

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 546/TT/2014**

**Coram:**

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

**Date of Hearing : 20.01.2016  
Date of Order : 29.02.2016**

**In the matter of:**

Truing up of transmission tariff for 2009-14 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 and determination of transmission tariff for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for **Asset I:** LILO of 400kV Rishikesh- Muzaffarnagar Transmission line at Roorkee along with associated bays at Roorkee Sub-station(COD: 1.4.2009), **Asset II:** 315 MVA 400/200 kV ICT-I along with associated bays at Roorkee Sub-station, **Asset III:** 315 MVA 400/220 kV ICT-II along with associated bays at Roorkee Sub-station associated with System Strengthening Scheme in Roorkee in Northern Region 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. Rajasthan Rajya Vidyut Prasaran Nigam Limited  
Vidyut Bhawan, Vidyut Marg,  
Jaipur-302 005
2. Ajmer Vidyut Vitran Nigam Limited  
400 kV GSS Building (Ground Floor), Ajmer Road  
Heerapura, Jaipur



3. Jaipur Vidyut Vitran Nigam Limited  
400 kV GSS Building (Ground Floor),  
Ajmer Road ,Heerapura,  
Jaipur
4. Jodhpur Vidyut Vitran Nigam Limited  
400 kV GSS Building (Ground Floor),  
Ajmer Road, Heerapura,  
Jaipur
5. Himachal Pradesh State Electricity Board,  
Vidyut Bhawan,  
Kumar House Complex Building II  
Shimla-171004
6. Punjab State Power Corporation Limited  
Thermal Shed T1 A, Near 22 Phatak  
Patiala-147001
7. Haryana Power Purchase Centre  
Shakti Bhawan, Sector-6  
Panchkula (Haryana)- 134 109
8. Power Development Department  
Govt. of Jammu & Kashmir  
Mini Secretariat, Jammu
9. Uttar Pradesh Power Corporation Limited  
Shakti Bhawan, 14, Ashok Marg  
Lucknow- 226001
10. Delhi Transco Limited  
Shakti Sadan, Kotla Road  
New Delhi- 110002
11. BSES Yamuna Power Limited  
BSES Bhawan, Nehru Place  
New Delhi
12. BSES Rajdhani Power Limited  
BSES Bhawan, Nehru Place  
New Delhi
13. North Delhi Power Limited  
Power Trading & Load Dispatch Group  
Cennet Building  
Pitampura, New Delhi-110034



14. Chandigarh Administration  
Sector-9, Chandigarh
15. Uttarakhand Power Corporation Limited  
Urja Bhawan, Kanwali Road  
Dehradun
16. North Central Railway  
Allahabad
17. New Delhi Municipal Council  
Palika Kendra, Sansad Marg  
New Delhi-110002

.....**Respondents**

The following were present:-

For Petitioner:                      Shri M.M Mondal, PGCIL  
   Shri S.K.Venkatesan, PGCIL  
   Smt. Sangeeta Edwards, PGCIL  
   Shri Y.K Sehgal, PGCIL  
   Shri Nitish Kumar, PGCIL  
   Shri G.C Dhal, PGCIL  
   Shri Amit Yadav, PGCIL  
   Shri Rakesh Prasad, PGCIL  
   Shri S.S Raju, PGCIL  
   Shri Jasbir Singh, PGCIL  
   Shri Anshul Garg, PGCIL

For Respondent:                      Shri Vinod Kumar Yadav, Rajasthan Discoms

### **ORDER**

The present petition has been filed by Power Grid Corporation of India Ltd. (“the petitioner”) for trueing up of capital expenditure under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations”) based on actual capital expenditure for the period 1.4.2009 to 31.3.2014 and for



determination of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.4.2014 to 31.3.2019 for **Asset I:** LILO of 400kV Rishikesh-Muzaffarnagar Transmission line at Roorkee along with associated bays at Roorkee Sub-station, **Asset II:** 315 MVA 400/200 kV ICT-I along with associated bays at Roorkee Sub-station, **Asset III:** 315 MVA 400/220 kV ICT-II along with associated bays at Roorkee Sub-station associated with System Strengthening Scheme in Roorkee in Northern Region (hereinafter referred as “transmission asset”).

2. The respondents are mostly distribution licensees who are procuring transmission service from the petitioner, mainly beneficiaries of the Northern Region and, transmission licensees, and central power purchase entities of States.

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 the Electricity Act, 2003 (“the Act”). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. The hearing in this matter was held on 20.1.2016. None of the respondents have filed their reply. The petitioner was directed to file certain information vide letter dated 18.1.2016 and Record of Proceedings (ROP) dated 20.1.2016. The petitioner has submitted the information vide affidavit dated 3.2.2016. 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) The investment approval for the transmission assets was accorded by Board of Directors of petitioner's company vide Memorandum dated 26.12.2005, at an estimated cost of ₹10995 lakh, which included IDC of ₹460 lakh (based on 3rd quarter 2005 price level). The approved apportioned cost are ₹2900.79 lakh for Asset-I, ₹4047.19 lakh for Asset-II and ₹4047.19 lakh for Asset-III. The commercial operation of Asset-I is 1.4.2009, Asset-II is 1.4.2009 and Asset-III is 1.4.2010.
- (b) The tariff from 1.4.2009 to 31.3.2014 for Asset-I and Asset-II was allowed vide order dated 1.12.2010, in Petition No.79/2010 and for Combined Asset-II & III vide order dated 16.9.2011 in Petition No.269/2010 for 1.4.2010 to 31.3.2014 period in accordance with the 2009 Tariff Regulations.
- (c) Assets-I and II were commissioned within the timeline specified in the investment approval. The delay of 12 months in the commissioning of Asser-III was condoned.
- (d) The details of the tariff approved in respect of Asset-I, Asset-II and combined Asset-II & III is as under:-

Asset-I

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	95.85	103.16	106.07	106.07	106.07
Interest on Loan	131.72	132.74	126.40	116.36	106.37
Return on Equity	108.29	116.60	119.48	119.48	119.48
Interest on Working Capital	12.31	12.96	13.27	13.40	13.55
O&M Expenses	106.12	112.19	118.61	125.40	132.56
<b>Total</b>	<b>454.29</b>	<b>477.65</b>	<b>483.83</b>	<b>480.71</b>	<b>478.03</b>



## Asset-II

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	151.60	174.45	174.58	174.58	174.58
Interest on Loan	218.50	234.67	218.24	201.73	185.30
Return on Equity	179.68	204.83	204.96	204.96	204.96
Interest on Working Capital	19.58	21.39	21.54	21.72	21.92
O&M Expenses	162.44	171.74	181.57	191.94	202.92
<b>Total</b>	<b>731.81</b>	<b>807.07</b>	<b>800.89</b>	<b>794.93</b>	<b>789.68</b>

## Combined Asset-II &amp; III

(₹ in lakh)

Particulars	2010-11	2011-12	2012-13	2013-14
Depreciation	322.06	335.99	339.44	339.44
Interest on Loan	443.61	430.92	404.00	372.39
Return on Equity	383.32	398.68	402.49	402.49
Interest on Working Capital	39.42	40.69	41.29	41.71
O&M Expenses	343.48	363.14	383.88	405.84
<b>Total</b>	<b>1531.89</b>	<b>1569.42</b>	<b>1571.10</b>	<b>1561.87</b>

- (e) In order dated 1.12.2010 in Petition No.79/2010, tariff was determined for Asset-I and Asset-II for the tariff period 2009-14, considering capital cost of ₹1962.50 lakh and ₹2948.74 lakh respectively, as on COD (1.4.2009). In order dated 16.9.2011, Petition No. 269/2010, the tariff for Combined Asset-II & III for the tariff period 2010-14, was determined considering combined capital cost of ₹7089.05 lakh as on notional COD (1.4.2010).
- (f) The MAT rate applicable as on 2008-09 was considered to arrive at rate of return on equity for the tariff period 2009-14, which is required to be adjusted as per the actual MAT rate applicable for the respective year at the time of truing up of tariff for the 2009-14 tariff period.

## **TRUING UP OF ANNUAL FIXED CHARGES FOR TARIFF PERIOD 2009-14**

5. The truing up of tariff for 2009-14 tariff period has been determined based on actual capital cost and additional capital expenditure during 2009-14 tariff period.

6. Clause (3) of the Regulation 6 of the 2009 Tariff Regulations provides as under:-

“(3) The generating company or the transmission licensee, as the case may be, shall submit for the purpose of truing up, details of capital expenditure and additional capital expenditure incurred for the period from 1.4.2009 to 31.3.2014, duly audited and certified by the auditors”.

7. The petitioner has submitted the information as required under the 2009 Tariff Regulations for truing up of annual fixed charges for 2009-14 tariff period. The tariff for 2009-14 tariff period has been trued up in the subsequent paragraphs.

### **Capital Cost**

8. The petitioner has claimed admitted capital cost of ₹1962.50 lakh, ₹2948.74 lakh and ₹3186.22 lakh for Asset-I, Asset-II and Asset-III respectively as on COD for the purpose of tariff.

9. Clause (1) of Regulation 7 of the 2009 Tariff Regulations provides as follows:

“(1) Capital cost for a project shall include:

(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (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, - up to the date



of commercial operation of the project, as admitted by the Commission, after prudence check;

(b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and

(c) additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.”

10. The petitioner was directed vide Record of Proceedings (ROP) dated 20.1.2016 to clarify as to why there is a cost variation between Asset-II and III when both the assets are similar, i.e. 315 MVA, 400/220 kV ICTs with same approved apportioned cost of ₹4047.19 lakh. The petitioner was further directed to submit the break-up of actual capital expenditure incurred for both the assets along with reasons for variation. The petitioner vide affidavit dated 3.2.2016 submitted the cost details of ICTs as follows:-

(₹ in lakh)

Particulars	Total completion cost	Cost of Civil Works as per Auditor's Certificate	Cost as per Sub-station as per Auditor's certificate submitted in true up petition	Basic cost of transformers as per Form-5B submitted in original petition 79/2010 and 269/2010
Asset-II	3489	361	2698	1343
Asset-III	3608	471	2707	1343

11. The petitioner submitted that, the cost difference of ₹ 119 lakh is due to difference in cost of civil works. Further, the petitioner has submitted that ICT-I at Roorkee Sub-station was commissioned on 1.4.2009 whereas ICT-II on 1.4.2010. The part of civil works completed subsequent to commissioning of ICT-I, i.e. 1.4.2009 has been capitalized in ICT-II at Roorkee Sub-station. However, as per Form- 5B of its original petitions, i.e. Petition No. 79/2010 and Petition No.





269/2010, the basic cost of transformers is same, i.e. ₹1343 lakh. Therefore, the basic cost of the transformers is same.

12. The petitioner has submitted the Auditor's Certificate certifying the capital cost and additional capitalization claimed. The actual capital cost of ₹1962.50lakhfor Asset-I, ₹2948.74 lakh for Asset-II and ₹3186.22 lakh for Asset-III as on COD has been considered for the purpose of truing up. The combined capital cost of Combined Asset- II & III has been considered as ₹6268.85 lakh as on notional COD.

### **Additional Capital Expenditure**

13. The petitioner has claimed additional capitalization of ₹397.89 lakh for Asset-I, ₹385.81 lakh for Asset-II and ₹297.98 lakh for Asset-III under Regulation 9(1)(i) and 9(2)(v) of the 2009 Tariff Regulations for the assets.

14. Clause (1)(i) and (2)(v) of Regulation 9 of the 2009 Tariff Regulations provides that:-

#### **“Additional Capitalisation.**

(1) The capital expenditure 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;

(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

(v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance



and any other expenditure which has become necessary for successful and efficient operation of transmission system:

15. The petitioner has claimed additional capitalization towards balance and retention payment for Assets-I, II and III. We have considered the submissions of the petitioner. The total actual capital cost of ₹2360.39 lakh, ₹3334.55 lakh and ₹3484.20 including actual additional capitalization in case of Assets-I, II and III, respectively is within the apportioned approved cost of ₹2900.79 lakh, ₹4047.19 lakh, ₹4047.19 lakh of Assets-I, II and III respectively. Hence, the additional capitalization in case of Assets I, II and III are allowed under Regulation 9(1)(i) and 9(2)(v) of the 2009 Tariff Regulations as shown in the table below:-

Particulars	Capital cost as on COD	Additional Capital Expenditure (2009-14)					Total	(₹ in lakh)	
		2009-10	2010-11	2011-12	2012-13	2013-14		Capital cost as on 31.3.2014	
<b>Asset-I</b>									
Approved in order dated 1.12.2010	1962.50	206.62	110.00	-	-	-	<b>316.62</b>	<b>2279.12</b>	
Actual	1962.50	247.98	68.15	29.75	20.50	31.51	<b>397.89</b>	<b>2360.39</b>	
<b>Asset-II</b>									
Approved in order dated 1.12.2010	2948.74	954.09	5.00	-	-	-	<b>959.09</b>	<b>3907.83</b>	
Actual	2948.74	133.89	136.88	11.58-	41.00-	62.46-	<b>385.81</b>	<b>3334.55</b>	
<b>Combined Asset- II &amp; III</b>									
Approved in order dated 16.9.2011		7089.05	440.60	145.19	-	-	<b>585.79</b>	<b>7674.84</b>	
Actual		6268.85	273.76	77.48	104.44	94.22	<b>549.90</b>	<b>6818.75</b>	

### **Debt: Equity**

16. Clause 1 & 3 of Regulation 12 of the 2009 Tariff Regulations provides as follows:-



“(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

.....

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

17. The petitioner has claimed true up Annual Fixed Charge based on debt-equity ratio of 70:30 in its order dated 1.12.2010 in Petition No. 79/2010 for Asset-I and Asset-II and in order dated 16.9.2011 in Petition No. 269/2010 for Combined Asset-II & III. The debt:equity ratio of 70:30 as on 1.4.2009 for Asset-I and Asset-II and as on 1.4.2010 for Combined Asset- II & III is in line with the 2009 Tariff Regulations and therefore, same has been considered for the purpose of trueing up of the approved tariff of 2009-14 tariff period, as given under:-

(₹ in lakh)		
Funding (Asset-I)	Amount	(%)
Debt	1374.00	70.01
Equity	588.50	29.99
<b>Total</b>	<b>1962.50</b>	<b>100.00</b>

(₹ in lakh)		
Funding (Asset-II)	Amount	(%)
Debt	2064.12	70.00
Equity	884.62	30.00
<b>Total</b>	<b>2948.74</b>	<b>100.00</b>

(₹ in lakh)		
Funding (Combined Asset-II & III)	Amount	(%)
Debt	4388.22	70.00
Equity	1880.63	30.00
<b>Total</b>	<b>6268.85</b>	<b>100.00</b>



18. With respect to additional capitalization, the petitioner has claimed the debt:equity ratio of 70:30 for Asset-I, Asset-II and Asset-III. The petitioner was directed to confirm that the actual equity infused for additional capitalization during the 2009-14 tariff period is not less than 30%. In response, the petitioner vide affidavit dated 28.1.2016 submitted actual debt:equity ratio of 70:30 for all the assets. The debt:equity ratio claimed by the petitioner is as follows:-

Financial Year	Total additional capitalization	Actual debt	Actual equity	Debt: Equity
<b>Asset-I</b>				
2009-10	247.98	173.59	74.39	70:30
2010-11	68.15	47.71	20.44	70:30
2011-12	29.75	20.83	8.92	70:30
2012-13	20.50	14.35	6.15	70:30
2013-14	31.51	22.06	9.45	70:30
<b>Asset-II</b>				
2009-10	133.89	93.72	40.17	70:30
<b>Combined Asset- II &amp; III</b>				
2010-11	273.76	191.64	82.12	70:30
2011-12	77.48	54.24	23.24	70:30
2012-13	104.44	73.11	31.33	70:30
2013-14	94.22	65.94	28.27	70:30

19. The overall debt: equity as on 31.3.2014 for Asset-I, and Combined Asset-II & III including additional capitalization considered for computation of tariff is as under:-

(₹ in lakh)		
Funding (Asset-I)	Amount	(%)
Debt	1652.54	70.01
Equity	707.85	29.99
<b>Total</b>	<b>2360.39</b>	<b>100.00</b>

(₹ in lakh)		
Funding (Combined Asset-II & III)	Amount	(%)
Debt	4773.16	70.00
Equity	2045.59	30.00
<b>Total</b>	<b>6818.75</b>	<b>100.00</b>

### Interest on Loan (“IOL”)

20. Regulation 16 of the 2009 Tariff Regulations provides the methodology for working out weighted average rate of interest on loan. The Commission in its earlier order dated 8.6.2011 in Petition No. 238/2010 has held that:-

“...in case of floating rate of interest, any change in the rates of interest during the tariff period will be considered at the time of true up”.

21. The petitioner has submitted the weighted average rate of interest on loan based on its actual loan portfolio and rate of interest.

22. 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 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)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	131.72	132.74	126.40	116.36	106.37
As claimed by the petitioner	132.49	132.72	125.70	117.07	108.49
<b>Allowed after trued up</b>	<b>132.49</b>	<b>132.72</b>	<b>125.70</b>	<b>117.07</b>	<b>108.49</b>

(₹ in lakh)

(Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	218.50	234.67	218.24	201.73	185.30
As claimed by the petitioner	192.16	-	-	-	-
<b>Allowed after trued up</b>	<b>192.16</b>	-	-	-	-

(₹ in lakh)

(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 16.9.2011	443.61	430.92	404.00	372.39
As claimed by the petitioner	387.54	372.17	351.05	330.21
<b>Allowed after trued up</b>	<b>387.54</b>	<b>372.18</b>	<b>351.04</b>	<b>330.21</b>



23. The variation in Interest on loan is on account of variation in additional capitalisation and actual weighted average interest rate for the 2009-14 tariff period.

### **Return on Equity (“ROE”)**

24. Clause (3), (4) and (5) of Regulation 15 of the 2009 Tariff Regulations provide that:-

“(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

25. The petitioner has submitted that MAT rate of 11.330% applicable for 2008-09 was considered in the order dated 1.12.2010 in Petition No.79/2010 for Asset-I and Asset-II, in order dated 16.9.2011 in Petition No.269/2010. However, for truing up purpose, the computation of ROE for the tariff period 2009-14 has been done on the basis of actual MAT rate applicable during the 2009-14 tariff period. The petitioner has submitted the variation in the MAT rate during 2009-14



as per the Finance Act of the relevant year for the purpose of grossing up of ROE, as below:-

Particulars	MAT Rate (t) %	Grossed up ROE (Base rate/(1-t)) %
2009-10	16.995	18.674
2010-11	19.931	19.358
2011-12	20.008	19.377
2012-13	20.008	19.377
2013-14	20.961	19.610

26. Accordingly, ROE as allowed for Asset-I, Asset-II and Combined Asset-II & III is shown in the table below:-

**(₹ in lakh)**

(Asset-I)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	108.29	116.60	119.48	119.48	119.48
As claimed by the petitioner	116.84	130.30	133.27	134.73	137.88
<b>Allowed after trued up</b>	<b>116.84</b>	<b>130.30</b>	<b>133.27</b>	<b>134.73</b>	<b>137.88</b>

**(₹ in lakh)**

(Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	179.68	204.83	204.96	204.96	204.96
As claimed by the petitioner	168.97	-	-	-	-
<b>Allowed after trued up</b>	<b>168.97</b>	-	-	-	-

**(₹ in lakh)**

(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 16.9.2011	383.32	398.68	402.49	402.49
As claimed by the petitioner	372.00	382.57	387.86	398.37
<b>Allowed after trued up</b>	<b>372.00</b>	<b>382.57</b>	<b>387.86</b>	<b>398.37</b>

27. The variation in return on equity is on account of variation additional capitalisation and applicable MAT rate for the purpose of grossing up of base rate of return on equity.



## **Depreciation**

28. Clause (42) of Regulation 3 of the 2009 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) Hydro generating station	35 years
(e) Transmission line	35 years”

29. Clause (4) of Regulation 17 of the 2009 Tariff Regulations provides as follows:-

### **"17. Depreciation:**

...  
(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.”

30. The depreciation was worked out in order dated 1.12.2010 in Petition No. 79/2010, for Asset-I and Asset-II and in order dated 16.9.2011 in Petition No.269/2010in accordance with Regulation 17 of the 2009 Tariff Regulations.

31. The weighted average useful life of the transmission asset has been considered as per Regulations3 (42) and 17 (4) of the 2009 Tariff Regulations. For the purpose of calculation, the weighted average useful life of the asset has been considered as 27 years for Asset-I, 25 years for Combined Asset-II & III. The depreciation for the tariff period 2009-14 has been worked out in accordance with Regulation 17 of the 2009 Tariff Regulations based on admitted capital expenditure as under:-





**(₹ in lakh)**

(Asset-I)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	95.85	103.16	106.07	106.07	106.07
As claimed by the petitioner	97.49	105.29	107.80	108.98	110.22
<b>Allowed after trued up</b>	<b>97.49</b>	<b>105.29</b>	<b>107.80</b>	<b>108.99</b>	<b>110.22</b>

**(₹ in lakh)**

(Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	151.60	174.45	174.58	174.58	174.58
As claimed by the petitioner	131.41	-	-	-	-
Allowed after trued up	131.41	-	-	-	-

**(₹ in lakh)**

(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 16.9.2011	322.06	335.99	339.44	339.44
As claimed by the petitioner	278.16	287.14	291.38	296.08
<b>Allowed after trued up</b>	<b>278.16</b>	<b>287.14</b>	<b>291.38</b>	<b>296.08</b>

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

32. The petitioner has computed O&M expenses for the assets mentioned in the petition and in accordance with the O&M norms for lines and bays specified in Regulation 19(g) of the 2009 Tariff Regulations. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are as follows:-

**(₹ in lakh)**

(Asset-I)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	106.12	112.19	118.61	125.40	132.56
As claimed by the petitioner	106.12	112.19	118.61	125.40	132.56
Allowed after trued up	106.12	112.19	118.61	125.40	132.56

**(₹ in lakh)**

(Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	162.44	171.74	181.57	191.94	202.92
As claimed by the petitioner	162.44	-	-	-	-
Allowed after trued up	162.44	-	-	-	-



	(₹ in lakh)			
(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 16.9.2011	343.48	363.14	383.88	405.84
As claimed by the petitioner	343.48	363.14	383.88	405.84
Allowed after trued up	343.48	363.14	383.88	405.84

### **Interest on working capital("IWC")**

33. Sub-clause (c) of clause (1) of Regulation 18 of the 2009 Tariff Regulations provides the components of the working capital for the transmission system and clause (3) of Regulation 18 of the 2009 Tariff Regulations provides for the rate of interest of working capital.

34. The petitioner has submitted that the rate of interest on working capital as 12.25%, 12.25% and 11.75% for Asset-I, Asset-II for 2009-10 and Combined Asset-II & III, respectively and the components of working capital are also considered in accordance with Sub-clause (c) of clause (1) of Regulation 18 of the 2009 Tariff Regulations.

35. In accordance with clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended, rate of interest on working capital shall be on normative basis and in case of transmission assets declared under commercial operation prior to 1.4.2009, shall be equal to short-term Prime Lending Rate as applicable as on 1.4.2009. State Bank of India short-term Prime Lending Rate on 1.4.2009 was 12.25%. Therefore, interest rate of 12.25% has been considered to work out the interest on working capital for Asset-I and Asset-II for 2009-10. Further for Combined Asset-II & III, in accordance with Clause (3)(ii) of



Regulation 18 of the 2009 Tariff Regulations (Second Amendment), rate of interest on working capital shall be on normative basis and in case of transmission assets declared under commercial operation before 1.7.2010 shall be equal to SBI PLR Rate as on 1<sup>st</sup> April of the year in which the transmission asset was declared under commercial operation. State Bank of India PLR rate as on 1.4.2010 was 11.75%. Therefore, interest rate of 11.75% for Combined Asset-II & III has been considered to work out the interest on working capital.

36. The IWC trued up is as under:-

(₹ in lakh)					
(Asset-I)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	12.31	12.96	13.27	13.40	13.55
As claimed by the petitioner	12.54	13.29	13.58	13.79	14.06
<b>Allowed after trued up</b>	<b>12.54</b>	<b>13.29</b>	<b>13.58</b>	<b>13.79</b>	<b>14.06</b>

(₹ in lakh)					
(Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 1.12.2010	19.58	21.39	21.54	21.72	21.92
As claimed by the petitioner	18.39	-	-	-	-
<b>Allowed after trued up</b>	<b>18.39</b>	-	-	-	-

(₹ in lakh)				
(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 16.9.2011	39.42	40.69	41.29	41.71
As claimed by the petitioner	37.19	38.22	38.98	39.92
<b>Allowed after trued up</b>	<b>37.19</b>	<b>38.22</b>	<b>38.98</b>	<b>39.92</b>

37. The variation in IWC is on account of variation in IOL, depreciation and ROE and further increase in ROE on account of applicable MAT rate during 2009-14 tariff period.

## **ANNUAL FIXED CHARGES FOR 2009-14 TARIFF PERIOD**

38. The detailed computation of the various components of the trued up annual fixed charges for Asset-A, Asset-B and Asset-C for the tariff period 2009-14 is summarised below:-

	(₹ in lakh)				
<b>(Asset-I)</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Gross Block</b>					
Opening Gross Block	1962.50	2210.48	2278.63	2308.38	2328.88
Additional Capitalization	247.98	68.15	29.75	20.50	31.51
Closing Gross block	2210.48	2278.63	2308.38	2328.88	2360.39
Average Gross block	2086.49	2244.56	2293.51	2318.63	2344.64
<b>Depreciation</b>					
Rate of Depreciation (%)	4.673	4.691	4.700	4.700	4.701
Depreciable Value	1684.75	1827.00	1871.06	1893.67	1917.08
Elapsed Life of the assets at beginning of the year	0.00	1.00	2.00	3.00	4.00
Weighted Balance Useful life of the assets	27.00	26.00	25.00	24.00	23.00
Remaining Depreciable Value	1684.75	1729.51	1668.28	1583.09	1497.51
Depreciation	97.49	105.29	107.80	108.99	110.22
<b>Interest on Loan</b>					
Gross Normative Loan	1374.00	1547.59	1595.30	1616.13	1630.48
Cumulative Repayment upto Previous Year	0.00	97.49	202.78	310.58	419.57
Net Loan-Opening	1374.00	1450.10	1392.52	1305.55	1210.91
Additions	173.59	47.71	20.83	14.35	22.06
Repayment during the year	97.49	105.29	107.80	108.99	110.22
Net Loan-Closing	1450.10	1392.52	1305.55	1210.91	1122.75
Average Loan	1412.05	1421.31	1349.03	1258.23	1166.83
Weighted Average Rate of Interest on Loan (%)	9.3828	9.3381	9.3175	9.3041	9.2977
Interest	132.49	132.72	125.70	117.07	108.49
<b>Return on Equity</b>					
Opening Equity	588.50	662.89	683.33	692.25	698.40
Additions	74.39	20.44	8.92	6.15	9.45
Closing Equity	662.89	683.33	692.25	698.40	707.85
Average Equity	625.70	673.11	687.79	695.33	703.13
Return on Equity (Base					



Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the respective year (%)	16.995	19.931	20.008	20.008	20.961
Rate of Return on Equity (Pre Tax) (%)	18.674	19.358	19.377	19.377	19.610
Return on Equity (Pre Tax)	116.84	130.30	133.27	134.73	137.88
<b>Interest on Working Capital</b>					
Maintenance Spares	15.92	16.83	17.79	18.81	19.88
O & M Expenses	8.84	9.35	9.88	10.45	11.05
Receivables	77.58	82.30	83.16	83.33	83.87
Total	102.34	108.48	110.84	112.59	114.80
Interest	12.54	13.29	13.58	13.79	14.06
<b>Annual Transmission Charges</b>					
Depreciation	97.49	105.29	107.80	108.99	110.22
Interest on Loan	132.49	132.72	125.70	117.07	108.49
Return on Equity	116.84	130.30	133.27	134.73	137.88
Interest on Working Capital	12.54	13.29	13.58	13.79	14.06
O & M Expenses	106.12	112.19	118.61	125.40	132.56
<b>Total</b>	<b>465.48</b>	<b>493.79</b>	<b>498.96</b>	<b>499.97</b>	<b>503.22</b>

(₹ in lakh)

(Asset-II)	2009-10
<b>Gross Block</b>	
Opening Gross Block	2948.74
Additional Capitalization	133.89
Closing Gross block	3082.63
Average Gross block	3015.69
<b>Depreciation</b>	
Rate of Depreciation (%)	4.358
Depreciable Value	2327.93
Elapsed Life of the assets at beginning of the year	0
Weighted Balance Useful life of the assets	25
Remaining Depreciable Value	2327.93
Depreciation	131.41
<b>Interest on Loan</b>	
Gross Normative Loan	2064.00
Cumulative Repayment upto Previous Year	0.00
Net Loan-Opening	2064.00
Additions	93.72
Repayment during the year	131.41



Net Loan-Closing	2026.31
Average Loan	2045.15
Weighted Average Rate of Interest on Loan (%)	9.396
Interest	192.16
<b>Return on Equity</b>	
Opening Equity	884.74
Additions	40.17
Closing Equity	924.91
Average Equity	904.83
Return on Equity (Base Rate) (%)	15.50
MAT rate for the respective year (%)	16.995
Rate of Return on Equity (Pre Tax) (%)	18.674
Return on Equity (Pre Tax)	168.97
<b>Interest on Working Capital</b>	
Maintenance Spares	24.37
O & M Expenses	13.54
Receivables	112.23
Total	150.13
Interest	18.39
<b>Annual Transmission Charges</b>	
Depreciation	131.41
Interest on Loan	192.16
Return on Equity	168.97
Interest on Working Capital	18.39
O & M Expenses	162.44
<b>Total</b>	<b>673.37</b>

(₹ in lakh)

(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
<b>Gross Block</b>				
Opening Gross Block	6268.85	6542.61	6620.09	6724.53
Additional Capitalization	273.76	77.48	104.44	94.22
Closing Gross block	6542.61	6620.09	6724.53	6818.75
Average Gross block	6405.73	6581.35	6672.31	6771.64
<b>Depreciation</b>				
Rate of Depreciation (%)	4.342	4.363	4.367	4.372
Depreciable Value	4992.78	5150.84	5232.70	5322.10
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



(Combined Asset- II & III)	2010-11	2011-12	2012-13	2013-14
Remaining Depreciable Value	4861.36	4741.26	4535.98	4334.00
Depreciation	278.16	287.14	291.38	296.08
<b>Interest on Loan</b>				
Gross Normative Loan	4388.22	4579.86	4634.10	4707.20
Cumulative Repayment upto Previous Year	131.41	409.57	696.71	988.10
Net Loan-Opening	4256.81	4170.29	3937.38	3719.11
Additions	191.64	54.24	73.11	65.95
Repayment during the year	278.16	287.14	291.38	296.08
Net Loan-Closing	4170.29	3937.38	3719.11	3488.98
Average Loan	4213.55	4053.84	3828.24	3604.05
Weighted Average Rate of Interest on Loan (%)	9.1975	9.1808	9.1699	9.1622
Interest	387.54	372.18	351.04	330.21
<b>Return on Equity</b>				
Opening Equity	1880.63	1962.75	1985.99	2017.33
Additions	82.12	23.24	31.33	28.27
Closing Equity	1962.75	1985.99	2017.33	2045.59
Average Equity	1921.69	1974.37	2001.66	2031.46
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT rate for the respective year (%)	19.931	20.008	20.008	20.961
Rate of Return on Equity (Pre Tax) (%)	19.358	19.377	19.377	19.610
Return on Equity (Pre Tax)	372.00	382.57	387.86	398.37
<b>Interest on Working Capital</b>				
Maintenance Spares	51.52	54.47	57.58	60.88
O & M Expenses	28.62	30.26	31.99	33.82
Receivables	236.40	240.54	242.19	245.07
Total	316.54	325.27	331.76	339.77
Interest	37.19	38.22	38.98	39.92
<b>Annual Transmission Charges</b>				
Depreciation	278.16	287.14	291.38	296.08
Interest on Loan	387.54	372.18	351.04	330.21
Return on Equity	372.00	382.57	387.86	398.37
Interest on Working Capital	37.19	38.22	38.98	39.92
O & M Expenses	343.48	363.14	383.88	405.84
<b>Total</b>	<b>1418.37</b>	<b>1443.25</b>	<b>1453.15</b>	<b>1470.42</b>



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

39. The petitioner has claimed the transmission charges for Combined Asset I to III as under:-

(₹ in lakh)					
<b>Combined Assets</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	416.98	424.35	424.35	424.35	424.35
Interest on Loan	413.76	383.91	344.74	305.56	266.36
Return on equity	548.21	556.42	556.42	556.42	556.42
Interest on Working Capital	59.14	59.72	59.76	59.83	59.93
O & M Expenses	495.94	512.40	529.43	546.98	565.13
<b>Total</b>	<b>1934.03</b>	<b>1936.80</b>	<b>1914.70</b>	<b>1893.14</b>	<b>1872.19</b>

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

(₹ in lakh)					
<b>Combined Assets</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	74.39	76.86	79.41	82.05	84.77
O & M expenses	41.33	42.70	44.12	45.58	47.09
Receivables	322.34	322.80	319.12	315.52	312.03
Total	438.06	442.36	442.65	443.15	443.90
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>59.14</b>	<b>59.72</b>	<b>59.76</b>	<b>59.83</b>	<b>59.93</b>

### **Capital Cost**

41. Clause (1) & (3) of Regulation 9 of the 2014 Tariff Regulations specify as follows:-

“(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.”

“(3) The Capital cost of an existing project shall include the following:

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
- (b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and





(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”

42. The petitioner has claimed capital expenditure of ₹9179.14 lakh, for Combined Assets for the tariff period 2014-19. We have considered true up capital cost of ₹9179.14 lakh for the combined assets as on 31.3.2014 to workout the tariff for tariff period 2014-19.

### **Additional Capital Expenditure**

43. The petitioner has projected additional capitalization of ₹278.92 lakh, for 2014-15 tariff period towards balance and retention payments beyond cut-off date under Regulation 14(3)(vi) of the 2014 Tariff Regulations. The petitioner was directed vide letter dated 18.1.2016 to submit the amount of balance and retention payment yet to be made along with the details of contract for which the payment has been retained. In response, the petitioner vide affidavit dated 28.1.2016 has submitted the contractor-wise details of balance and retention payment to be made during 2014-19 for all the three assets.

44. The total capital cost including additional capitalisation of ₹9458.06 lakh is less than apportioned approved cost. Hence, we have allowed additional capitalization of ₹278.92 lakh for 2014-19 tariff period towards balance and retention payments under Regulation 14(3)(vi) of 2014 Tariff Regulations and have considered the same for tariff computation.



(₹ in lakh)

Cost as per Investment Approval is ₹ 10995.17 lakh				
Particulars	Admitted capital cost as on 31.3.2014	Additional capitalisation projected	Total additional capitalisation	Total capital cost including additional capitalisation as on 31.3.2019
		2014-15		
Combined Assets	9179.14	278.92	278.92	9458.06

### Debt:EquityRatio

45. Clause 3 of Regulation 19 of the 2014 Tariff Regulations specifies as under:-

“(3) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.”

46. The petitioner has considered debt:equity ratio as 70:30 as on 31.3.2014. The admitted debt:equity ratio of 70:30 after true-up for the tariff period ending 31.3.2014 has been considered as opening debt:equity ratio as on 1.4.2014. Further, we have considered debt:equity ratio of 70:30 for additional capitalization during 2014-15. The details of the debt:equity considered for the purpose of computation of tariff for 2014-19 tariff period is as follows:-

(₹ in lakh)

Combined Assets	As on 1.4.2014		Additional capitalization during 2014-15		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	6425.70	70.00	195.24	70.00	6620.94	70.00
Equity	2753.44	30.00	83.68	30.00	2837.12	30.00
<b>Total</b>	<b>9179.14</b>	<b>100.00</b>	<b>278.92</b>	<b>100.00</b>	<b>9458.06</b>	<b>100.00</b>

### Interest on Loan (“IOL”)

47. 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.”

48. The weighted average rate of IOL has been considered on the basis of rate prevailing as on 1.4.2014. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The details of weighted average rate of interest are placed at **Annexure-II** and the IOL has been worked out and allowed as follows:-

	(₹ in lakh)				
<b>Combined Assets</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	6425.70	6620.94	6620.94	6620.94	6620.94
Cumulative Repayment upto COD/previous year	1813.96	2230.94	2655.29	3079.63	3503.98
Net Loan-Opening	4611.74	4390.00	3965.65	3541.31	3116.96
Additions during the year	195.24	0.00	0.00	0.00	0.00
Repayment during the year	416.98	424.34	424.34	424.34	424.34
Net Loan-Closing	4390.00	3965.65	3541.31	3116.96	2692.62
Average Loan	4500.87	4177.83	3753.48	3329.14	2904.79
Rate of Interest (%)	9.1928	9.1891	9.1844	9.1782	9.1698
<b>Interest</b>	<b>413.76</b>	<b>383.91</b>	<b>344.74</b>	<b>305.56</b>	<b>266.36</b>

### **Return on Equity(“ROE”)**

49. 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”

**“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.”

50. The petitioner has computed ROE at the rate of 19.610% after grossing up the ROE of 15.50% 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.

51. 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.

52. 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 worked allowed is as given hereunder:-

(₹ in lakh)					
<b>Combined Assets</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	2753.44	2837.12	2837.12	2837.12	2837.12
Addition to Equity during the year	83.68	0.00	0.00	0.00	0.00
Closing Equity	2837.12	2837.12	2837.12	2837.12	2837.12
Average Equity	2795.28	2837.12	2837.12	2837.12	2837.12
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	548.15	556.36	556.36	556.36	556.36

### **Depreciation**

53. 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.”

54. We have computed depreciation considering capital expenditure of ₹9457.97lakh including additional capitalization, for Combined Assets for the 2014-19 tariff period. We have allowed depreciation under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation allowed are given hereunder:-

(₹ in lakh)					
<b>Combined Assets</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	9179.14	9458.06	9458.06	9458.06	9458.06
Additional Capitalisation	278.92	0.00	0.00	0.00	0.00
Gross block at the end of the year	9458.06	9458.06	9458.06	9458.06	9458.06
Average gross block	9318.60	9458.06	9458.06	9458.06	9458.06
Rate of Depreciation (%)	4.475	4.487	4.487	4.487	4.487
Depreciable Value	7421.27	7546.78	7546.78	7546.78	7546.78
Elapsed Life of the assets at beginning of the year	5	6	7	8	9
Weighted Balance Useful life of the assets	21	20	19	18	17
Remaining Depreciable Value	6891.48	6600.01	6175.67	5751.32	5326.98
<b>Depreciation</b>	<b>416.98</b>	<b>424.34</b>	<b>424.34</b>	<b>424.34</b>	<b>424.34</b>

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

55. 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 have been worked out as given hereunder:-

		(₹ in lakh)				
Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
Actual	Double Circuit (Twin & Triple Conductor) (km)	2.1	2.1	2.1	2.1	2.1
	400 kV bays (Nos.)	4	4	4	4	4
	220 kV bays (Nos.)	6	6	6	6	6
Norms as per Regulation	Double Circuit (Twin & Triple Conductor) (lakh/km)	0.707	0.731	0.755	0.78	0.806
	400 kV bays (lakh/bay)	60.30	62.30	64.37	66.51	68.71
	220 kV bays (lakh/bay)	42.21	43.61	45.06	46.55	48.10
<b>Total (in ₹ in lakh)</b>		<b>495.94</b>	<b>512.40</b>	<b>529.43</b>	<b>546.98</b>	<b>565.13</b>

56. 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 2014-19 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.

57. 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, we would like to clarify that any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

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

					(₹ in lakh)
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses Allowed</b>	<b>495.94</b>	<b>512.40</b>	<b>529.43</b>	<b>546.98</b>	<b>565.13</b>

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

59. 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;”

60. 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%.





61. 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 worked out is shown in the table below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	74.39	76.86	79.41	82.05	84.77
O & M expenses	41.33	42.70	44.12	45.58	47.09
Receivables	322.33	322.79	319.10	315.51	312.02
<b>Total</b>	<b>438.05</b>	<b>442.35</b>	<b>442.64</b>	<b>443.14</b>	<b>443.88</b>
Rate of Interest	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>59.14</b>	<b>59.72</b>	<b>59.76</b>	<b>59.82</b>	<b>59.92</b>

### Annual Transmission Charges

62. 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	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Opening Gross Block	9179.14	9458.06	9458.06	9458.06	9458.06
Additional Capitalization	278.92	0.00	0.00	0.00	0.00
Closing Gross Block	9458.06	9458.06	9458.06	9458.06	9458.06
Average Gross Block	9318.60	9458.06	9458.06	9458.06	9458.06
<b>Depreciation</b>					
Rate of Depreciation	4.475	4.487	4.487	4.487	4.487
Depreciable Value	7421.27	7546.78	7546.78	7546.78	7546.78
Elapsed Life of the assets at beginning of the year	5	6	7	8	9
Weighted Balance Useful life of the assets	21	20	19	18	17
Remaining Depreciable Value	6891.48	6600.01	6175.67	5751.32	5326.98
Depreciation	416.98	424.34	424.34	424.34	424.34
<b>Interest on Loan</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	6425.70	6620.94	6620.94	6620.94	6620.94
Cumulative Repayment upto Previous Year	1813.96	2230.94	2655.29	3079.63	3503.98
Net Loan-Opening	4611.74	4390.00	3965.65	3541.31	3116.96
Additions	195.24	0.00	0.00	0.00	0.00
Repayment during the year	416.98	424.34	424.34	424.34	424.34
Net Loan-Closing	4390.00	3965.65	3541.31	3116.96	2692.62
Average Loan	4500.87	4177.83	3753.48	3329.14	2904.79
Weighted Average Rate of Interest on Loan (%)	9.1928	9.1891	9.1844	9.1782	9.1698
Interest	413.76	383.91	344.74	305.56	266.36
<b>Return on Equity</b>					
Opening Equity	2753.44	2837.12	2837.12	2837.12	2837.12
Additions	83.68	0.00	0.00	0.00	0.00
Closing Equity	2837.12	2837.12	2837.12	2837.12	2837.12
Average Equity	2795.28	2837.12	2837.12	2837.12	2837.12
Return on Equity (Base Rate)(%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for the year 2013-14 (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	548.15	556.36	556.36	556.36	556.36
<b>Interest on Working Capital</b>					
Maintenance Spares	74.39	76.86	79.41	82.05	84.77
O & M expenses	41.33	42.70	44.12	45.58	47.09
Receivables	322.33	322.79	319.10	315.51	312.02
Total	<b>438.05</b>	<b>442.35</b>	<b>442.64</b>	<b>443.14</b>	<b>443.88</b>
Interest	59.14	59.72	59.76	59.82	59.92
<b>Annual Transmission Charges</b>					
Depreciation	416.98	424.34	424.34	424.34	424.34
Interest on Loan	413.76	383.91	344.74	305.56	266.36
Return on Equity	548.15	556.36	556.36	556.36	556.36
Interest on Working Capital	59.14	59.72	59.76	59.82	59.92
O & M Expenses	495.94	512.40	529.43	546.98	565.13
<b>Total</b>	<b>1933.97</b>	<b>1936.72</b>	<b>1914.62</b>	<b>1893.06</b>	<b>1872.12</b>

63. The petitioner has sought recovery of deferred tax liability of the period prior to 1.4.2009 from the beneficiaries or long term consumers/ DICs as and



when materialized. However, the COD of the asset is after 31.3.2009, hence the petitioner's claimed dose not survive.

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

64. 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**

65. 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**

66. 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**

67. 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.

68. This order disposes of Petition No. 546/TT/2014.

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

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



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

Particulars (Asset-I)	Interest Rate (%)	Loan deployed as on 1.4.2010	Additions during the tariff period	Total
BOND XXIV -DOCO DRAWL ON 01-APR-2009	9.95	225.00	0.00	225.00
BOND XXVII -DOCO DRAWL ON 01-APR-2009	9.47	300.00	0.00	300.00
BOND XXVIII -DOCO DRAWL ON 01-APR-2009	9.33	400.00	0.00	400.00
BOND XXIX -DOCO DRAWL ON 01-APR-2009	9.20	449.00	0.00	449.00
BOND XXX -ADDCAP FOR 2009-2010 ADDCAP LOAN-5	8.80	0.00	173.59	173.59
BOND XXX -ADDCAP FOR 2010-2011 ADDCAP LOAN-6	8.80	0.00	47.71	47.71
BOND XXXIII -ADDCAP FOR 2011-2012 ADDCAP LOAN-7	8.64	0.00	17.41	17.41
BOND XXXVIII -ADDCAP FOR 2011-2012 ADDCAP LOAN-8	9.25	0.00	3.42	3.42
BOND XXXVIII -ADDCAP FOR 2012-2013 ADDCAP LOAN-9	9.25	0.00	14.35	14.35
BOND XL -ADDCAP FOR 2013-2014 ADDCAP LOAN-10	9.30	0.00	22.06	22.06
<b>Total</b>		<b>1374.00</b>	<b>278.54</b>	<b>1652.54</b>

**(₹ in lakh)**

Particulars (Asset-II)	Interest Rate (%)	Loan deployed as on 1.4.2010	Additions during the tariff period	Total
BOND XXIV -DOCO LOAN-1	9.95	300.00	0.00	300.00
BOND XXVII -DOCO LOAN-2	9.47	468.00	0.00	468.00
BOND XXVIII -DOCO LOAN-3	9.33	624.00	0.00	624.00
BOND XXIX -DOCO LOAN-4	9.20	672.00	0.00	672.00
BOND XXX -ADDCAP FOR	8.80	0.00	93.72	93.72



Particulars (Asset-II)	Interest Rate (%)	Loan deployed as on 1.4.2010	Additions during the tariff period	Total
2009-2010 ADDCAP LOAN-5				
BOND XXX -ADDCAP FOR 2010-2011 ADDCAP LOAN-6	8.80	0.00	95.82	95.82
BOND XXXIII -ADDCAP FOR 2011-2012 ADDCAP LOAN-7	8.64	0.00	8.11	8.11
BOND XXXVIII -ADDCAP FOR 2012-2013 ADDCAP 2013	9.25	0.00	28.70	28.70
BOND XXXVIII -ADDCAP FOR 2013-2014 ADDCAP LOAN-9	9.25	0.00	25.00	25.00
BOND XL -ADDCAP FOR 2013-2014 ADDCAP LOAN-10	9.30	0.00	18.72	18.72
<b>Total</b>		<b>2064.00</b>	<b>270.07</b>	<b>2334.07</b>

Particulars (Combined Asset-II & III)	Interest Rate (%)	Loan deployed as on 1.4.2010	Additions during the tariff period	Total
BOND XXIV -1. DOCO LOAN 1-	9.95	300.00	0.00	300.00
BOND XXIV -11. DOCO LOAN 1-	9.95	119.00	0.00	119.00
BOND XXVII -12. DOCO LOAN 2-	9.47	232.00	0.00	232.00
BOND XXVII -2. DOCO LOAN 2-	9.47	468.00	0.00	468.00
BOND XXVIII -13. DOCO LOAN 3-	9.33	318.00	0.00	318.00
BOND XXVIII -3. DOCO LOAN 3-	9.33	624.00	0.00	624.00
BOND XXIX -14. DOCO LOAN 4-	9.20	305.00	0.00	305.00
BOND XXIX -4. DOCO LOAN 4-	9.20	672.00	0.00	672.00
BOND XXX -15. DOCO LOAN 5-	8.80	986.00	0.00	986.00
BOND XXX -16. ADDCAP FOR 2010-2011 ADDCAP LOAN-7	8.80	0.00	69.84	69.84
<b>Total</b>		<b>4388.22</b>	<b>384.93</b>	<b>4773.15</b>



**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN  
FOR TARIFF PERIOD 2009-14**

(₹ in lakh)

Particulars (Asset-I)	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Opening Loan	1374.00	1547.59	1595.30	1616.13	1630.48
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	18.75	62.50	177.00
Net Loans Opening	1374.00	1547.59	1576.55	1553.63	1453.48
Add: Drawl(s) during the year	173.59	47.71	20.83	14.35	22.06
Less: Repayment(s) of Loan during the year	0.00	18.75	43.75	114.50	132.95
Net Closing Loan	1547.59	1576.55	1553.63	1453.48	1342.59
Average Net Loan	1460.80	1562.07	1565.09	1503.56	1398.04
Rate of Interest on Loan (%)	9.38	9.34	9.32	9.30	9.30
Interest on Loan	137.06	145.87	145.83	139.89	129.98

(₹ in lakh)

Particulars (Asset-II)	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Opening Loan	2064.00	2157.72	2253.54	2261.65	2290.35
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	2064.00	2157.72	2253.54	2261.65	2290.35
Add: Drawl(s) during the year	93.72	95.82	8.11	28.70	43.72
Less: Repayment(s) of Loan during the year	0.00	0.00	0.00	0.00	0.00
Net Closing Loan	2157.72	2253.54	2261.65	2290.35	2334.07
Average Net Loan	2110.86	2205.63	2257.60	2276.00	2312.21
Rate of Interest on Loan (%)	9.40	9.37	9.36	9.36	9.35
Interest on Loan	198.34	206.68	211.24	212.92	216.27

(₹ in lakh)

Particulars (Combined Asset-II & III)	2010-11	2011-12	2012-13	2013-14
Gross Opening Loan	4388.22	4579.86	4634.10	4707.21
Cumulative Repayments of Loans upto Previous Year	0.00	34.92	128.17	38.34
Net Loans Opening	4388.22	4544.94	4505.93	4325.87
Add: Drawl(s) during the year	191.64	54.24	73.11	65.94
Less: Repayment(s) of Loan during the year	34.92	93.25	253.17	356.96
Net Closing Loan	4544.94	4505.93	4325.87	4034.85
Average Net Loan	4466.58	4525.44	4415.90	4180.36
Rate of Interest on Loan (%)	9.20	9.18	9.17	9.16
Interest on Loan	410.81	415.47	404.93	383.01



**ANNEXURE-II****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO(2014-19)****(₹ in lakh)**

Particulars (Combined Assets)	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
BOND XXIV -1.DOCO DRAWL ON 01-APR-2009	9.95	225.00	0.00	225.00
BOND XXIV -11.DOCO LOAN 1-	9.95	300.00	0.00	300.00
BOND XXIV -21.DOCO LOAN 1-	9.95	119.00	0.00	119.00
BOND XXVII -12.DOCO LOAN 2-	9.47	468.00	0.00	468.00
BOND XXVII -2.DOCO DRAWL ON 01-APR-2009-	9.47	300.00	0.00	300.00
BOND XXVII -22.DOCO LOAN 2-	9.47	232.00	0.00	232.00
BOND XXVIII -13.DOCO LOAN 3-	9.33	624.00	0.00	624.00
BOND XXVIII -23.DOCO LOAN 3-	9.33	318.00	0.00	318.00
BOND XXVIII -3.DOCO DRAWL ON 01-APR-2009-	9.33	400.00	0.00	400.00
BOND XXIX-14.DOCO LOAN 4-	9.20	672.00	0.00	672.00
<b>Total</b>		<b>6425.69</b>	<b>0.00</b>	<b>6425.69</b>

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR TARIFF PERIOD 2014-19****(₹ in lakh)**

Particulars (Asset-1,2&3)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	6425.69	6425.69	6425.69	6425.69	6425.69
Cumulative Repayments of Loans upto Previous Year	1048.25	1565.00	2081.75	2602.84	3124.85
Net Loans Opening	5377.44	4860.69	4343.94	3822.85	3300.84
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	516.75	516.75	521.09	522.01	522.01
Net Closing Loan	4860.69	4343.94	3822.85	3300.84	2778.83
Average Net Loan	5119.07	4602.32	4083.40	3561.85	3039.84
Rate of Interest on Loan (%)	9.19	9.19	9.18	9.18	9.17
Interest on Loan	470.59	422.91	375.04	326.91	278.75

