

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 369/TT/2014**

**Coram:**

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

**Date of Hearing : 16.11.2015  
Date of Order : 30.11.2015**

**In the matter of:**

Truing up of transmission tariff for 2009-14 tariff period and determination of transmission tariff for 2014-19 tariff period for (a) Neelamangala-Somanahalli 400 kV D/C line along with bays; and (b) Gooty-Raichur 400 kV D/C transmission line with bays under system strengthening-III in Southern Region under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

**And in the matter of:**

Power Grid Corporation of India Ltd.  
'SAUDAMINI', Plot No-2,  
Sector-29, Gurgaon -122 001 (Haryana).

.....**Petitioner**

**Versus**

1. Karnataka Power Transmission Corporation Ltd.  
Kaveri Bhawan, Bangalore-560009
2. Transmission Corporation of Andhra Pradesh Ltd.  
(APTRANSCO), Vidyut Soudha  
Hyderabad-500082
3. Kerala State Electricity Board (KSEB)  
Vaidyuthi Bhavanam, Pattom  
Thiruvananthapuram-695004
4. Tamil Nadu Electricity Board  
NPKRR Maaligai, 800, Anna Salai  
Chennai- 600002



5. Electricity Department  
Government of Goa  
Vidyuti Bhawan, Panaji  
Goa- 403001
  6. Electricity Department  
Government of Pondicherry  
Pondicherry- 605001
  7. Eastern Power Distribution Company of Andhra Pradesh Ltd.  
P&T Colony, Seethmmadhara, Vishakhapatnam  
Andhra Pradesh
  8. Southern Power Distribution Company of Andhra Pradesh  
Tiruchanoor Road, Kesavayana Gunta  
Tirupati- 517 501
  9. Central Power Distribution Company of Andhra Pradesh  
Mint Compound,  
Hyderabad- 500 063
  10. Northern Power Distribution Company of Andhra Pradesh  
Chaitanyapuri, Kazipet  
Warangal- 506 004
  11. Bangalore Electricity Supply Company Ltd.  
K.R.Circle, Bangalore- 560 001
  12. Gulbarga Electricity Supply Company Ltd.  
Station Main Road, Gulbarga
  13. Hubli Electricity Supply Company Ltd.  
Navanagar, P B Road, Hubli
  14. MESCOM Corporate Office  
Paradigm Plaza, AB Shetty Circle  
Mangalore- 575 001
  15. Chamundeswari Electricity Supply Corporation Ltd.  
New Kantharaj Urs Road, Saraswatipuram,  
Mysore-570 009
- .....**Respondents**

The following were present:

For Petitioner:           Shri S.K. Niranjan, PGCIL  
                                  Shri Jasbir Singh, PGCIL

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Shri S.S. Raju, PGCIL  
Shri Rakesh Prasad, PGCIL  
Shri M.M. Mondal, PGCIL  
Shri S.K. Venkatesan, PGCIL  
Shri Shashi Bhushan, PGCIL  
Shri Ved Prakash Rastogi, PGCIL

For Respondent: Shri. S. Vallinayagam, TANGEDCO

### **ORDER**

The present petition has been preferred by Power Grid Corporation of India Ltd. (“the petitioner”), a transmission licensee, for truing up of capital expenditure and tariff for (a) Neelamangala-Somanahalli 400 kV D/C line along with bays; and (b) Gooty-Raichur 400 kV D/C transmission line with bays under system strengthening-III in Southern Region (hereinafter referred as “transmission asset”) 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.

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



3. The petitioner has served the petition to the respondents and notice of this application has been published in the newspaper in accordance with the 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 16.11.2015. 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 Ministry of Power vide its letter dated 26.10.2004 at an estimated cost of ₹28478 lakh. The petitioner has undertaken system strengthening under system strengthening-III in Southern Region. Asset-I (Neelamangala-Somanahalli line) was put under commercial operation w.e.f 1.1.2007 and Asset-II (Gooty-Raichur line) was put under commercial operation w.e.f1.5.2007.

(b) The tariff for 2008-09 period for Asset-I and Asset-II was allowed vide order dated 19.3.2010 in Petition No. 328/2009 on account of additional capital expenditure incurred during 2008-09 in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004.



(c) The tariff for 2009-14 period was allowed vide order dated 11.4.2011 in Petition No. 199/2010 in accordance with the 2009 Tariff Regulations. The tariff allowed for the tariff period 2009-14 is as under:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	1392.42	1392.79	1392.79	1392.79	1392.79
Interest on Loan	560.92	511.90	463.09	414.60	366.11
Return on Equity	1372.54	1372.91	1372.91	1372.91	1372.91
Interest on Working Capital	98.50	99.17	99.92	100.77	101.73
O & M Expenses	583.45	616.89	652.21	689.49	728.82
<b>Total</b>	<b>4007.84</b>	<b>3993.66</b>	<b>3980.91</b>	<b>3970.55</b>	<b>3962.35</b>

(d) The Commission, in its order dated 11.4.2011 in Petition No. 199/2010, has determined the tariff based on admitted capital cost of ₹26304.65 lakh as on 31.3.2009 and additional capital expenditure of ₹13.89 lakh proposed during 2009-10 by the petitioner for the tariff period 2009-14.

(e) 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 2009-14 tariff period.

(f) The instant petition was filed on 12.9.2014.

#### **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 as discussed below:-



### **Capital Cost**

6. The petitioner has claimed admitted capital cost of ₹26304.65 lakh as on 31.3.2009 for the purpose of tariff. In addition to this, the petitioner has claimed additional capitalisation of ₹18.16 lakh during 2009-10 and 2011-12 towards Balance and Retention payment against transmission line.

7. Last proviso to Clause (2) of Regulation 7 of the 2009 Tariff Regulations provides that:-

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff”.

8. The capital cost admitted as on 31.3.2009 vide order dated 19.3.2010 in Petition No. 328/2009 has been considered as the opening capital cost as on 1.4.2009 for determination of tariff in accordance with Regulation 7 of the 2009 Tariff Regulations. The admitted capital cost of ₹26304.65 lakh as on 1.4.2009 has been considered to work out the trued up tariff for the tariff period 2009-14.

### **Additional Capital Expenditure**

9. The petitioner has claimed additional capitalisation of ₹14.22 lakh and ₹3.94 lakh for 2009-10 and 2011-12, respectively, towards Balance and Retention payment against transmission line. The total actual additional capitalisation of ₹18.14 lakh claimed during the tariff period 2009-14 is more than the approved additional capitalisation of ₹13.89 lakh for the tariff period 2009-14



approved by the Commission vide order dated 11.4.2011 in Petition No. 199/2010.

10. The petitioner has claimed the additional capitalisation beyond the cut-off date under Clause (2) of Regulation 9 of the 2009 Tariff Regulations. The petitioner was directed to submit the necessary justification as to how the balance and retention payment falls under Clause (2) of Regulation 9 of the 2009 Tariff Regulations. The petitioner in its reply submitted that as the asset was commissioned on 1.5.2007, cut-off date is 31.03.2010 and hence, the additional capital expenditure during 2009-10 amounting to ₹14.22 lakh is on account of balance and retention amount within cut-off date and is covered under Clause (1) (i) of Regulation 9 of the 2009 Tariff Regulations. The petitioner further submitted that in the petition, inadvertently, the same was mentioned as covered under Clause (2) of Regulation 9 of the 2009 Tariff Regulations

11. The petitioner further submitted that an amount of ₹3.94 lakh was released to L&T on 29.3.2012 which was withheld for the supply of bay equipment against their R.A. bill dated 16.3.2007. The petitioner submitted that in view of the fact that the work was executed and major payments also released within the cut-off date, the minor amount of ₹3.94 lakh was spent on 29.3.2012 under Clause 2(viii) of Regulation 9 of the 2009 Tariff Regulations .

12. Clause 2 of Regulation 9 of the 2009 Tariff Regulations provides as follows:-



“(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

.....  
 (viii) “Any undischarged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding payment and release of such payments etc.”

13. The total capital cost of the transmission asset including additional capitalisation incurred during 2009-10 and 2011-12 works out to ₹ 26322.81 lakh, which is within the overall estimated cost of ₹ 28478 lakh given in the investment approval. As the total capital cost is within the overall estimated cost, the additional capitalisation of ₹14.22 lakh for 2009-10 in accordance with Clause 1 of Regulation 9 of the 2009 Tariff Regulations and additional capitalisation of ₹3.94 lakh for 2011-12 in accordance with Clause 2 of Regulation 9 of the 2009 Tariff Regulations. The summary of capital cost including additional capitalization is shown in table below:-

(₹ in lakh)

Cost as per Investment Approval dated 26.10.2004:- ₹28478 lakh								
Particulars	Admitted Capital Cost as on 31.3.2009	Additional Capitalisation					Total Additional Capitalisation	Total Capital cost including Additional Capitalisation
		2009-10	2010-11	2011-12	2012-13	2013-14		
Approved vide Order dated 11.4.2011	26304.65	13.89	0.00	0.00	0.00	0.00	13.89	26318.54
Actual	26304.65	13.89	0.00	3.94	0.00	0.00	18.16	26322.81



## **Debt: Equity**

14. Clause 2 of Regulation 12 of the 2009 Tariff Regulations provides that:-

“In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.”

15. The petitioner has claimed trued up Annual Fixed Charge based on debt-equity ratio of 70.16:29.84 as considered by the Commission in its order dated 11.4.2011 in Petition No. 199/2010. The transmission assets covered in the instant petition are existing assets as the COD is prior to 1.4.2009. At the time of determination of tariff in Petition No. 199/2010, the Commission has considered admitted debt:equity ratio as on 31.3.2009 vide order dated 11.4.2011. The admitted debt:equity ratio of 70.16:29.84 as on 31.3.2009 has been considered as opening debt:equity ratio as on 1.4.2009 for the purpose of truing up of the approved tariff of tariff period 2009-14 as given under:-

Funding	Amount (in ₹ lakh)	(%)
Debt	18455.11	70.16
Equity	7849.54	29.84
Total	26304.65	100.00

16. With respect to additional capitalization, the petitioner has submitted the debt:equity ratio of 70.02:29.98 and 70.05:29.95 for 2009-10 and 2011-12 respectively. As the equity proposed by the petitioner is less than normative equity of 30%, the commission has considered the submission of the petitioner and has accordingly allowed the debt:equity ratio in accordance with Clause 2 of



Regulation 12 of the 2009 Tariff Regulations. The overall debt equity for the tariff period 2009-14 including additional capitalization is as under:-

Funding	Amount (in ₹ lakh)	(%)
Debt	18467.83	70.16
Equity	7854.98	29.84
Total	26322.81	100.00

### **Interest on Loan (“IOL”)**

17. 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”.

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

19. We have considered the submissions of the petitioner and accordingly the IOL based on the actual interest rate submitted by the petitioner is allowed 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:-

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 11.4.2011	560.92	511.90	463.09	414.60	366.11
As claimed by petitioner	413.04	287.21	261.61	255.26	194.77
Allowed after true up	413.03	287.22	261.62	255.24	194.76



The interest on loan has reduced due to reduction in actual weighted average interest rate for the tariff period 2009-14.

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

20. Clause (3), (4) and (5) of Regulation 15 of the 2009 Tariff Regulations provides 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 true up in accordance with Regulation 6 of these regulations."

21. The petitioner has submitted that the MAT rate considered in the tariff order approving transmission tariff for the transmission asset was 11.330%, as applicable for 2008-09. However, for true up purpose, the computation of ROE for the tariff period 2009-14 has been done on the basis of actual MAT rate applicable during 2009-14. 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 shown 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 %

22. Accordingly, the ROE as trued up is as shown in the table below:-

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 11.4.2011	1372.54	1372.91	1372.91	1372.91	1372.91
As claimed by petitioner	1466.22	1520.34	1521.95	1522.06	1540.36
Allowed after true up	1466.22	1520.34	1521.95	1522.06	1540.36

The return on equity has increased due to increase in the applicable MAT rate for the purpose of grossing up of base rate of return on equity.

### **Depreciation**

23. Regulation 17 of the 2009 Tariff Regulations provides for the methodology to work out the depreciation. The Commission, in its order dated 11.4.2011, has worked out the depreciation in accordance with Regulation 17 of the 2009 Tariff Regulations.

24. The depreciation for the tariff period 2009-14 has been worked out in accordance with Regulation 17 of 2009 Tariff Regulations based on admitted capital expenditure and additional capitalisation as under:-



(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 11.4.2011	1392.42	1392.79	1392.79	1392.79	1392.79
As claimed by petitioner	1392.42	1392.80	1392.90	1393.01	1393.01
Allowed after true up	1392.42	1392.80	1392.90	1393.01	1393.01

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

25. The petitioner has computed O&M expense for the assets mentioned in the petition and in accordance with the O&M norms for 400 kV lines and bays specified in Regulation 19(g) of the 2009 Tariff Regulations. Accordingly, the O&M Expenses have been worked out as given in the table below:-

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
<b>O&amp;M Expenses for Line</b>					
<b>Norm (₹ lakh/km)</b>					
Double Circuit (Bundled conductor with four or more sub-conductors)	0.940	0.994	1.051	1.111	1.174
Double Circuit (Twin & Triple Conductor)	0.627	0.663	0.701	0.741	0.783
<b>Asset (km.)</b>					
400 kV D/C Gooty-Raichur Line (D/C 4 conductors)	146.72	146.72	146.72	146.72	146.72
400 kV D/C Neelamangala-Somanahalli Line (D/C 2 Conductors)	42.004	42.004	42.004	42.004	42.004
<b>O&amp;M Expense (₹ lakh)</b>					
400 kV D/C Gooty-Raichur Line	137.92	145.84	154.20	163.01	172.25
400 kV D/C Neelamangala-Somanahalli Line	26.34	27.85	29.44	31.12	32.89
<b>Total O&amp;M Expense (line)</b>	<b>164.25</b>	<b>173.69</b>	<b>183.65</b>	<b>194.13</b>	<b>205.14</b>
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
400 kV	52.40	55.40	58.57	61.92	65.46
<b>Bays</b>					
400 kV	8	8	8	8	8



Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
<b>O&amp;M Expenses for Line</b>					
<b>Total O&amp;M expense (Bays)</b>	<b>419.2</b>	<b>443.2</b>	<b>468.56</b>	<b>495.36</b>	<b>523.68</b>
<b>Total O&amp;M expense (line and Bays) (₹ lakh)</b>	<b>583.45</b>	<b>616.89</b>	<b>652.21</b>	<b>689.49</b>	<b>728.82</b>

26. The O&M Expenses claimed by the petitioner for tariff period 2009-14 are same as that was approved in the tariff order dated 11.4.2011 in Petition No. 199/2010. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are the same, and they are as follows:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 11.4.2011	583.45	616.89	652.21	689.49	728.82
As claimed by petitioner	583.45	616.89	652.21	689.49	728.82
Allowed after true up	583.45	616.89	652.21	689.49	728.82

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

27. 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.

28. The petitioner has submitted that the rate of interest on working capital has been considered as 12.25% as per clause (3) of Regulation 18 of the 2009 Tariff Regulations 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.



29. The Commission in its order dated 11.4.2011 in Petition No. 199/2010 approved rate of interest on working capital as 12.25% as applicable for 2008-09. 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 in the instant case.

30. The IWC claimed by the petitioner, allowed and trued up are the same, and they are as follows:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 11.4.2011	98.50	99.17	99.92	100.77	101.73
As claimed by petitioner	97.37	97.56	98.83	100.57	101.65
Allowed after true up	97.37	97.56	98.83	100.57	101.65

The IWC has reduced on account of reduction in receivables due to lower actual weighted average interest rate during 2009-14 tariff period.

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

31. The detailed computation of the various components of the trued up annual fixed charges for the transmission asset for the tariff period 2009-14 is summarised below:-



(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Gross Block</b>					
Opening Gross block	26304.65	26318.87	26318.87	26322.81	26322.81
Additional Capitalisation	14.22	0.00	3.94	0.00	0.00
Closing Gross block	26318.87	26318.87	26322.81	26322.81	26322.81
Average Gross block	26311.76	26318.87	26320.84	26322.81	26322.81
<b>Depreciation</b>					
Rate of Depreciation (%)	5.29	5.29	5.29	5.29	5.29
Depreciable Value	23680.58	23686.98	23688.76	23690.53	23690.53
Weighted Balance Useful life of the assets	33	32	31	30	29
Remaining Depreciable Value	22310.57	20924.68	19533.65	18142.52	16749.50
Depreciation	1392.42	1392.80	1392.90	1393.01	1393.01
Cumulative Depreciation	2762.30	4155.10	5548.01	6941.02	8334.04
<b>Interest on Loan</b>					
Gross Normative Loan	18455.11	18465.06	18465.06	18467.82	18467.82
Cumulative Repayment upto Previous Year	1599.77	2992.20	4385.00	5777.91	7170.93
Net Loan-Opening	16855.34	15472.86	14080.06	12689.91	11296.89
Addition due to Additional Capitalisation	9.95	0.00	2.76	0.00	0.00
Repayment during the year	1392.43	1392.80	1392.91	1393.01	1393.01
Net Loan-Closing	15472.86	14080.06	12689.91	11296.89	9903.88
Average Loan	16164.10	14776.46	13384.98	11993.40	10600.39
Weighted Average Rate of Interest on Loan (%)	2.5551	1.9437	1.9545	2.1283	1.8374
Interest	413.03	287.22	261.62	255.24	194.76
<b>Return on Equity</b>					
Opening Equity	7849.54	7853.81	7853.81	7854.99	7854.99
Addition due to Additional Capitalisation	4.27	0.00	1.18	0.00	0.00
Closing Equity	7853.81	7853.81	7854.99	7854.99	7854.99
Average Equity	7851.68	7853.81	7854.40	7854.99	7854.99
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 (%)	18.674	19.358	19.377	19.377	19.610
Return on Equity	1466.22	1520.34	1521.95	1522.06	1540.36



Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Interest on Working Capital</b>					
Maintenance Spares	87.52	92.53	97.83	103.42	109.32
O & M expenses	48.62	51.41	54.35	57.46	60.73
Receivables	658.75	652.47	654.58	660.07	659.77
Total	794.89	796.41	806.77	820.94	829.83
Interest	97.37	97.56	98.83	100.57	101.65
<b>Annual Transmission Charges</b>					
Depreciation	1392.43	1392.80	1392.91	1393.01	1393.01
Interest on Loan	413.01	287.21	261.62	255.24	194.76
Return on Equity	1466.22	1520.34	1521.95	1522.06	1540.36
Interest on Working Capital	97.37	97.56	98.83	100.57	101.65
O & M Expenses	583.45	616.89	652.21	689.49	728.82
<b>Total</b>	<b>3952.50</b>	<b>3914.81</b>	<b>3927.50</b>	<b>3960.37</b>	<b>3958.61</b>

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

32. The petitioner has claimed the transmission charges as under:-

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1393.01	1393.01	1393.01	1393.01	1393.01
Interest on Loan	162.88	138.28	113.68	89.07	64.45
Return on equity	1540.36	1540.36	1540.36	1540.36	1540.36
Interest on Working Capital	108.17	108.82	109.52	110.27	111.05
O & M Expenses	667.91	690.06	712.91	736.65	761.07
<b>Total</b>	<b>3872.33</b>	<b>3870.53</b>	<b>3869.47</b>	<b>3869.35</b>	<b>3869.94</b>

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

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	100.19	103.51	106.94	110.50	114.16
O & M expenses	55.66	57.50	59.41	61.39	63.42
Receivables	645.39	645.10	644.91	644.89	644.99
Total	801.24	806.11	811.25	816.78	822.57
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>108.17</b>	<b>108.82</b>	<b>109.52</b>	<b>110.27</b>	<b>111.05</b>



## **Capital Cost**

34. Clause (1) & (3) of Regulation 9 of the 2014 Tariff Regulations specifies 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.”

35. The petitioner has claimed capital expenditure of ₹26322.81 lakh as on 31.3.2014 including additional capitalisation during tariff period 2009-14. Further, the petitioner has not projected any additional capital expenditure during the tariff period 2014-19.

36. The trued up capital cost of ₹26322.81 lakh as on 31.3.2014 is considered for the purpose of tariff for tariff period 2014-19.

## **Additional Capital Expenditure**

37. The petitioner has not claimed any additional expenditure for the tariff period 2014-19. No additional capital expenditure has been considered for the tariff period 2014-19.

## **Debt:EquityRatio**



38. Clause 3 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(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.”

39. The petitioner has considered debt:equity ratio as 70.16:29.84 based on debt:equity ratio approved by the Commission in its Order dated 11.4.2011 in Petition No. 199/2010 for determination of tariff for the period ending 31.3.2014 and the actual debt:equity ratio for additional capitalisation. The admitted debt:equity ratio of 70.16:29.84 for the tariff period ending 31.3.2014 has been considered as opening debt:equity ratio as on 1.4.2014. The details of the debt:equity considered for the purpose of tariff for 2014-19 tariff period is as follows:-

Particulars	Amount (in ₹lakh)	(%)
Debt	18467.82	70.16
Equity	7854.99	29.84
<b>Total</b>	<b>26322.81</b>	<b>100.00</b>

### **Interest on Loan (“IOL”)**

40. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations is 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.”

41. The weighted average rate of IOL has been considered on the basis of rate prevailing as on 1.4.2014. The petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2014-19 tariff period will be adjusted at the time of truing up. Accordingly, the floating rate of interest, if any, shall be considered at the time of true up or next revision of tariff. By considering above, 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)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	18467.82	18467.82	18467.82	18467.82	18467.82
Cumulative Repayment upto COD/previous year	8563.94	9956.95	11349.96	12742.98	14135.99
Net Loan-Opening	9903.88	8510.87	7117.86	5724.84	4331.83
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	1393.01	1393.01	1393.01	1393.01	1393.01
Net Loan-Closing	8510.87	7117.86	5724.84	4331.83	2938.82
Average Loan	9207.38	7814.36	6421.35	5028.34	3635.33
Rate of Interest (%)	1.7688	1.7693	1.7701	1.7711	1.7726
<b>Interest</b>	<b>162.86</b>	<b>138.26</b>	<b>113.66</b>	<b>89.06</b>	<b>64.44</b>

### **Return on Equity(“ROE”)**

42. Clause (1)& (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specifies 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.”

43. 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.

44. 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.



45. 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 determined allowed is shown in the table below:-

<b>(₹ in lakh)</b>					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	7854.99	7854.99	7854.99	7854.99	7854.99
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Equity	7854.99	7854.99	7854.99	7854.99	7854.99
Average Equity	7854.99	7854.99	7854.99	7854.99	7854.99
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
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>	<b>1540.36</b>	<b>1540.36</b>	<b>1540.36</b>	<b>1540.36</b>	<b>1540.36</b>

### **Depreciation**

46. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provides 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.”

47. The petitioner has computed depreciation considering capital expenditure of ₹26322.81 lakh as on 31.3.2014.

48. We have considered the submission made by the petitioner with reference to depreciation. Depreciation is allowed as provided under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation claimed and allowed are given hereunder:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	26322.81	26322.81	26322.81	26322.81	26322.81
Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Gross block	26322.81	26322.81	26322.81	26322.81	26322.81
Rate of Depreciation (%)	5.29	5.29	5.29	5.29	5.29
Depreciable Value	23690.53	23690.53	23690.53	23690.53	23690.53
Remaining Depreciable Value	15356.49	13963.48	12570.47	11177.45	9784.44
<b>Depreciation</b>	<b>1393.01</b>	<b>1393.01</b>	<b>1393.01</b>	<b>1393.01</b>	<b>1393.01</b>

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



49. 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)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for Lines</b>					
<b>Norm (₹ lakh/km)</b>					
Double Circuit (Bundled conductor with four or more sub-conductors)	1.062	1.097	1.133	1.171	1.210
Double Circuit (Twin & Triple Conductor)	0.707	0.731	0.755	0.780	0.806
<b>Asset (km)</b>					
400 kV D/C Gooty-Raichur Line (D/C 4 conductors)	146.72	146.72	146.72	146.72	146.72
400 kV D/C Neelamangala-Somanahalli Line (D/C 2 Conductors)	42.004	42.004	42.004	42.004	42.004
<b>O&amp;M Expense (₹ lakh)</b>					
400 kV D/C Gooty-Raichur Line	155.82	160.95	166.23	171.81	177.53
400 kV D/C Neelamangala-Somanahalli Line	29.70	30.70	31.71	32.76	33.86
<b>Total O&amp;M Expense(line)(₹ lakh)</b>	<b>185.51</b>	<b>191.66</b>	<b>197.95</b>	<b>204.57</b>	<b>211.39</b>
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
400 kV	60.30	62.30	64.37	66.51	68.71
<b>Bays</b>					
400 kV	8	8	8	8	8
<b>Total O&amp;M expense (Bays) (₹ lakh)</b>	<b>482.4</b>	<b>498.4</b>	<b>514.96</b>	<b>532.08</b>	<b>549.68</b>
<b>Total O&amp;M expense (Lines and Bays) (₹ lakh)</b>	<b>667.91</b>	<b>690.06</b>	<b>712.91</b>	<b>736.65</b>	<b>761.07</b>

50. The petitioner has submitted that 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.

51. 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.

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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses allowed	667.91	690.06	712.91	736.65	761.07

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

53. 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;”



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

55. 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 as determined is shown in the table below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	100.19	103.51	106.94	110.50	114.16
O & M expenses	55.66	57.50	59.41	61.39	63.42
Receivables	645.39	645.09	644.91	644.89	644.99
Total	801.24	806.10	811.26	816.78	822.57
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>108.17</b>	<b>108.82</b>	<b>109.52</b>	<b>110.27</b>	<b>111.05</b>

### Annual Transmission Charges

56. 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	26322.81	26322.81	26322.81	26322.81	26322.81
Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Closing Gross Block	26322.81	26322.81	26322.81	26322.81	26322.81
Average Gross Block	26322.81	26322.81	26322.81	26322.81	26322.81
<b>Depreciation</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Depreciation (%)	5.29	5.29	5.29	5.29	5.29
Depreciable Value	23690.52	23690.52	23690.52	23690.52	23690.52
Weighted Balance Useful life of the assets	28	27	26	25	24
Remaining Depreciable Value	15356.49	13963.48	12570.46	11177.45	9784.44
Depreciation	1393.01	1393.01	1393.01	1393.01	1393.01
Cumulative Depreciation	9727.05	11120.06	12513.07	13906.09	15299.10
<b>Interest on Loan</b>					
Gross Normative Loan	18467.82	18467.82	18467.82	18467.82	18467.82
Cumulative Repayment upto Previous Year	8563.94	9956.95	11349.96	12742.97	14135.99
Net Loan-Opening	9903.89	8510.88	7117.86	5724.85	4331.84
Additional Capitalisation	0.00	0.00	0.00	0.00	0.00
Repayment during the year	1393.01	1393.01	1393.01	1393.01	1393.01
Net Loan-Closing	8510.88	7117.86	5724.85	4331.84	2938.83
Average Loan	9207.38	7814.37	6421.36	5028.34	3635.33
Weighted Average Rate of Interest on Loan (%)	1.7688	1.7693	1.7701	1.7711	1.7726
Interest	162.86	138.26	113.66	89.06	64.44
<b>Return on Equity</b>					
Opening Equity	7854.98	7854.98	7854.98	7854.98	7854.98
Additions	0.00	0.00	0.00	0.00	0.00
Closing Equity	7854.98	7854.98	7854.98	7854.98	7854.98
Average Equity	7854.98	7854.98	7854.98	7854.98	7854.98
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax ) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	1540.36	1540.36	1540.36	1540.36	1540.36
<b>Interest on Working Capital</b>					
Maintenance Spares	100.19	103.51	106.94	110.50	114.16
O & M expenses	55.66	57.50	59.41	61.39	63.42
Receivables	645.39	645.09	644.91	644.89	644.99
Total	801.23	806.10	811.26	816.78	822.57
Interest	108.17	108.82	109.52	110.26	111.05
<b>Annual Transmission Charges</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1393.01	1393.01	1393.01	1393.01	1393.01
Interest on Loan	162.86	138.26	113.66	89.06	64.44
Return on Equity	1540.36	1540.36	1540.36	1540.36	1540.36
Interest on Working Capital	108.17	108.82	109.52	110.26	111.05
O & M Expenses	667.91	690.06	712.91	736.65	761.07
<b>Total</b>	<b>3872.31</b>	<b>3870.52</b>	<b>3869.46</b>	<b>3869.35</b>	<b>3869.93</b>

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

57. 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**

58. 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) of Regulation 52 of the 2014 Tariff Regulations, respectively.

### **Service Tax**

59. 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.

### **Deferred Tax Liability**

60. The petitioner has sought recovery of deferred tax liability before 1.4.2009 from the beneficiaries or long term consumers/ DICs as and when materialized under Regulation 49 of the 2014 Tariff Regulations. The deferred tax liability shall be dealt as per Regulation 49 of the 2014 Tariff Regulations, as amended. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same materializes directly from the beneficiaries or long term transmission customers /DICs.

### **Sharing of Transmission Charges**

61. 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 Regulations.

62. This order disposes of Petition No. 369/TT/2014.

sd/-

**(Dr. M. K. Iyer)**  
**Member**

sd/-

**(A.S. Bakshi)**  
**Member**



## ANNEXURE-I

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

(□ in lakh)

Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
<b>IBRD-II (Exchange Rate @44.56)</b>					
Gross Opening Loan	2947.96	2947.96	2947.96	2947.96	2947.96
Cumulative Repayment of loan upto previous year	320.52	463.61	615.91	778.03	950.63
Net Loan Opening	2627.44	2484.35	2332.05	2169.93	1997.33
Additions during the year	0.00	0	0	0	0
Repayment during the year	143.09	152.3	162.12	172.6	183.71
Net Loan Closing	2484.35	2332.05	2169.93	1997.33	1813.62
Average Loan	2555.90	2408.20	2250.99	2083.63	1905.48
Rate of Interest	2.54%	1.98%	1.94%	2.10%	1.82%
Interest	64.86	47.74	43.58	43.77	34.62
<b>IBRD-II (Exchange Rate @41.49)</b>					
Gross Opening Loan	7738.01	7738.01	7738.01	7738.01	7738.01
Cumulative Repayment of loan upto previous year	845.16	1220.55	1620.08	2045.39	2498.20
Net Loan Opening	6892.85	6517.46	6117.93	5692.62	5239.81
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	375.39	399.53	425.31	452.81	481.95
Net Loan Closing	6517.46	6117.93	5692.62	5239.81	4757.86
Average Loan	6705.16	6317.70	5905.28	5466.22	4998.84
Rate of Interest	2.54%	1.98%	1.94%	2.10%	1.82%
Interest	170.15	125.24	114.33	114.83	90.82
<b>IBRD-III (Exchange Rate @41.49)</b>					



Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Opening Loan	5263.42	5263.42	5263.42	5263.42	5263.42
Cumulative Repayment of loan upto previous year	0.00	0.00	0.00	256.13	523.45
Net Loan Opening	5263.42	5263.42	5263.42	5007.29	4739.97
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	256.13	267.32	278.90
Net Loan Closing	5263.42	5263.42	5007.29	4739.97	4461.07
Average Loan	5263.42	5263.42	5135.36	4873.63	4600.52
Rate of Interest	2.58%	1.89%	1.98%	2.16%	1.86%
Interest	135.73	99.72	101.53	105.32	85.62
<b>IBRD-III (Exchange Rate @40.93)</b>					
Gross Opening Loan	230.60	230.60	230.60	230.60	230.60
Cumulative Repayment of loan upto previous year	0.00	0.00	0.00	11.22	22.93
Net Loan Opening	230.60	230.60	230.60	219.38	207.67
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	11.22	11.71	12.22
Net Loan Closing	230.60	230.60	219.38	207.67	195.45
Average Loan	230.60	230.60	224.99	213.53	201.56
Rate of Interest	2.58%	1.89%	1.98%	2.16%	1.86%
Interest	5.95	4.37	4.45	4.61	3.75
<b>IBRD-III (Exchange Rate @40.81)</b>					
Gross Opening Loan	600.15	600.15	600.15	600.15	600.15
Cumulative Repayment of loan upto previous year	0.00	0.00	0.00	29.20	59.68
Net Loan Opening	600.15	600.15	600.15	570.95	540.47
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	29.20	30.48	31.80
Net Loan Closing	600.15	600.15	570.95	540.47	508.67
Average Loan	600.15	600.15	585.55	555.71	524.57
Rate of Interest	2.58%	1.89%	1.98%	2.16%	1.86%
Interest	15.48	11.37	11.58	12.01	9.76
<b>IBRD-III (Exchange Rate @39.54)</b>					
Gross Opening Loan	216.52	216.52	216.52	216.52	216.52



Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
Cumulative Repayment of loan upto previous year	0.00	0.00	0.00	10.54	21.54
Net Loan Opening	216.52	216.52	216.52	205.98	194.98
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	10.54	11.00	11.47
Net Loan Closing	216.52	216.52	205.98	194.98	183.51
Average Loan	216.52	216.52	211.25	200.48	189.25
Rate of Interest	2.58%	1.89%	1.98%	2.16%	1.86%
Interest	5.58	4.10	4.18	4.33	3.52
<b>IBRD-III (Exchange Rate @39.87)</b>					
Gross Opening Loan	519.62	519.62	519.62	519.62	519.62
Cumulative Repayment of loan upto previous year	0.00	0.00	0.00	25.29	51.68
Net Loan Opening	519.62	519.62	519.62	494.33	467.94
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	25.29	26.39	27.53
Net Loan Closing	519.62	519.62	494.33	467.94	440.41
Average Loan	519.62	519.62	506.98	481.14	454.18
Rate of Interest	2.58%	1.89%	1.98%	2.16%	1.86%
Interest	13.40	9.84	10.02	10.40	8.45
<b>Total Loan</b>					
Gross Opening Loan	17516.28	17516.28	17516.28	17516.28	17516.28
Cumulative Repayment of loan upto previous year	1165.68	1684.16	2235.99	3155.80	4128.11
Net Loan Opening	16350.60	15832.12	15280.29	14360.48	13388.17
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	518.48	551.83	919.81	972.31	1027.58
Net Loan Closing	15832.12	15280.29	14360.48	13388.17	12360.59
Average Loan	16091.36	15556.21	14820.39	13874.33	12874.38
Weighted Average Rate of Interest	2.5551%	3.5822%	3.7591%	2.1281%	1.8373%
<b>Interest</b>	<b>411.15</b>	<b>302.39</b>	<b>289.66</b>	<b>295.27</b>	<b>236.55</b>



## **ANNEXURE-II**

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

(₹ in lakh)

Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
<b>IBRD-II (Exchange Rate @44.56)</b>					
Gross Opening Loan	2947.96	2947.96	2947.96	2947.96	2947.96
Cumulative Repayment of loan upto previous year	1134.34	1329.95	1538.13	1759.77	1995.7
Net Loan Opening	1813.62	1618.01	1409.83	1188.19	952.26
Additions during the year	0.00	0	0	0	0
Repayment during the year	195.61	208.18	221.64	235.93	251.14
Net Loan Closing	1618.01	1409.83	1188.19	952.26	701.12
Average Loan	1715.82	1513.92	1299.01	1070.23	826.69
Rate of Interest	1.75%	1.75%	1.75%	1.75%	1.75%
Interest	30.02	26.49	22.73	18.73	14.46
<b>IBRD-II (Exchange Rate @41.49)</b>					
Gross Opening Loan	7738.01	7738.01	7738.01	7738.01	7738.01
Cumulative Repayment of loan upto previous year	2980.15	3493.30	4039.45	4620.92	5239.86
Net Loan Opening	4757.86	4244.71	3698.56	3117.09	2498.15
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	513.15	546.15	581.47	618.94	658.82
Net Loan Closing	4244.71	3698.56	3117.09	2498.15	1839.33
Average Loan	4501.29	3971.64	3407.83	2807.62	2168.74
Rate of Interest	1.75%	1.75%	1.75%	1.75%	1.75%
Interest	78.76	69.49	59.63	49.12	37.95



Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
<b>IBRD-III (Exchange Rate @41.49)</b>					
Gross Opening Loan	5263.42	5263.42	5263.42	5263.42	5263.42
Cumulative Repayment of loan upto previous year	802.35	1093.35	1396.98	1713.91	2044.59
Net Loan Opening	4461.07	4170.07	3866.44	3549.51	3218.83
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	291.00	303.63	316.93	330.68	345.02
Net Loan Closing	4170.07	3866.44	3549.51	3218.83	2873.81
Average Loan	4315.57	4018.26	3707.98	3384.17	3046.32
Rate of Interest	1.79%	1.79%	1.79%	1.79%	1.79%
Interest	77.25	71.93	66.37	60.58	54.53
<b>IBRD-III (Exchange Rate @40.93)</b>					
Gross Opening Loan	230.60	230.60	230.60	230.60	230.60
Cumulative Repayment of loan upto previous year	35.15	47.90	61.20	75.08	89.57
Net Loan Opening	195.45	182.70	169.40	155.52	141.03
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	12.75	13.30	13.88	14.49	15.12
Net Loan Closing	182.70	169.40	155.52	141.03	125.91
Average Loan	189.08	176.05	162.46	148.28	133.47
Rate of Interest	1.79%	1.79%	1.79%	1.79%	1.79%
Interest	3.38	3.15	2.91	2.65	2.39
<b>IBRD-III (Exchange Rate @40.81)</b>					
Gross Opening Loan	600.15	600.15	600.15	600.15	600.15
Cumulative Repayment of loan upto previous year	91.48	124.66	159.28	195.42	233.13
Net Loan Opening	508.67	475.49	440.87	404.73	367.02
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	33.18	34.62	36.14	37.71	39.34
Net Loan Closing	475.49	440.87	404.73	367.02	327.68
Average Loan	492.08	458.18	422.80	385.88	347.35
Rate of Interest	1.79%	1.79%	1.79%	1.79%	1.79%
Interest	8.81	8.20	7.57	6.91	6.22
<b>IBRD-III (Exchange Rate @39.54)</b>					



Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	216.52	216.52	216.52	216.52	216.52
Cumulative Repayment of loan upto previous year	33.01	44.98	57.47	70.51	84.11
Net Loan Opening	183.51	171.54	159.05	146.01	132.41
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	11.97	12.49	13.04	13.60	14.19
Net Loan Closing	171.54	159.05	146.01	132.41	118.22
Average Loan	177.53	165.30	152.53	139.21	125.32
Rate of Interest	1.79%	1.79%	1.79%	1.79%	1.79%
Interest	3.18	2.96	2.73	2.49	2.24
<b>IBRD-III (Exchange Rate @39.87)</b>					
Gross Opening Loan	519.62	519.62	519.62	519.62	519.62
Cumulative Repayment of loan upto previous year	79.21	107.94	137.91	169.20	201.85
Net Loan Opening	440.41	411.68	381.71	350.42	317.77
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	28.73	29.97	31.29	32.65	34.06
Net Loan Closing	411.68	381.71	350.42	317.77	283.71
Average Loan	426.05	396.70	366.07	334.10	300.74
Rate of Interest	1.79%	1.79%	1.79%	1.79%	1.79%
Interest	7.63	7.10	6.55	5.98	5.38
<b>Total Loan</b>					
Gross Opening Loan	17516.28	17516.28	17516.28	17516.28	17516.28
Cumulative Repayment of loan upto previous year	5155.69	6242.08	138.20	1352.59	2636.59
Net Loan Opening	12360.59	11274.20	10125.86	8911.47	7627.47
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	1086.39	1148.34	1214.39	1284.00	1357.69
Net Loan Closing	11274.20	10125.86	8911.47	7627.47	6269.78
Average Loan	11817.40	10700.03	9518.67	8269.47	6948.63
<b>Weighted Average Rate of Interest</b>	<b>1.7688%</b>	<b>1.7693%</b>	<b>1.7701%</b>	<b>1.7711%</b>	<b>1.7726%</b>
<b>Interest</b>	<b>209.03</b>	<b>189.32</b>	<b>168.49</b>	<b>146.46</b>	<b>123.17</b>

