1 and 2 respectively, against which the estimated completion cost is ₹4540.48 lakh and ₹1360.64 lakh for Asset 1 and 2 respectively as per Auditor's certificate submitted by the petitioner vide affidavit dated 25.5.2016. The petitioner has





submitted that apportionment of FR cost has been revised after completion of the entire project and based on revised apportionment, there is no cost-overrun in the assets vide affidavit dated 25.5.2016. It is observed that as per revised submission of the petitioner the estimated completion cost for both the assets are within the apportioned approved cost. Hence there is no cost overrun.

### **IDC and IEDC**

13. The petitioner vide Auditor's certificate dated 19.5.2016 has submitted IDC and IEDC up to COD on accrual basis is ₹32.00 lakh and ₹23.00 lakh for Asset 1, ₹29.00 lakh and ₹63.39 lakh for Asset 2 respectively as shown below:

( in lakh)		
<b>Asset</b>	<b>IEDC up to COD</b>	<b>IDC up to COD</b>
Asset 1	23.00	32.00
Asset 2	63.39	29.00

14. Further, the petitioner has submitted that entire IEDC has been discharged up to COD. The IDC discharged on cash basis is as below:

(₹ in lakh)			
<b>Asset</b>	<b>IDC discharged up to COD</b>	<b>IDC discharged during 2015-16</b>	<b>IDC discharged during 2016-17</b>
Asset 1	0.00	32.00	0.00
Asset 2	23.36	0.04	5.60

15. For determination of tariff for the 2014-19 tariff period for the instant transmission assets we have considered the capital cost as on COD after adjusting the IDC and IEDC discharged on cash basis.



16. Based on the above submissions of the petitioner, IDC is being capitalised up to COD for instant assets and IDC discharged during 2015-16 and 2016-17 has been added to the additional capital expenditure during 2015-16 and 2016-17. Capital Cost after adjustment of IDC is as follows:-

(₹ in lakh)

Asset	Capital Cost as on COD after adjustment of IDC	Additional Capital Expenditure after adjustment of IDC	
		FY 2015-16	FY 2016-17
Asset 1	3053.78	899.59	562.11
Asset 2	507.00	352.07	501.56

### Initial Spares

17. The petitioner has claimed initial spares of ₹10.61 lakh and ₹40.27 lakh pertaining to Sub-station for Asset 1 and 2 respectively, initial spares of ₹73.16 lakh with regard to transmission line for Asset 1 has also been claimed up to the cut-off date of 31.3.2018. The Commission has computed the allowable initial spares based on the norms in accordance with clause 13 of the Tariff Regulations, as below:

(₹ in lakh)

Asset 1		
Particulars (As per Auditor's Certificate)	Sub-station	Transmission Line
Capital Cost up to cut-off date (excluding IDC, IEDC and land and cost of civil works)	967.58	3253.88
Initial spares claimed	10.61	73.16
Norms (%)	6.00%	1.00%
Initial spares as per norms	61.08	32.13
<b>Excess initial spares</b>	0.00	41.03



(₹ in lakh)

<b>Asset 2</b>		
<b>Particulars (As per Auditor's Certificate)</b>	<b>Sub-station</b>	<b>Transmission Line</b>
Capital Cost up to cut-off date (excluding IDC, IEDC and land and cost of civil works)	1175.34	-
Initial spares claimed	40.27	-
Norms (%)	6.00	-
Initial spares as per norms	72.45	-
<b>Excess initial spares</b>	<b>0.00</b>	<b>-</b>

18. Thus, the initial spares claimed by the petitioner for Asset 1 with regard to Transmission line are in excess by ₹41.03 lakh. Hence, the same is being adjusted in the capital cost of Asset 1. Initial spares for Asset 2 are within the normative limits in accordance with clause 13 of the Tariff Regulations. Thus, the same is allowed for computation of tariff. The capital cost as on COD considered for the purpose of computation of tariff as follows:-

(₹ in lakh)

<b>Particulars</b>	<b>Asset 1</b>	<b>Asset 2</b>
Capital cost as on COD (cash basis)	3085.78	512.64
IDC and IEDC adjusted	32.00	5.64
Excess initial spares	41.03	0.00
Capital cost as on COD considered for tariff determination	<b>3012.75</b>	<b>507.00</b>

### **Additional Capital Expenditure**

19. 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 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;
- (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.”

20. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines

“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 Asset 1 and Asset 2 is 31.3.2019 respectively. The petitioner has claimed an estimated additional capital expenditure of ₹1454.70 lakh and ₹847.99 lakh for Asset 1 and 2 from COD to 31.3.2019 on account of balance and retention payments, covered under Regulation 14(1) of Tariff Regulations’ 2014. Thus the additional capital expenditure allowed for the 2014-19 tariff period is as follows:

(₹in lakh)

Asset	Apportione d Approve d Cost as per FR	Expendi ture up to COD	Estimated Additional capital expenditure				Total completion cost
			FY 2015- 16	FY 2016-17	FY 2017- 18	Total	
Asset 1	4850.89	3012.75	899.59	562.11	25.00	1486.70	4499.45
Asset 2	1480.85	507.00	352.07	501.56	0.00	853.63	1360.63

### **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 70.73:29.27 for Asset 1 and 70.78:29.22 for Asset 2 as on COD. We have considered debt: equity ratio as per the petitioner submission as equity is within the norms as on COD and 70:30 for additional capitalization during 2014-15, 2015-16 and 2016-17 for instant assets. The details of the debt: equity as on the date of COD considered for the purpose of tariff computation for the 2014-19 tariff period are as follows:-

(₹ in lakh)

Asset 1						
	As on COD		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	2131.02	70.73	1040.69	70.00	3171.71	70.49
Equity	881.73	29.27	446.01	30.00	1327.74	29.51
<b>Total</b>	<b>3012.75</b>	<b>100.00</b>	<b>1486.70</b>	<b>100.00</b>	<b>4499.45</b>	<b>100.00</b>

(₹ in lakh)

Asset 2						
	As on COD		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	358.84	70.78	597.54	70.00	956.38	70.29
Equity	148.16	29.22	256.09	30.00	404.25	29.71
<b>Total</b>	<b>507.00</b>	<b>100.00</b>	<b>853.63</b>	<b>100.00</b>	<b>1,360.63</b>	<b>100.00</b>



### **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 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 petitioner has also prayed that they will approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase. 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)

<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Interest on Loan</b>				
Gross Normative Loan	2131.02	2760.73	3154.21	3171.71
Cumulative Repayments upto Previous Year	0.00	180.57	398.98	632.10
Net Loan-Opening	2131.02	2580.16	2755.23	2539.61
Additions	629.71	393.48	17.50	0.00
Repayment during the year	180.57	218.41	233.12	233.53
Net Loan-Closing	2580.16	2755.23	2539.61	2306.08
Average Loan	2355.59	2667.70	2647.42	2422.85
Weighted Average Rate of Interest on Loan (%)	8.9268	8.8651	8.8651	8.8868
Interest on Loan	209.70	236.49	234.70	215.31

(₹ in lakh)

<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Normative Loan	358.84	605.29	956.38	956.38
Cumulative Repayments upto Previous Year	0.00	14.60	71.76	141.81
Net Loan-Opening	358.84	590.69	884.63	814.58
Additions	246.45	351.09	0.00	0.00
Repayment during the year	14.60	57.15	70.05	70.05
Net Loan-Closing	590.69	884.63	814.58	744.53
Average Loan	474.77	737.66	849.60	779.55
Weighted Average Rate of Interest on Loan (%)	9.3370	9.3363	9.3363	9.3377
Interest on Loan	18.34	68.87	79.32	72.79

### **Return on Equity("ROE")**

26. Clause (1)& (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.”

27. The petitioner has claimed ROE at the rate of 20.961% after grossing up the ROE of 15.5% 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.





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. 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. The ROE allowed for the instant transmission assets is given below:-

(₹ in lakh)

<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	881.73	1151.61	1320.24	1327.74
Additions	269.88	168.63	7.50	0.00
Closing Equity	1151.61	1320.24	1327.74	1327.74
Average Equity	1016.67	1235.92	1323.99	1327.74
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	199.79	243.54	260.90	261.64



(₹ in lakh)

Asset 2				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Return on Equity</b>				
Opening Equity	148.16	253.78	404.25	404.25
Additions	105.62	150.47	0.00	0.00
Closing Equity	253.78	404.25	404.25	404.25
Average Equity	200.97	329.01	404.25	404.25
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705
Return on Equity	16.30	64.83	79.66	79.66

### Depreciation

30. 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."



31. 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”

32. The depreciation has been worked out considering the admitted capital cost as on COD and the additional capital expenditure admitted during 2014-19 period. The weighted average useful life for the instant assets has been considered as 25 years in accordance with the above regulation. The detailed calculations for depreciation for the transmission asset are worked out and allowed as follows:-

(₹ in lakh)				
Asset 1				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	3012.75	3912.34	4474.45	4499.45
Additional Capitalisation	899.59	562.11	25.00	-
Closing Gross Block	3912.34	4474.45	4499.45	4499.45
Average Gross Block	3462.54	4193.39	4486.95	4499.45
Rate of Depreciation (%)	5.23%	5.21%	5.20%	5.19%
Depreciable Value	3116.29	3774.05	4038.25	4049.50
Balance useful life of the asset	34.00	33.00	32.00	31.00
Elapsed life	-	1.00	2.00	3.00
Remaining Depreciable Value	3116.29	3375.08	3406.16	3183.87
Depreciation during the year	180.57	218.41	233.12	233.53



Depreciation upto previous year	0.00	180.57	398.98	632.10
Cumulative depreciation	180.57	398.98	632.10	865.63

(₹ in lakh)

Asset 2				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Depreciation</b>				
Opening Gross Block	507.00	859.07	1360.63	1360.63
Additional Capitalisation	352.07	501.56	0.00	0.00
Closing Gross Block	859.07	1360.63	1360.63	1360.63
Average Gross Block	683.04	1109.85	1360.63	1360.63
Rate of Depreciation (%)	5.17	5.15	5.15	5.15
Depreciable Value	614.73	998.87	1224.57	1224.57
Balance useful life of the asset	25.00	24.00	23.00	22.00
Elapsed life	0.00	1.00	2.00	3.00
Remaining Depreciable Value	614.73	927.11	1082.76	1012.71
Depreciation during the year	14.60	57.15	70.05	70.05
Cumulative depreciation	14.60	71.76	141.81	211.86

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

33. The instant petition covers two 400 kV bay for Asset I and one 400 kV bay, 3 220kV bay for Asset II. Regulation 29(4)(a) of the 2014 Tariff Regulations specifies the following norms for O&M Expenses for a 400 kV bay:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Norm (₹lakh/bay)</b>					
400 kV	60.30	62.30	64.37	66.51	68.71
220 kV	42.21	43.61	45.06	46.55	48.1

34. The petitioner has claimed O&M Expenses as specified in sub-clause (a) of clause (4) of Regulation 29 of the 2014 Tariff Regulations. The details of O&M Expenses allowed are given hereunder:-



Asset	(₹ in lakh)			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Asset 1: Two 400 kV bay, 11.17 KM D/C Bundled 4 conductors	136.48	141.40	146.10	150.94
Asset 2: One 400 kV, Three 220 kV bay	79.90	199.55	206.16	213.01

35. 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.

36. 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.

### **Interest on Working Capital (“IWC”)**

37. 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).

38. The interest on working capital allowed is shown in the tables below:-

(₹ in lakh)

<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	11.40	11.78	12.18	12.58
Maintenance Spares	20.53	21.21	21.92	22.64
Receivables	124.61	143.95	149.94	147.69
Total Working Capital	156.55	176.95	184.03	182.90
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest of working capital	21.07	23.89	24.84	24.69

(₹ in lakh)

<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	16.09	16.63	17.18	17.75
Maintenance Spares	28.97	29.93	30.92	31.95
Receivables	54.26	67.64	75.31	75.40
Total Working Capital	99.33	114.20	123.41	125.10
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest of working capital	5.55	15.42	16.66	16.89



## Annual Transmission Charges

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

(₹ in lakh)				
<b>Asset 1</b>				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Depreciation</b>				
Opening Gross Block	3012.75	3912.34	4474.45	4499.45
Additional Capitalisation	899.59	562.11	25.00	0.00
Closing Gross Block	3912.34	4474.45	4499.45	4499.45
Average Gross Block	3462.54	4193.39	4486.95	4499.45
Rate of Depreciation (%)	5.23	5.21	5.20	5.19
Depreciable Value	3116.29	3774.05	4038.25	4049.50
Balance useful life of the asset	34.00	33.00	32.00	31.00
Elapsed life	0.00	0.00	1.00	2.00
Remaining Depreciable Value	3116.29	3375.08	3406.16	3183.87
Depreciation during the year	180.57	218.41	233.12	233.53
Cumulative depreciation	180.57	398.98	632.10	865.63
<b>Interest on Loan</b>				
Gross Normative Loan	2131.02	2760.73	3154.21	3171.71
Cumulative Repayments upto Previous Year	0.00	180.57	398.98	632.10
Net Loan-Opening	2131.02	2580.16	2755.23	2539.61
Additions	629.71	393.48	17.50	0.00
Repayment during the year	180.57	218.41	233.12	233.53
Net Loan-Closing	2580.16	2755.23	2539.61	2306.08
Average Loan	2355.59	2667.70	2647.42	2422.85
Weighted Average Rate of Interest on Loan (%)	8.9268	8.8651	8.8651	8.8868
Interest on Loan	209.70	236.49	234.70	215.31
<b>Return on Equity</b>				
Opening Equity	881.73	1151.61	1320.24	1327.74
Additions	269.88	168.63	7.50	0.00
Closing Equity	1151.61	1320.24	1327.74	1327.74
Average Equity	1016.67	1235.92	1323.99	1327.74
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500





<b>Asset 1</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	199.79	243.54	260.90	261.64
<b>Interest on Working Capital</b>				
O & M Expenses	11.40	11.78	12.18	12.58
Maintenance Spares	20.53	21.21	21.92	22.64
Receivables	124.61	143.95	149.94	147.69
Total Working Capital	156.55	176.95	184.03	182.90
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest of working capital	21.07	23.89	24.84	24.69
<b>Annual Transmission Charges</b>				
Depreciation	180.57	218.41	233.12	233.53
Interest on Loan	209.70	236.49	234.70	215.31
Return on Equity	199.79	243.54	260.90	261.64
Interest on Working Capital	21.07	23.89	24.84	24.69
O & M Expenses	136.48	141.40	146.10	150.94
<b>Total</b>	<b>747.62</b>	<b>863.73</b>	<b>899.66</b>	<b>886.11</b>

(₹ in lakh)

<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Depreciation</b>				
Opening Gross Block	507.00	859.07	1360.63	1360.63
Additional Capitalisation	352.07	501.56	0.00	0.00
Closing Gross Block	859.07	1360.63	1360.63	1360.63
Average Gross Block	683.04	1109.85	1360.63	1360.63
Rate of Depreciation (%)	5.17	5.15	5.15	5.15
Depreciable Value	614.73	998.87	1224.57	1224.57
Balance useful life of the asset	25.00	24.00	23.00	22.00
Elapsed life	0.00	1.00	2.00	3.00
Remaining Depreciable Value	614.73	927.11	1082.76	1012.71
Depreciation during the year	14.60	57.15	70.05	70.05
Cumulative depreciation (incl. of AAD)	14.60	71.76	141.81	211.86
<b>Interest on Loan</b>				
Gross Normative Loan	358.84	605.29	956.38	956.38



<b>Asset 2</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cumulative Repayments upto Previous Year	0.00	14.60	71.76	141.81
Net Loan-Opening	358.84	590.69	884.63	814.58
Additions	246.45	351.09	0.00	0.00
Repayment during the year	14.60	57.15	70.05	70.05
Net Loan-Closing	590.69	884.63	814.58	744.53
Average Loan	474.77	737.66	849.60	779.55
Weighted Average Rate of Interest on Loan (%)	9.3370	9.3363	9.3363	9.3377
Interest on Loan	18.34	68.87	79.32	72.79
<b>Return on Equity</b>				
Opening Equity	148.16	253.78	404.25	404.25
Additions	105.62	150.47	0.00	0.00
Closing Equity	253.78	404.25	404.25	404.25
Average Equity	200.97	329.01	404.25	404.25
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	21.342	21.342	21.342
Rate of Return on Equity (%)	19.610	19.705	19.705	19.705
Return on Equity	16.30	64.83	79.66	79.66
<b>Interest on Working Capital</b>				
O & M Expenses	16.09	16.63	17.18	17.75
Maintenance Spares	28.97	29.93	30.92	31.95
Receivables	54.26	67.64	75.31	75.40
Total Working Capital	99.33	114.20	123.41	125.10
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest of working capital	5.55	15.42	16.66	16.89
<b>Annual Transmission Charges</b>				
Depreciation	14.60	57.15	70.05	70.05
Interest on Loan	18.34	68.87	79.32	72.79
Return on Equity	16.30	64.83	79.66	79.66
Interest on Working Capital	5.55	15.42	16.66	16.89
O & M Expenses	79.90	199.55	206.16	213.01
<b>Total</b>	<b>134.69</b>	<b>405.83</b>	<b>451.85</b>	<b>452.40</b>



### **Filing Fee and Publication Expenses**

28. 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**

29. 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**

30. 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**

31. 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.

32. This order disposes of Petition No. 415/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	Interst Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
				(Rs in lakh)
SBI (2014-15)-Loan VI-	10.25	518.64	0.00	518.64
BOND XLVI -Loan 1-	9.30	400.00	0.00	400.00
Bond XLVII-Loan 4-	8.93	163.48	0.00	163.48
Bond XLVIII-Loan 2-	8.20	164.00	0.00	164.00
BOND XLIX-Loan 5-	8.15	261.00	0.00	261.00
BOND- LII-ADDCAP FOR 2015-2016 Add Cap 3-	8.32	0.00	257.51	257.51
BOND LI-ADDCAP FOR 2015-2016 Add Cap 1-	8.40	0.00	349.80	349.80
BOND LI-loan 3-	8.40	652.93	0.00	652.93
<b>Total</b>		<b>2160.05</b>	<b>607.31</b>	<b>2767.36</b>

Asset 2				
Particulars	Interst Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
				(Rs in lakh)
SBI (2014-15)-ADDCAP FOR 2015-2016 Add Cap 2-	9.55	0.00	200.00	200.00
SBI (2014-15)-loan 3-	9.55	160.33	0.00	160.33
BOND XLVI -Loan 1-	9.30	127.00	0.00	127.00
Bond XLVII-loan 2-	8.93	71.52	0.00	71.52
BOND II-ADDCAP FOR 2015-2016 Add Cap 1-	8.40	0.00	46.42	46.42
<b>Total</b>		<b>358.85</b>	<b>246.42</b>	<b>605.27</b>



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

(₹ in lakh)

<b>Asset 1</b>				
<b>Particular</b>	<b>FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>	<b>FY 2018-19</b>
Gross Opening Loan	2160.05	2767.36	2767.36	2767.36
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00
<b>Net Loans Opening</b>	<b>2160.05</b>	<b>2767.36</b>	<b>2767.36</b>	<b>2767.36</b>
Add: Draw(s) during the Year	607.31	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	13.62
<b>Net Closing Loan</b>	<b>2767.36</b>	<b>2767.36</b>	<b>2767.36</b>	<b>2753.74</b>
Average Net Loan	2463.71	2767.36	2767.36	2760.55
Rate of Interest on Loan (%)	8.93	8.87	8.87	8.87
<b>Interest on Loan</b>	<b>220.01</b>	<b>245.46</b>	<b>245.46</b>	<b>244.86</b>

(₹ in lakh)

<b>Asset 2</b>				
<b>Particular</b>	<b>FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>	<b>FY 2018-19</b>
Gross Opening Loan	358.85	605.27	605.27	605.27
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00
<b>Net Loans Opening</b>	<b>358.85</b>	<b>605.27</b>	<b>605.27</b>	<b>605.27</b>
Add: Draw(s) during the Year	246.42	0.00	0.00	0.00
Less: Repayments of Loan during the year	0.00	0.00	0.00	5.96
<b>Net Closing Loan</b>	<b>605.27</b>	<b>605.27</b>	<b>605.27</b>	<b>599.31</b>
Average Net Loan	482.06	605.27	605.27	602.29
Rate of Interest on Loan (%)	9.34	9.34	9.34	9.34
<b>Interest on Loan</b>	<b>45.02</b>	<b>56.53</b>	<b>56.53</b>	<b>56.25</b>

