

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 238/TT/2015**

**Coram:**

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

**Date of Hearing : 14.03.2016  
Date of Order : 23.03.2016**

**In the matter of:**

Determination of transmission tariff of **Asset-I:** Addition of 1x160 MVA, 220/132 kV ICT along with associated bays at Ara 220/132 kV Sub-station and **Asset-II:** Addition of 1x500 MVA, 400/220 kV ICT along with associated bays at Muzaffarpur 400/220 kV Sub-station under Eastern Region Strengthening Scheme IX (ERSS IX) in Eastern Region for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 under 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. Bihar State Power (Holding) Company Board,  
Vidyut Bhawan,  
Bailey Road, Patna-800001
2. West Bengal State Electricity Distribution Company Ltd.  
Bidyut Bhawan, Bidhan Nagar, Block DJ, Sector-II,  
Salt Lake City, Calcutta-700091
3. Grid Corporation of Orissa Ltd., Shahid Nagar,  
Bhubaneshwar-751007



4. Damodar Valley Corporation, DVC Tower, Maniktala  
Civic Centre, VIPO Road, Calcutta-700054
5. Power Department, Govt. of Sikkim,  
Gangtok-737101
6. Jharkhand State Electricity Board,  
In front of Main Secretariat,  
Doranda, Ranchi-834002

.....Respondents

The following were present:

For Petitioner : Shri Rakesh Prasad, PGCIL  
Shri Jasbir Singh, PGCIL  
Shri Subhash C.Taneja , PGCIL  
Shri S.S. Raju, PGCIL  
Shri M.M. Mondal, PGCIL  
Shri S.K. Venkatesan, PGCIL

For Respondent: None

### ORDER

The present petition has been preferred by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of tariff for **Asset-I**: Addition of 1x160 MVA, 220/132 kV ICT along with associated bays at Ara 220/132 kV Sub-station and **Asset-II**: Addition of 1x500 MVA, 400/220 kV ICT along with associated bays at Muzaffarpur 400/220 kV Sub-station under Eastern Region Strengthening Scheme IX (ERSS IX) in Eastern Region (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 2.1.2016 for Asset-I and 6.1.2016 for Asset-II to 31.3.2019.



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

3. The petitioner has served the petition to the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of Electricity Act, 2003 ("the Act"). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. None of the respondents have filed any reply to the petition. The hearing in this matter was held on 14.3.2016. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

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

(a) Investment approval to the transmission project was accorded by Board of Directors of the petitioner, vide the Memorandum No. C/CP/ERSS-IX TPS dated 26.2.2014 at an estimated cost of ₹19658 lakh, which included IDC of ₹1065 lakh. The petitioner has built the transmission asset in the Eastern Region and is to put under commercial operation w.e.f 2.1.2016 for Asset-I and 6.1.2016 for Asset-II. The approved apportioned cost is ₹1185.852 lakh for Asset-I and ₹2696.688 lakh for Asset-II.

(b) The scope of work covered under the project is as follows:-

**i) Addition / Replacement of Bus Reactors at 400 kV Sub-stations**

- Installation of 1X125 MVAR Bus reactor at Guzawaka 400 Kv (East) bus



- Installation of 2X125 MVAR Bus reactor at Rengali
  - Installation of 1X125 MVAR Bus reactor at Maithon
  - Installation of 1X125 MVAR Bus reactor in parallel with existing 50 MVAR (3X16.67) Bus Reactor at Biharsharif, using existing Reactor bay.
  - Installation of 1X125 MVAR Bus reactor in parallel with existing 1X50 MVAR (3X16.67 MVAR 1 ph unit) Bus Reactor at Jamshedpur and replacement of existing 1X50 MVAR Bus reactor with 1X125 MVAR Bus reactor.
  - Replacement of existing 1X50 MVAR Bus reactor with 1X125 MVAR Bus reactor at Rourkela
  - Installation of 2X125 MVAR Bus reactor at Durgapur (Parulia). Out 2X125 MVAR Bus Reactor, 1X125 MVAR Bus Reactor would be in parallel with existing 1X50 MVAR Bus reactor, using existing reactor bay.
- ii) Augmentation of Transformation capacity at Maithon, Muzzaffarpur and Ara Substations of POWERGRID**
- Addition of 1X500 MVA, 400/220 kV ICT along with associated bays at Muzaffarpur 400/220 kV substation
  - Addition of 1X160 MVA, 220/132 kV ICT along with associated bays at Ara 220/132 kV substation
  - Replacement of 2X315 MVA, 400/220 kV ICTs with 2X500 MVA, 400/220 kV ICTs at Maithon
  - 2X315, 400/220 kV ICTs, thus released from Maithon, would be utilized as regional spare
- iii) Spare 500 MVA Single Phase unit of 765/400 kV ICT for Eastern region**
- Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern region to be stationed at Gaya sub-station
- iv) Converting 2X 80 MVAR Line Reactors at Gorakhpur**
- Converting 2X 80 MVAR Line Reactors at Gorakhpur end of Barh-II- Gorakhpur 400 kV Quad D/C line to 2X 80 MVAR (switchable) Line Reactors.

(c) The transmission system was scheduled to be commissioned within 24 months from the date of investment approval i.e. 26.2.2014. Therefore, the scheduled date of commissioning (SCOD) of the transmission system works out to 26.2.2016 against which the transmission asset was put



under commercial operation with effect from 2.1.2016 for Asset-I and 6.1.2016 for Asset-II. Thus, there is no time over-run in case of the instant assets.

(d) Provisional tariff for the instant assets was allowed vide order dated 17.12.2015 in Petition No. 238/TT/2015.

### **DETERMINATION OF ANNUAL TRANSMISSION CHARGES FOR 2014-19**

5. The petitioner, vide its affidavit dated 11.3.2016, has claimed the revised transmission charges as under:-

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	8.32	47.96	63.63	66.16
Interest on Loan	9.18	50.69	63.46	60.83
Return on equity	9.32	53.69	71.24	74.08
Interest on Working Capital	1.64	7.77	8.97	9.18
O & M Expenses	18.49	77.24	79.80	82.46
<b>Total</b>	<b>46.95</b>	<b>237.35</b>	<b>287.10</b>	<b>292.71</b>

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	15.45	89.24	106.33	110.25
Interest on Loan	17.05	94.34	105.15	100.42
Return on equity	17.30	99.91	119.05	123.43
Interest on Working Capital	2.53	12.57	13.85	14.14
O & M Expenses	25.05	109.43	113.06	116.81
<b>Total</b>	<b>77.38</b>	<b>405.49</b>	<b>457.44</b>	<b>465.05</b>

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



(₹ in lakh)

Asset-I				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	11.21	11.59	11.97	12.37
O & M Expenses	6.23	6.44	6.65	6.87
Receivables	31.64	39.56	47.85	48.79
Total	49.08	57.59	66.47	68.03
Rate of Interest	13.50	13.50	13.50	13.50
Interest	6.63	7.77	8.97	9.18
<b>Pro-rata Interest</b>	<b>1.64</b>	<b>7.77</b>	<b>8.97</b>	<b>9.18</b>

(₹ in lakh)

Asset-II				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	15.88	16.41	16.96	17.52
O & M Expenses	8.82	9.12	9.42	9.73
Receivables	54.52	67.58	76.24	77.51
Total	79.22	93.11	102.62	104.76
Rate of Interest	13.50	13.50	13.50	13.50
Interest	10.69	12.57	13.85	14.14
<b>Pro-rata Interest</b>	<b>2.53</b>	<b>12.57</b>	<b>13.85</b>	<b>14.14</b>

### **Capital Cost**

7. The petitioner has submitted capital expenditure of ₹ 615.72 lakh and ₹1033.14 lakh as on COD of 1.1.2016 and 6.1.2016 for **Asset-I** and **Asset-II**, respectively. In addition to this, the petitioner has projected additional capitalization of ₹43.58 lakh, ₹497.95 lakh and ₹95.82 lakh for Asset-I and ₹407.56 lakh, ₹ 498.92 lakh and ₹ 148.41 lakh for Asset-II during 2015-16, 2016-17 and 2017-18, respectively, in the tariff period 2014-19. The petitioner has submitted Auditor's Certificate dated 10.3.2016 in support of capital cost incurred up to COD and additional capitalization projected for 2014-19 tariff period.

8. Regulations 9 and 10 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.

...

(6) The following shall be excluded or removed from the capital cost of the existing and new project:

- a) The assets forming part of the project, but not in use;
- b) Decapitalisation of Asset;
- c) In case of hydro generating station any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State government by following a two stage transparent process of bidding; and
- d) the proportionate cost of land which is being used for generating power from generating station based on renewable energy:  
Provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation;

**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.”

### **IDC and IEDC**

9. The petitioner has claimed the IDC and IEDC of ₹7.89 lakh and ₹32.27 lakh upto COD for Asset-I and ₹13.88 lakh and ₹54.14 lakh upto COD for Asset-II. Further, the petitioner, vide its affidavit dated 11.3.016, has submitted the detailed breakup of IDC and IEDC discharged upto COD as follows:-

Particulars	(₹ in lakh)			
	Asset-I		Asset-II	
Statement showing IDC & IEDC	IDC	IEDC	IDC	IEDC
Total IDC/IEDC as per certificate	7.89	32.27	13.88	54.14
IDC/IEDC discharged upto COD	0.00	32.27	0.00	54.14
Accrual IDC/IEDC to be discharged in 2016-17	7.89	0.00	13.88	0.00

10. Considering the accrual IDC to be discharged in 2014-15 and 2015-16, we have considered the capital cost for Asset-I and II as given below:-

Particulars	(₹ in lakh)	
	Asset-1	Asset-II
Capital Cost as on COD as per Auditor's Certificate	623.61	1047.02
Less: Accrual IDC/IEDC to be discharged in 2016-17	7.89	13.88
<b>Capital Cost as on COD (after deducting accrual IDC to be discharged in 2016-17)</b>	<b>615.72</b>	<b>1033.14</b>

11. The capital cost of ₹615.72 lakh and ₹1033.14 lakh as on COD is within the approved apportioned cost of ₹1185.85 lakh and ₹2696.69 lakh for Asset-I and Asset-II, respectively, as mentioned in subsequent paras. Hence, there is no cost over-run for the said asset. Accordingly, we have considered the capital cost





of ₹615.72 lakh and ₹1033.14 lakh for Asset-I and Asset-II, respectively, as on COD for the purpose of tariff computation for 2014-19 tariff period. We have considered the petitioner's submissions and have considered IDC and IEDC on cash basis.

### **Initial Spares**

12. 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:-

“(d) Transmission System	
Transmission line:	1.00%
Transmission sub-station (Green Field):	4.00%
Transmission sub-station (Brown Field):	6.00%”

13. The initial spares of ₹62.13 lakh and ₹109.73 lakh for sub-station claimed by the petitioner for Asset-I and Asset-II, respectively, are within the norms specified in the 2014 Tariff Regulations. The details of the initial spares claimed and allowed are given in the table below:-

(₹ in lakh)						
Description Sub-station (including PLCC)	Cut-off date	Capital cost as on cut-off date	Initial spares claimed	Ceiling limits as per Regulation 8 of the 2009 Tariff Regulation	Initial spares worked out and allowed	Excess initial spares claimed
		(a)	(b)	(c)	(d)= ((a-b)*c)/(100-c)%	(e)=(d)-(b)
<b>Sub-station (Brown Field)</b>						
Asset-I	31.3.2018	1185.85	62.13	6.00%	71.73	0.00
Asset-II	31.3.2018	2088.03	109.73	6.00%	126.27	0.00



Accordingly, the initial spares of ₹62.13 lakh and ₹109.73 lakh for Asset-I and Asset-II as claimed by the petitioner is allowed.

### **Additional Capital Expenditure**

14. The petitioner has projected additional capitalization of ₹43.58 lakh, ₹497.95 lakh and ₹95.82 lakh for **Asset-I** and ₹407.56 lakh, ₹498.92 lakh and ₹148.41 lakh for **Asset-II** in 2015-16, 2016-17 and 2017-18, respectively, towards balance and retention payments under Clause 1 of Regulation 14 of the 2014 Tariff Regulations.

15. Clause 1, sub-clause (i) 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;

16. For **Asset-I**, we have gone through the submissions of petitioner. It is observed that the total capital cost (including additional capital expenditure during tariff period 2014-19) as on 31.3.2018 exceeds the approved apportioned cost of ₹1185.85 lakh. Therefore, we have restricted the capital cost upto cut-off date to approved apportioned cost and have considered the capital cost of ₹615.72 lakh as on COD and additional capital expenditure of ₹43.58 lakh, ₹497.95 lakh and ₹28.60 lakh for **Asset-I** during 2015-16, 2016-17 and 2017-18,



respectively, on provisional basis under Clause 1 of Regulation 14 of the 2014 Tariff Regulations.

17. Further for **Asset-II**, the total capital cost of ₹2088.03 lakh (including additional capital expenditure) as on 31.3.2019 is within the approved apportioned cost of ₹2696.69 lakh. Therefore, we have considered the capital cost of ₹ 1033.14 lakh as on COD and additional capital expenditure of ₹407.56 lakh, ₹498.92 lakh & ₹148.41 lakh during 2015-16, 2016-17 and 2017-18 respectively, as claimed by the petitioner, on provisional basis under Clause 1 of Regulation 14 of the 2014 Tariff Regulations.

18. The following capital cost and additional capitalization during 2014-19 for Asset-I and Asset-II has been considered subject to prudence check while carrying out the truing up of tariff for 2014-19 period:-

**(₹ in lakh)**

Name of the element	Approved apportioned cost	Expenditure upto COD	Additional Capital Expenditure				Total estimated completion cost
			2015-16 (Pro-rata)	2016-17	2017-18	Total	
Asset-I	1185.85	615.72	43.58	497.95 (=490.06+accru al IDC of 7.89)	28.60	570.13	1185.85
Asset-II	2696.69	1033.14	407.56	498.92 (=485.04+accru al IDC of 13.88)	148.41	1054.89	2088.03

### **Debt : Equity Ratio**

19. Clause 3 of Regulation 19 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.”

20. The petitioner has considered debt:equity ratio as 70:30 both for capital cost as on COD and for additional capitalization during the tariff period 2014-19.

21. We have considered the petitioner’s submission subject to prudence check while carrying out the truing up of tariff for 2014-19 period. The details of the debt:equity considered for the purpose of tariff for the 2014-19 tariff period is as follows:-

Asset-I				
Particulars	Capital Cost as on COD		Estimated Completion cost including additional capitalization	
	Amount ( ₹ in lakh)	(%)	Amount ( ₹ in lakh)	(%)
Debt	431.00	70.00	830.10	70.00
Equity	184.72	30.00	355.75	30.00
<b>Total</b>	<b>615.72</b>	<b>100.00</b>	<b>1185.85</b>	<b>100.00</b>

Asset-II				
Particulars	Capital Cost as on COD		Estimated Completion cost including additional capitalization	
	Amount ( ₹ in lakh)	(%)	Amount ( ₹ in lakh)	(%)
Debt	723.20	70.00	1461.62	70.00
Equity	309.94	30.00	626.41	30.00
<b>Total</b>	<b>1033.14</b>	<b>100.00</b>	<b>2088.03</b>	<b>100.00</b>



## Interest on Loan (“IOL”)

22. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations are reproduced 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. The petitioner has submitted the weighted average rate of interest on loan based on its actual loan portfolio and rate of interest. We have considered the submissions of the petitioner and accordingly calculated the IOL based on actual interest rate submitted by the petitioner, in accordance with Regulation 16 of the 2009 Tariff Regulations. The weighted average rate of IOL have been considered on the basis of rate prevailing as on 1.4.2014. The details of weighted average rate of interest are placed at **Annexure-I** and the IOL has been worked out and allowed as follows:-

**(₹ in lakh)**

Asset-I				
Details of Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	431.00	461.51	810.08	830.10
Cumulative Repayment upto DOCOP/previous year	0.00	8.28	56.23	118.09
Net Loan-Opening	431.00	453.23	753.84	712.00



Additions during the year	30.51	348.57	20.02	0.00
Repayment during the year	8.28	47.96	61.86	62.61
Net Loan-Closing	453.23	753.84	712.00	649.39
Average Loan	442.12	603.54	732.92	680.70
Rate of Interest (%)	8.4000	8.4000	8.4000	8.4000
<b>Interest</b>	<b>9.13</b>	<b>50.70</b>	<b>61.57</b>	<b>57.18</b>

(₹ in lakh)

Asset-II				
Details of Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	723.20	1008.49	1357.73	1461.62
Cumulative Repayment upto DOCO/previous year	0.00	15.35	104.59	210.92
Net Loan-Opening	723.20	993.14	1253.15	1250.70
Additions during the year	285.29	349.24	103.89	0.00
Repayment during the year	15.35	89.24	106.33	110.25
Net Loan-Closing	993.14	1253.15	1250.70	1140.46
Average Loan	858.17	1123.15	1251.93	1195.58
Rate of Interest (%)	8.4000	8.4000	8.4000	8.4000
<b>Interest</b>	<b>16.94</b>	<b>94.34</b>	<b>105.16</b>	<b>100.43</b>

### **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...

Provided that:

i. in case of projects commissioned on or after 1st April, 2014, an additional return of **0.50 %** shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:

ii. the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:



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

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

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. 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. Accordingly, the ROE allowed is given below:-

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	184.72	197.79	347.17	355.75
Addition due to Additional Capitalisation	13.07	149.38	8.58	0.00
Closing Equity	197.79	347.17	355.75	355.75
Average Equity	191.25	272.48	351.46	355.75
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT 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
<b>Return on Equity (Pre Tax)</b>	<b>9.22</b>	<b>53.43</b>	<b>68.92</b>	<b>69.76</b>

(₹ in lakh)

Asset-II				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	309.94	432.21	581.89	626.41
Addition due to Additional Capitalisation	122.27	149.68	44.52	0.00





Asset-II				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Closing Equity	432.21	581.89	626.41	626.41
Average Equity	371.08	507.05	604.15	626.41
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50
MAT 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
<b>Return on Equity (Pre Tax)</b>	<b>17.10</b>	<b>99.43</b>	<b>118.47</b>	<b>122.84</b>

### Depreciation

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

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

.....

(c) AC and DC Sub-station: 25 years

(d) Gas Insulated Sub-station: 25 years

(e) Transmission line (including HVAC & HVDC): 35 years”

29. 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.”

30. The petitioner in its petition has computed depreciation considering capital cost of ₹615.72 lakh and ₹1033.14 lakh as on COD and additional capital expenditure of ₹637.35 lakh and ₹1054.89 lakh in tariff period 2014-19 for Asset-I and Asset-II, respectively.

31. As per Clause 67 of Regulation 3 of the 2014 Tariff Regulations, weighted average value of asset as on COD has been considered to work out the weighted average life of the transmission system as 25 years.

32. We have computed depreciation considering capital cost of ₹615.72 lakh and ₹1033.14 lakh as on COD and additional capital expenditure of ₹ 570.13 lakh and ₹1054.89 lakh in tariff period 2014-19 for Asset-I and Asset-II, respectively. Depreciation is allowed as provided under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation claimed and allowed are given hereunder:-

<b>(₹ in lakh)</b>				
<b>Asset-I</b>				
<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Gross Block	615.72	659.30	1157.25	1185.85
Additional Capitalization	43.58	497.95	28.60	0.00
Closing Gross block	659.30	1157.25	1185.85	1185.85
Average Gross block	637.51	908.28	1171.55	1185.85
Rate of Depreciation (%)	5.280	5.280	5.280	5.280
Depreciable Value	573.76	817.45	1054.40	1067.27
Elapsed Life of the assets at beginning of the year	0	1	2	3



Asset-I				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	573.76	809.17	998.16	949.17
<b>Depreciation</b>	<b>8.28</b>	<b>47.96</b>	<b>61.86</b>	<b>62.61</b>

(₹ in lakh)

Asset-II				
Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	1033.14	1440.70	1939.62	2088.03
Additional Capitalization	407.56	498.92	148.41	0.00
Closing Gross block	1440.70	1939.62	2088.03	2088.03
Average Gross block	1236.92	1690.16	2013.83	2088.03
Rate of Depreciation (%)	5.280	5.280	5.280	5.280
Depreciable Value	1113.23	1521.14	1812.44	1879.23
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	1113.23	1505.80	1707.86	1668.31
<b>Depreciation</b>	<b>15.35</b>	<b>89.24</b>	<b>106.33</b>	<b>110.25</b>

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

33. The petitioner has computed normative O&M Expenses as per sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. Accordingly, the petitioner’s entitlement to O&M expenses has been worked out as given hereunder:-



(₹ in lakh)

Asset-I					
Particulars		2015-16 (pro-rata)	2016-17	2017-18	2018-19
Actual	220 kV Bays (Nos.)	1	1	1	1
	132 kV & below Bays(No.)	1	1	1	1
Norms as per Regulation	220 kV Bays (₹lakh/bay)	43.61	45.06	46.55	48.10
	132 kV & below Bays (₹lakh/bay)	31.15	32.18	33.25	34.36
<b>Total</b>		<b>18.38</b>	<b>77.24</b>	<b>79.80</b>	<b>82.46</b>

(₹ in lakh)

Asset-II					
Particulars		2015-16 (pro-rata)	2016-17	2017-18	2018-19
Actual	400 kV Bays (Nos.)	1	1	1	1
	220 kV Bays (Nos.)	1	1	1	1
Norms as per Regulation	400 kV Bays (₹lakh/bay)	62.30	64.37	66.51	68.71
	220 kV Bays (₹lakh/bay)	43.61	45.06	46.55	48.10
<b>Total</b>		<b>24.89</b>	<b>109.43</b>	<b>113.06</b>	<b>116.81</b>

34. 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 Company 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.



35. 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.

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

**(₹ in lakh)**

Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Asset-I	<b>18.38</b>	<b>77.24</b>	<b>79.80</b>	<b>82.46</b>
Asset-II	<b>24.89</b>	<b>109.43</b>	<b>113.06</b>	<b>116.81</b>

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

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

**“28. Interest on Working Capital**

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

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

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



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

**(₹ in lakh)**

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	2.76	11.59	11.97	12.37
O & M expenses	1.53	6.44	6.65	6.87
Receivables	7.77	39.52	46.83	46.82
Total	12.06	57.54	65.45	66.06
Rate of Interest (%)	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>1.63</b>	<b>7.77</b>	<b>8.84</b>	<b>8.92</b>

**(₹ in lakh)**

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	3.73	16.41	16.96	17.52
O & M expenses	2.07	9.12	9.42	9.73
Receivables	12.80	67.50	76.14	77.41
Total	18.60	93.03	102.52	104.66
Rate of Interest (%)	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>2.51</b>	<b>12.56</b>	<b>13.84</b>	<b>14.13</b>

### **Annual Transmission Charges**

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



(₹ in lakh)

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Gross Block</b>				
Opening Gross Block	615.72	659.30	1157.25	1185.85
Additional Capitalisation	43.58	497.95	28.60	0.00
Closing Gross Block	659.30	1157.25	1185.85	1185.85
Average Gross Block	637.51	908.28	1171.55	1185.85
<b>Depreciation</b>				
Rate of Depreciation	5.280	5.280	5.280	5.280
Depreciable Value	573.76	817.45	1054.40	1067.27
Elapsed Life of the assets at beginning of the year	0.00	1.00	2.00	3.00
Weighted Balance Useful life of the assets	25.00	24.00	23.00	22.00
Remaining Depreciable Value	573.76	809.17	998.16	949.17
Depreciation	8.28	47.96	61.86	62.61
<b>Interest on Loan</b>				
Gross Normative Loan	431.00	461.51	810.08	830.10
Cumulative Repayment upto Previous Year	0.00	8.28	56.23	118.09
Net Loan-Opening	431.00	453.23	753.84	712.00
Additions	30.51	348.57	20.02	0.00
Repayment during the year	8.28	47.96	61.86	62.61
Net Loan-Closing	453.23	753.84	712.00	649.39
Average Loan	442.12	603.54	732.92	680.70
Weighted Average Rate of Interest on Loan (%)	8.4000	8.4000	8.4000	8.4000
Interest	9.13	50.70	61.57	57.18
<b>Return on Equity</b>				
Opening Equity	184.72	197.79	347.17	355.75
Additions	13.07	149.38	8.58	0.00
Closing Equity	197.79	347.17	355.75	355.75
Average Equity	191.25	272.48	351.46	355.75
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50



Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
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)	9.22	53.43	68.92	69.76
<b>Interest on Working Capital</b>				
Maintenance Spares	2.76	11.59	11.97	12.37
O & M expenses	1.53	6.44	6.65	6.87
Receivables	7.77	39.52	46.83	46.82
Total	12.06	57.54	65.45	66.06
Interest	1.63	7.77	8.84	8.92
<b>Annual Transmission Charges</b>				
Depreciation	8.28	47.96	61.86	62.61
Interest on Loan	9.13	50.70	61.57	57.18
Return on Equity	9.22	53.43	68.92	69.76
Interest on Working Capital	1.63	7.77	8.84	8.92
O & M Expenses	18.38	77.24	79.80	82.46
<b>Total</b>	<b>46.64</b>	<b>237.10</b>	<b>280.98</b>	<b>280.93</b>

(₹ in lakh)

Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Gross Block</b>				
Opening Gross Block	1033.14	1440.70	1939.62	2088.03
Additional Capitalisation	407.56	498.92	148.41	0.00
Closing Gross Block	1440.70	1939.62	2088.03	2088.03
Average Gross Block	1236.92	1690.16	2013.83	2088.03
<b>Depreciation</b>				
Rate of Depreciation	5.280	5.280	5.280	5.280
Depreciable Value	1113.23	1521.14	1812.44	1879.23
Elapsed Life of the assets at beginning of the year	0	1	2	3





Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	1113.23	1505.80	1707.86	1668.31
Depreciation	15.35	89.24	106.33	110.25
<b>Interest on Loan</b>				
Gross Normative Loan	723.20	1008.49	1357.73	1461.62
Cumulative Repayment upto Previous Year	0.00	15.35	104.59	210.92
Net Loan-Opening	723.20	993.14	1253.15	1250.70
Additions	285.29	349.24	103.89	0.00
Repayment during the year	15.35	89.24	106.33	110.25
Net Loan-Closing	993.14	1253.15	1250.70	1140.46
Average Loan	858.17	1123.15	1251.93	1195.58
Weighted Average Rate of Interest on Loan (%)	8.4000	8.4000	8.4000	8.4000
Interest	16.94	94.34	105.16	100.43
<b>Return on Equity</b>				
Opening Equity	309.94	432.21	581.89	626.41
Additions	122.27	149.68	44.52	0.00
Closing Equity	432.21	581.89	626.41	626.41
Average Equity	371.08	507.05	604.15	626.41
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
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)	17.10	99.43	118.47	122.84
<b>Interest on Working Capital</b>				
Maintenance Spares	3.73	16.41	16.96	17.52
O & M expenses	2.07	9.12	9.42	9.73
Receivables	12.80	67.50	76.14	77.41
<b>Total</b>	<b>18.60</b>	<b>93.03</b>	<b>102.52</b>	<b>104.66</b>
Interest	2.51	12.56	13.84	14.13



Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Annual Transmission Charges</b>				
Depreciation	15.35	89.24	106.33	110.25
Interest on Loan	16.94	94.34	105.16	100.43
Return on Equity	17.10	99.43	118.47	122.84
Interest on Working Capital	2.51	12.56	13.84	14.13
O & M Expenses	24.89	109.43	113.06	116.81
<b>Total</b>	<b>76.78</b>	<b>405.01</b>	<b>456.87</b>	<b>464.46</b>

### **Filing Fee and the 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 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. 238/TT/2015.

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

Sd/-  
**(A.S. Bakshi)**  
**Member**



**-// ANNEXURE-I //**

**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO**

**(₹ in lakh)**

Asset-I				
Particulars	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
Proposed Loan 2015-16 (8.40%)- COD funding	8.40	649.02	0.00	649.02
<b>Total</b>	<b>8.40</b>	<b>649.02</b>	<b>0.00</b>	<b>649.02</b>

**(₹ in lakh)**

Asset-II				
Particulars	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
Proposed Loan 2015-16 (8.40%)- COD funding	8.40	1110.82	0.00	1110.82
<b>Total</b>	<b>8.40</b>	<b>1110.82</b>	<b>0.00</b>	<b>1110.82</b>

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

**(₹ in lakh)**

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	649.02	649.02	649.02	649.02
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00
Net Loans Opening	649.02	649.02	649.02	649.02
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	0.00	0.00	0.00
Net Closing Loan	649.02	649.02	649.02	649.02
Average Net Loan	649.02	649.02	649.02	649.02
Interest on Loan	54.52	54.52	54.52	54.52
Rate of Interest on Loan (%)	8.4000	8.4000	8.4000	8.4000

**(₹ in lakh)**



Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1110.82	1110.82	1110.82	1110.82
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00
Net Loans Opening	1110.82	1110.82	1110.82	1110.82
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	0.00	0.00	0.00
Net Closing Loan	1110.82	1110.82	1110.82	1110.82
Average Net Loan	1110.82	1110.82	1110.82	1110.82
Interest on Loan	93.31	93.31	93.31	93.31
Rate of Interest on Loan (%)	8.4000	8.4000	8.4000	8.4000

