

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 513/TT/2014**

**Coram:**

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

**Date of Hearing : 16.11.2015**

**Date of Order : 31.12.2015**

**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 Singrauli Transmission System in Northern 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. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.  
Vidyut Bhawan, Vidyut Marg,  
Jaipur-302 005
2. Ajmer Vidyut Vitran Nigam Ltd.  
400 kV GSS Building (Ground Floor), Ajmer Road  
Heerapura, Jaipur
3. Jaipur Vidyut Vitran Nigam Ltd.  
400 kV GSS Building (Ground Floor), Ajmer Road  
Heerapura, Jaipur
4. Jodhpur Vidyut Vitran Nigam Ltd.  
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 Electricity Board  
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 Deptt.  
Govt. of Jammu & Kashmir  
Mini Secretariat, Jammu
9. Uttar Pradesh Power Corporation Ltd.  
Shakti Bhawan, 14, Ashok Marg  
Lucknow- 226001
10. Delhi Transco Ltd.  
Shakti Sadan, Kotla Road  
New Delhi- 110002
11. BSES Yamuna Power Ltd.  
BSES Bhawan, Nehru Place  
New Delhi
12. BSES Rajdhani Power Ltd.  
BSES Bhawan, Nehru Place  
New Delhi
13. North Delhi Power Ltd.  
Power Trading & Load Dispatch Group  
Cennet Building  
Pitampura, New Delhi-110034
14. Chandigarh Administration  
Sector-9, Chandigarh
15. Uttarakhand Power Corporation Ltd.  
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 S.K. Narayan, PGCIL  
Shri Jasbir Singh, PGCIL  
Shri S.S. Raju, PGCIL  
Shri R.K. Arora, PGCIL  
Smt. Sangeeta Edwards, PGCIL  
Shri S.C. Taneja, PGCIL  
Shri M.M. Mondal, PGCIL  
Shri S.K. Venkatesan, PGCIL  
Shri Sashi Bhushan, PGCIL  
Shri Ved Prakash Rastogi, PGCIL  
Shri Pramod Kumar, PGCIL

For Respondent: Shri S.K. Aggarwal, Advocate, JVVNL  
Shri Tarun Ahuja, JVVNL  
Shri B.L. Sharma, JVVNL

### **ORDER**

The present petition has been preferred by Power Grid Corporation of India Ltd. ('the petitioner'), a transmission licensee, for trueing up of capital expenditure and tariff for Singrauli Transmission System in Northern Region (hereinafter referred as "transmission asset") under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations") based on actual expenditure for the period 1.4.2009 to 31.3.2014, and for determination of tariff under the 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 transmission and distribution licensees or centralised power procurement companies of States, who are procuring transmission service from the petitioner, mainly beneficiaries of Northern 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 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. During the hearing, the learned counsel for the Rajasthan Discoms requested for two weeks time to file their reply and the Commission granted the same. The Commission during the hearing observed that in case no information is filed within the due date, the matter shall be considered based on the available records. None of the respondents have filed any reply to the petition. 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 transmission system associated with Singrauli STPS was approved by the Central Government in two stages. For the first stage, the investment approval for the transmission assets was approved by Ministry of Power vide its letter dated 20.1.1978 at an estimated cost of ₹3164.00 lakh. A revised capital investment for the first stage was approved by Ministry of Power vide letter dated 18.11.1982 at a cost of ₹3764.00 lakh. For the second stage, the investment approval for the transmission assets



was approved by Ministry of Power vide its letter dated 24.1.1981 at an estimated cost of ₹16541.00 lakh. Subsequently, the investment approval for the entire transmission system was accorded by Ministry of Power vide its letter dated 8.1.1987 at an estimated cost of ₹25605.00 lakh. The asset was put under commercial operation as stated below:

Sr. No.	Particulars	COD	Unit
	<b>Transmission Line</b>		<b>Length (km)</b>
1	400 kV S/C twin conductor Singrauli- Anpara-II T/L	5.4.1982	25.057
2	400 kV S/C twin conductor Singrauli- Kanpur-I T/L	27.5.1983	447.000
3	400 kV S/C twin conductor Singrauli- Kanpur-II T/L	14.3.1987	424.150
4	400 kV S/C twin conductor Singrauli- Lucknow T/L	1.6.1986	408.600
5	400 kV S/C twin conductor Lucknow-Moradabad T/L	1.6.1986	331.177
6	400 kV S/C twin conductor Moradabad - Muradnagar T/L	1.6.1986	133.000
7	400 kV S/C twin conductor Moradabad – Dadri T/L	16.10.1984	33.098
8	400 kV S/C twin conductor Dadri- Panipat T/L	16.10.1984	112.322
9	400 kV S/C twin conductor Kanpur- Agra T/L	26.11.1986	238.805
10	400 kV S/C twin conductor Agra- Bassi T/L	30.11.1986	210.331
11	400 kV S/C twin conductor Kanpur-Panki-I, T/L	27.5.1983	5.622
12	400 kV S/C twin conductor Kanpur-Panki-II, T/L	27.5.1983	5.700
	<b>Sub-Station</b>		<b>No. of bays</b>
	400 kV Agra Sub-Station:		
1	400 kV Kanpur bay	14.3.1987	1
2	400 kV Bassi bay	14.3.1987	1
	400 kV Lucknow Sub-Station:		
1	400 kV Singrauli =bay	1.10.2010	1
2	400 kV Moradabad bay	1.10.2010	1
	400 kV Moradabad Sub-Station:		
1	400 kV Lucknow bay	1.6.1986	1
2	400 kV Muradnagar bay	1.6.1986	1
	400 kV Muradnagar Sub-Station:		
1	400 kV Moradabad bay	1.6.1986	1
2	400 kV Dadri bay	1.11.1984	1
3	400 kV DadBus Reactor bay	1.6.1986	1
	400 kV Kanpur Sub-Station:		
1	400 kV Singrauli-I bay	1.6.1983	1



Sr. No.	Particulars	COD	Unit
2	400 kV Singrauli-II bay	14.3.1987	1
3	400 kV Panki-I bay	1.6.1983	1
4	400 kV Panki-II bay	14.3.1987	1
5	400 kV Agra bay	14.3.1987	1
	400 kV Anpara Sub-Station:		
1	400 kV Singrauli bay	1.2.1982	1
	400 kV Panki Sub-Station:		
1	400 kV Kanpur-I bay	1.6.1983	1
2	400 kV Kanpur-II bay	1.6.1983	1
	400 kV Bassi Sub-Station:		
1	400 kV Agra bay	28.7.1990	1
2	400 kV Bus Reactor bay	28.7.1990	1

- b. The tariff for period from 1.4.2001 to 31.3.2004 was allowed vide order dated 31.7.2003 in Petition No. 13/2002.
- c. The tariff for period from 1.4.2004 to 31.3.2009 was allowed vide order dated 30.11.2005 in Petition No. 102/2004 in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004. The same was revised vide order dated 27.9.2010 in Petition No. 149/2010 due to de-capitalization during 2008-09.
- d. The tariff for tariff period 2009-14 was allowed vide order dated 13.8.2012 in Petition No. 316/2010 in accordance with the 2009 Tariff Regulations. The tariff allowed vide order dated 13.8.2012 for the tariff period 2009-14 is as under:-

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	345.95	345.95	357.09	386.43	404.30
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2056.06	2056.06	2061.16	2073.55	2080.84
Interest on Working Capital	142.39	147.62	153.58	160.37	167.11
O & M Expenses	1845.80	1950.30	2062.77	2181.05	2305.30
<b>Total</b>	<b>4390.20</b>	<b>4499.93</b>	<b>4634.61</b>	<b>4801.40</b>	<b>4957.55</b>



- e. The Commission, in its order dated 13.8.2012 in Petition No. 316/2010, has determined the tariff based on admitted capital cost of ₹23474.88 lakh as on 31.3.2009. Further, the Commission had approved additional capital expenditure of ₹211.90 lakh and ₹308.10 lakh and de-capitalisation of ₹17.51 lakh and ₹30.04 lakh during 2011-12 and 2012-13, respectively, totalling to additional capital expenditure of ₹520.01 lakh and de-capitalization of ₹47.55 lakh for the tariff period 2009-14.
- 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 2009-14 tariff period.
- g. The instant petition was filed on 28.11.2014.

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

5. The truing up of tariff for the 2009-14 tariff period has been determined as discussed below.

#### **Capital Cost**

6. The petitioner has claimed admitted capital cost of ₹23474.88 lakh as on 31.3.2009 for the purpose of tariff. In addition to this, the petitioner has claimed additional capitalisation of ₹190.23 lakh and ₹164.49 lakh for 2009-10 and 2010-11, respectively, due to replacement of new polymer insulators.
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 duly trued up by excluding un-discharged liability, if any, as on 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 13.8.2012 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 ₹23474.88 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 during 2009-10 and 2010-11 for expenditure incurred towards replacement of old porcelain insulators with new polymer insulators. During 2009-10 and 2010-11, old porcelain insulators amounting to ₹66.59 lakh and ₹72.03 lakh have been replaced by new polymer insulators amounting to ₹256.82 lakh and ₹236.52 lakh, respectively with de-capitalisation of ₹66.59 lakh and ₹72.03 lakh in 2009-10 and 2010-11 respectively. Therefore, the net add-cap on account of replacement of polymer insulators is ₹190.23 lakh and ₹164.49 lakh for 2009-10 and 2010-11, respectively as approved in order dated 7.2.2013 in Petition No. 305/2010. Further, the petitioner has also submitted the Auditor’s Certificate to verify the actual additional capital expenditure incurred in 2009-14.

10. Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations provides as follows:-





“(1) 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:

Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.”

11. The Commission in its order dated 13.8.2012 had approved the additional capitalization of ₹211.90 lakh and ₹308.10 lakh and de-capitalisation of ₹17.51 lakh and ₹30.04 lakh during 2011-12 and 2012-13, respectively, for the tariff period 2009-14 on account of expenditure incurred after the cut-off date under Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations. However, the petitioner has not claimed this additional capitalization and de-capitalisation in the 2009-14 tariff period, and has claimed this expenditure in the 2014-19 tariff period, as spill-over schemes, as discussed subsequently in this order.

12. The Commission vide its order dated 7.2.2013 in Petition No. 305/2010, approved the additional capitalisation for replacement of insulators in fog and pollution affected stretches of existing Northern Region transmission lines in and around NCR and other polluted stretches by polymer (composite long rod) insulators. The additional capitalisation approved by the Commission in the said order for this asset is ₹256.82 lakh and ₹236.52 lakh during 2009-10 and 2010-11, respectively. The Commission in the said order also approved the de-



capitalisation amounting to ₹66.59 lakh and ₹72.03 lakh during 2009-10 and 2010-11, respectively, towards old porcelain insulators.

13. Further, the Commission at para 43 in its order dated 7.2.2013 in Petition No. 305/2010 also directed the petitioner as follows:

“The petitioner is directed to approach the Commission alongwith the details of Gross Block of dismantled insulators, their accumulated depreciation, dates of removal from the original transmission lines and dates on which they are capitalized at other places/regions. The petitioner is also directed to provide cost details of remaining porcelain insulators.”

14. The petitioner in instant petition has claimed actual additional capitalisation and de-capitalisation in 2009-10 and 2010-11 on account of replacement of porcelain insulators, which is same as that approved by the Commission vide its Order dated 7.2.2013 in Petition No. 305/2010. Also, the petitioner has submitted the Auditor’s Certificate to verify the actual additional capital expenditure incurred in 2009-10 and 2010-11 on account of replacement of porcelain insulators with polymer insulators and there is no variation in figures. As the Commission vide its order dated 7.2.2013 had approved the additional capitalisation and de-capitalisation amounts considering the gross block of the removed porcelain insulators and new polymer insulators, therefore, the Commission has considered the petitioner’s submission and allows additional capitalisation of ₹256.82 lakh and ₹236.52 lakh towards new insulators and de-capitalisation of ₹66.59 lakh and ₹72.03 lakh during 2009-10 and 2010-11, respectively, towards old porcelain insulators in accordance with Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations. Accordingly, the net additional capitalisation of ₹190.23 lakh and ₹164.49 lakh is allowed during 2009-10 and 2010-11, respectively.



15. The total capital cost of the transmission asset including additional capitalisation incurred during 2009-10 and 2010-11 works out to ₹23829.60 lakh. The Commission approves the total capital cost claimed by the petitioner. The summary of capital cost including additional capitalization is shown in Table below:-

(₹ in lakh)

Cost as per Investment Approval dated 8.1.1987: ₹ 25605.00 lakh									
Particulars	Admitted capital cost as on 31.3.2009	Additional capitalisation			De-capitalisation			Total additional capitalisation	Total capital cost including additional capitalisation
		2009-10	2010-11	2011-12 to 2012-13	2009-10	2010-11	2011-12 to 2012-13		
Approved in order dated 13.8.2012	23474.88	0.00	0.00	520.01	0.00	0.00	47.55	472.47*	23947.35
Approved (Add Cap) in order dated 7.2.2013 towards replacement of Insulators	-	256.82	236.52	0.00	66.59	72.03	0.00	354.72	354.72
Actual	23474.88	256.82	236.52	0.00	66.59	72.03	0.00	354.72	23829.60

Note: \* - Claimed by Petitioner in 2014-19 period

### **Debt: Equity**

16. 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.”

17. The petitioner has claimed true up Annual Fixed Charge based on debt:equity ratio of 49.90:50.10 as considered by the Commission in its order dated 13.8.2012 in Petition No. 316/2010. The transmission assets covered in



the instant petition were commissioned prior to 1.4.2009. In its order dated 13.8.2012 in Petition No. 316/2010, the Commission has considered admitted debt:equity ratio as on 31.3.2009 vide order dated 27.9.2010. The admitted debt:equity ratio of 49.90:50.10 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 for tariff period 2009-14, as given under:-

Funding	Amount (₹ in lakh)	(%)
Debt	11713.18	49.90
Equity	11761.70	50.10
<b>Total</b>	<b>23474.88</b>	<b>100.00</b>

18. With respect to additional capitalization, the petitioner has submitted the debt:equity ratio of 70:30 for 2009-10 and 2010-11. In this regard, the the petitioner was directed to submit an undertaking on affidavit that the actual equity infused for the additional capital expenditure in tariff period 2009-14 is not less than 30%. The petitioner, in response, vide its affidavit dated 4.12.2015 submitted that as per Clause 3 of Regulation 12 of the 2009 Tariff Regulations, additional expenditure in tariff period 2009-14 is to be serviced in debt:equity ratio of 70:30. Since, actual loan deployed for all the years are at 70%, balance 30% amount has been deployed as equity. Further, the actual debt and equity infused during tariff period 2009-14 is as given below:

Sr. No.	Financial Year	Total additional capitalisation (in ₹ lakh)	Actual debt (in ₹ lakh)	Actual equity (in ₹ lakh)	Debt : Equity
1	2009-10	190.23	133.16	57.07	70:30
2	2010-11	164.49	115.14	49.35	70:30
3	2011-12	0.00	0.00	0.00	-
4	2012-13	0.00	0.00	0.00	-
5	2013-14	0.00	0.00	0.00	-



19. Debt: equity ratio is allowed in accordance with Clause 2 of Regulation 12 of the 2009 Tariff Regulations. The overall debt equity as on 31.3.2014 including additional capitalization is as under:-

Funding	Amount (in ₹ lakh)	(%)
Debt	11961.48	50.20
Equity	11868.12	49.80
<b>Total</b>	<b>23829.60</b>	<b>100.00</b>

### **Interest on Loan (“IOL”)**

20. The petitioner has not claimed any interest on loan for the tariff period 2009-14, as the complete loan has already been repaid before 01.04.2004. Consequent to the additional capital expenditure during the tariff period 2009-14, there is an addition to the normative loan amounting to ₹133.16 lakh and ₹115.14 lakh during 2009-10 and 2010-11, respectively. However, this loan too gets repaid during the same year as depreciation has been considered as repayment and the net loan closing is zero at the end of the above stated periods.

21. In view of the fact that the average loan during the tariff period 2009-14 is zero, the concept of weighted average rate of interest is not applicable in this case. Accordingly, IOL has been considered as NIL for the purpose of truing up of tariff.

### **Return on Equity (“ROE”)**

22. Clause (3), (4) and (5) of the 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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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.”

23. The petitioner has submitted that MAT rate of 11.330% applicable for 2008-09 was considered in the order dated 13.8.2012. 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 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 below:-

Particulars	MAT Rate	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%

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

Particulars	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 13.8.2012	2056.06	2056.06	2061.16	2073.55	2080.84
As claimed by the petitioner	2201.71	2292.66	2299.69	2299.69	2327.34
Allowed after trued up	2201.71	2292.65	2299.68	2299.68	2327.34



25. The return on equity allowed in the instant order is more than the return on equity allowed vide order dated 13.8.2012 due to increase in equity on account of additional capitalisation and increase in the applicable MAT rate for the purpose of grossing up of base rate of return on equity.

### **Depreciation**

26. 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."

27. The Commission, in its order dated 13.8.2012, has worked out the depreciation in accordance with Regulation 17 of the 2009 Tariff Regulations considering useful life of 34 years. As per the order dated 27.9.2010 in Petition No. 149/2010 and order dated 13.8.2012 in Petition No. 316/2010, balance useful life of the asset was 12 years as on 1.4.2008 and depreciation was spread over the balance useful life. Accordingly, the same approach has been continued in the instant order.

28. 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 and additional capitalisation as under:-



(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 13.8.2012	345.95	345.95	357.09	386.43	404.30
As claimed by the petitioner	353.74	369.70	377.92	377.93	377.89
Allowed after trued up	353.73	369.69	377.91	377.91	377.91

29. The depreciation allowed in the instant order is at variance with the depreciation allowed vide order dated 13.8.2012 due to variation in additional capitalisation for 2009-14. During tariff period 2009-14, the total actual additional capitalisation is ₹190.23 lakh and ₹164.49 lakh in 2009-10 and 2010-11, respectively, as against the approved additional capitalisation of ₹194.39 lakh and ₹278.06 lakh in 2011-12 and 2012-13, respectively.

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

30. The petitioner has computed O&M Expenses for the assets mentioned in the petition, in accordance with the O&M norms for 400 kV S/C twin conductor transmission line and 400 kV bay specified in Regulation 19(g) of the 2009 Tariff Regulations. Accordingly, the O&M Expenses have been worked out as given below:-

Particulars		2009-10	2010-11	2011-12	2012-13	2013-14
Actual line length (km)	400 kV S/C (Twin conductor)	2374.862	2374.862	2374.862	2374.862	2374.862
Actual (No. of bays)	400 kV Bays	19	19	19	19	19
Norms as per Regulation	400 kV S/C (Twin & Triple Conductor) (₹ lakh/km)	0.358	0.378	0.4	0.423	0.447
	400 kV Bays (₹ lakh/bay)	52.40	55.40	58.57	61.92	65.46
<b>Total (₹ in lakh)</b>		<b>1845.80</b>	<b>1950.30</b>	<b>2062.77</b>	<b>2181.05</b>	<b>2305.30</b>





31. The O&M Expenses claimed by the petitioner for the tariff period 2009-14 are same as that approved in the tariff order dated 13.8.2012 in Petition No. 316/2010. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are the same, and are as follows:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 13.8.2012	1845.80	1950.30	2062.77	2181.05	2305.30
As claimed by the petitioner	1845.80	1950.30	2062.77	2181.05	2305.30
Allowed after trued up	1845.80	1950.30	2062.77	2181.05	2305.30

**Interest on working capital (“IWC”)**

32. 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.

33. 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 Regulations.

34. The Commission in its order dated 13.8.2012 in Petition No. 316/2010 approved rate of interest on working capital of 12.25% applicable for 2008-09. In accordance with clause (3) of Regulation 18 of the 2009 Tariff Regulations, 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.

35. The IWC trued up is as under:-

(₹ in lakh)					
Interest on Working Capital	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	276.87	292.54	309.42	327.16	345.80
O & M Expenses	153.82	162.52	171.90	181.75	192.11
Receivables	757.80	794.28	816.56	837.26	863.71
Total	1188.49	1249.35	1297.87	1346.17	1401.61
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
<b>Interest</b>	<b>145.59</b>	<b>153.05</b>	<b>158.99</b>	<b>164.91</b>	<b>171.70</b>

36. The IWC claimed by the petitioner, allowed and trued up are as shown in the table below:-

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Approved vide order dated 13.8.2012	142.39	147.62	153.58	160.37	167.11
As claimed by the petitioner	145.59	153.05	158.99	164.91	171.70
Allowed after trued up	145.59	153.05	158.99	164.91	171.70

37. The IWC has increased on account of increase in receivables due to increase in RoE and Depreciation on account of additional capital expenditure and variation in ROE on account of applicable MAT rate during the 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 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	23474.88	23665.11	23829.60	23829.60	23829.60
Additional Capitalization	190.23	164.49	0.00	0.00	0.00
Closing Gross block	23665.11	23829.60	23829.60	23829.60	23829.60
Average Gross block	23570.00	23747.36	23829.60	23829.60	23829.60
<b>Depreciation</b>					
Rate of Depreciation (%)	1.501	1.557	1.586	1.586	1.586
Depreciable Value	21130.20	21289.82	21363.84	21363.84	21363.84
Elapsed Life of the assets at beginning of the year	23	24	25	26	27
Weighted Balance Useful life of the assets	11	10	9	8	7
Remaining Depreciable Value	3891.01	3696.90	3401.23	3023.32	2645.40
Depreciation	353.73	369.69	377.91	377.91	377.91
<b>Interest on Loan</b>					
Gross Normative Loan	11713.18	11846.34	11961.48	11961.48	11961.48
Cumulative Repayment upto Previous Year	11713.18	11846.34	11961.48	11961.48	11961.48
Net Loan-Opening	0.00	0.00	0.00	0.00	0.00
Additions	133.16	115.14	0.00	0.00	0.00
Repayment during the year	133.16	115.14	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan (%)	8.8000	8.7517	8.7258	8.7258	8.7241
Interest	0.00	0.00	0.00	0.00	0.00
<b>Return on Equity</b>					
Opening Equity	11761.70	11818.77	11868.12	11868.12	11868.12



Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Additions	57.07	49.35	0.00	0.00	0.00
Closing Equity	11818.77	11868.12	11868.12	11868.12	11868.12
Average Equity	11790.23	11843.44	11868.12	11868.12	11868.12
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)	2201.71	2292.65	2299.68	2299.68	2327.34
<b>Interest on Working Capital</b>					
Maintenance Spares	276.87	292.54	309.42	327.16	345.80
O & M Expenses	153.82	162.52	171.90	181.75	192.11
Receivables	757.80	794.28	816.56	837.26	863.71
Total	1188.49	1249.35	1297.87	1346.17	1401.61
Interest	145.59	153.05	158.99	164.91	171.70
<b>Annual Transmission Charges</b>					
Depreciation	353.73	369.69	377.91	377.91	377.91
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2201.71	2292.65	2299.68	2299.68	2327.34
Interest on Working Capital	145.59	153.05	158.99	164.91	171.70
O & M Expenses	1845.80	1950.30	2062.77	2181.05	2305.30
<b>Total</b>	<b>4546.83</b>	<b>4765.69</b>	<b>4899.36</b>	<b>5023.55</b>	<b>5182.25</b>

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

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	425.60	546.95	666.56	741.53	775.31
Interest on Loan	0.84	0.84	0.00	0.00	0.00
Return on Equity	2346.03	2385.70	2416.97	2431.68	2436.09
Interest on Working Capital	180.11	187.75	195.22	201.36	206.52
O & M Expenses	2105.14	2176.39	2248.97	2322.88	2400.30
<b>Total</b>	<b>5057.72</b>	<b>5297.63</b>	<b>5527.72</b>	<b>5697.45</b>	<b>5818.22</b>



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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	315.77	326.46	337.35	348.43	360.05
O & M Expenses	175.43	181.37	187.41	193.57	200.03
Receivables	842.95	882.94	921.29	949.58	969.70
Total	1334.15	1390.77	1446.05	1491.58	1529.78
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>180.11</b>	<b>187.75</b>	<b>195.22</b>	<b>201.36</b>	<b>206.52</b>

### **Capital Cost**

41. Clause (1) and (3) of Regulation 9 of the 2014 Tariff Regulations provides 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 ₹ 23829.60 lakh as on 31.3.2014 including additional capitalization of ₹493.34 lakh and de-capitalization of ₹138.62 lakh during the 2009-14 tariff period.

43. The trued up capital cost of ₹23829.60 lakh as on 1.4.2014 is considered for the purpose of tariff for tariff period 2014-19.



### **Additional Capital Expenditure**

44. The petitioner has claimed the additional capitalization of ₹635.59 lakh, ₹713.00 lakh, ₹350.00 lakh, and ₹150.00 lakh for 2014-15, 2015-16, 2016-17, and 2017-18, respectively, on account of additional capitalisation under Clause (3)(ix) of Regulation 14 of the 2014 Tariff Regulations. The Commission observed that the additional capital expenditure in 2014-15 is on account of spill over and for replacement of additional equipment. Accordingly, the petitioner was directed to provide detailed breakup of additional capital expenditure claimed in 2014-15 into (i) spill over from 2009-14 and (ii) towards replacement of additional equipment.

45. The Commission in its order dated 13.8.2012 had approved the additional capitalization of ₹520.01 lakh and de-capitalisation of ₹47.55 lakh during 2011-12 to 2012-13, respectively, for the tariff period 2009-14 on account of expenditure incurred after the cut-off date under Clause 2(v) of Regulation 9 of the 2009 Tariff Regulations as given below:

<b>Replacement of equipment in 2014-15</b>	<b>Additional Capitalization Allowed in Tariff Order dated 13.8.2012 in Pet. No. 316 of 2010</b>		
	<b>No.</b>	<b>Addcap</b>	<b>Decap</b>
Lightning Arrester	24	3609678.00	153048.00
PLCC	16	7287205.00	1226437.00
Circuit Breaker	4	15193735.00	2817780.00
CVT	0	0.00	0.00
Isolators	19	14837565.00	361660.00
CT	3	2342565.00	145422.00
C&R Panels	9	8730227.00	50284.00
Reactor	0	0.00	0.00
<b>Total (in ₹)</b>		<b>52000975.00</b>	<b>4754631.00</b>
<b>Total (in ₹ lakh)</b>		<b>520.01</b>	<b>47.55</b>



46. With regard to additional capitalization during 2014-15, the petitioner in response vide its affidavit dated 4.12.2015 submitted that the additional capitalization during 2014-15 are spill-over from 2009-14 tariff period, which were approved by the Commission vide its order dated 13.8.2013 and is on account of following expenses:

- i. Replacement of 4 no. of 400 kV circuit breakers with new SF6 circuit breakers,
- ii. Replacement of 9 no. of C&R panels (Muradnagar),
- iii. Replacement of 3 no. of CTs at Agra sub-station for Kanpur bay,
- iv. Lightning Arrester,
- v. Retrofitment of 19 no. of 400 kV isolators (Muradnagar, Anpara, Morabad),
- vi. Retrofitment work of existing old and obsolete 16 no. of PLCC panels (speech and speech + protection) in different transmission system.

Further, the petitioner in its affidavit dated 13.11.2015 submitted that the additional expenditure of ₹635.59 lakh incurred on account of replacement of above equipments is as per actual LOA, whereas, the additional expenditure submitted earlier on the same was on estimated basis. Considering the lead time of procurement after approval of the Commission, replacement of all equipments could not be carried out within the balance period of tariff period 2009-14. These equipments were procured through open tender, LOA were placed and equipments reached at site and accordingly replacement work was carried out. Since replacement was done on systems under O&M, therefore, completion of



the replacement work was dependent on the availability of the shutdown of different transmission elements. Therefore, additional capitalization claimed in 2014-15 is for the equipments already approved by the Commission in order dated 13.8.2013.

47. Further, with regard to de-capitalization during 2014-15, the petitioner vide its affidavit dated 18.12.2015 submitted that de-capitalization allowed for an amount of ₹17.5083 lakh in 2011-12 and ₹30.0380 lakh in 2012-13 totalling to ₹47.5463 lakh at para 18, page no. 19 of order dated 13.8.2012 in Petition No. 316/2010 may be considered for the 2014-15. The petitioner further submitted that de-capitalized amount remain unchanged due to replaced equipment achieving maximum depreciation of 25 years and more.

48. The Commission allows additional capitalization and de-capitalization of ₹635.59 lakh and ₹47.55 lakh, respectively, for 2014-15 towards spill over of the amount allowed in order dated 13.8.2012, in accordance with Clause 3(ix) of Regulation 14 of the 2014 Tariff Regulations.

49. The petitioner further submitted that additional capitalisation for 2015-16, 2016-17, and 2017-18 is on account of retrofitment and replacement of old and obsolete equipments and spares. In this regard, the Commission vide its letter dated 6.11.2015 asked the petitioner to provide justification of such old and obsolete equipments and basis of cost estimates of items considered for additional capitalisation.





50. With regard to proposed additional capital expenditure for 2015-16, 2016-17 and 2017-18, the petitioner in its petition and affidavit dated 13.11.2015 submitted the justification as follows:

**(i) Replacement of Circuit Breakers (CBs):**

The petitioner submitted that various M&G and BHEL make CBs are in service for more than 25 years and most of them have been phased out by OEMs or have become obsolete. In case of M&G make CBs, M&G has been taken over by SIEMENS and SIEMENS quoted exorbitant price of ₹3,66,23,000/- (Rupees three crore sixty six lakh twenty three thousand only) for supply of spares and supervision of overhauling work for 4 no. of obsolete CBs. For retrofitment of CBs (Supply & Service portion), expenditure towards retrofitment of 1 CB works out to approximately ₹49 lakh. Accordingly, for overhauling of M&G circuit breakers, cost implication per beaker comes to around ₹91.5 lakh whereas for retrofitment it is around ₹49 lakh. Hence retrofitment is cost effective and it is prudent to replace M&G circuit breakers.

Further, in case of BHEL make CBs, problems in hydraulic operating system, non-operation of PIR, and time discrepancy have been observed. In 2012, similar two BHEL make CBs failed in Agra Sub-station. Accordingly, these circuit breakers may be replaced with new circuit breakers for smooth and reliable operation of grid.

**(ii) Replacement of PLCC panels:**

The petitioner submitted that PLCC panels are in service for more than 25 years. ABB make ETI-21 carrier equipment and NSD-60/61 Protection coupler are



installed at Agra Sub-station under Auraiya Transmission System. Similar component failures in ETI panels have been experienced in number of cases and the matter has been taken up with M/s ABB for repair/procurement of the same. M/s ABB vide their communication dated 26.09.2012 intimated that that these products were phased out from their regular manufacturing range since many years ago and it is very difficult to support users for both ETI 21/22 and NSD-60/61. Accordingly, these old and obsolete ETI panels are proposed to be replaced with new panels for smooth and reliable operation of grid.

**(iii) Replacement of WSI make CT/CVT:**

The petitioner submitted that various problems, which include fire, spillage of oil, hot spot at EMU Tank, and secondary voltage variation have been experienced in WSI make CVT. WSI make CTs at Agra and Kanpur are violating DGA norms ( $H_2$ ,  $C_2H_6$ , CO,  $CO_2$ ) and have become vulnerable and may affect stability of the grid in case of failure and hence, it is prudent to replace the same. Further, M/s ALSTOM has taken over WSI. Therefore, matter was taken up with M/s ALSTOM for repair/ rectification such CTs. In this regard, M/s ALSTOM vide its email dated 25.8.2015 intimated that WSI make CTs are obsolete and no rework / repair will be carried out at their works. On account of high concentration of DGA gases ( $C_2H_2 > 20ppm$ ), some WSI make CTs have already been replaced.

**(iv) Retrofitment of S&S make isolator at Agra, HAPPAM and BBC make isolators at Kanpur:**

The petitioner submitted that S&S Power and HAPPAM make isolators are in service for more than 25 years. Further, S&S Power and BBC have closed down



and no supply and service support is available. Various maintenance activities were carried out in S&S, HAPPAM and BBC make since 2008 due to problem of high contact resistance, contact assembly, motor drive, misalignment, etc. In some extreme cases, problem could only be rectified by replacement of isolator arm/ contract assembly/ motor. Accordingly, retro-fitment of isolator is proposed for smooth operation of system.

51. Regarding de-capitalisation of replaced equipments, the Commission vide its letter dated 6.11.2015 asked the petitioner to provide the information regarding treatment of de-capitalisation of assets that are proposed to be replaced in 2015-16, 2016-17 and 2017-18. The petitioner in response vide its affidavit dated 22.12.2015 submitted the details of additional capitalization and de-capitalization in 2015-16, 2016-17 and 2017-18 as given below:-

S. No.	Equipment	Quantity	Add-cap			De-Cap		
			2015-16	2016-17	2017-18	2015-16	2016-17	2017-18
1	Circuit Breaker	12	--	299.95	150	--	56.36	28.18
2	Isolator	25	225.06	19.57	--	4.38	0.38	--
3	CT	49	324.01	--	--	23.75	--	--
4	CVT	40	121.92	30.48	--	2.86	0.72	--
5	PLCC	14	42.01	--	--	10.73	--	--
Total			713.00	350.00	150.00	41.72	57.46	28.18

With regard to proposed additional capitalization of ₹713.00 lakh, ₹350.00 lakh, and ₹150.00 lakh for 2015-16, 2016-17, and 2017-18, respectively, the petitioner vide its affidavit dated 22.12.2015 has also submitted the details of equipments to be replaced which are placed at **Annexure-I**.



52. Further, with regard to the basis of cost estimates of items considered for additional capitalisation during 2014-19 period, the petitioner vide its affidavit dated 13.11.2015 replied that the budgetary estimates are based on the price in recent LOAs of similar equipments. The Commission during the hearing directed the petitioner to provide the minutes of the deliberations of the petitioner's Board or Delegated Approval wherein the proposed additional capital expenditure for 2014-19 was approved. The petitioner in response vide its affidavit dated 4.12.2015 submitted that investment approval of competent authority is taken for execution of new projects being undertaken by Powergrid from time to time. All the new transmission projects, agreed in Standing Committee Meeting of Regional Planning and approval in the Regional Power Committee (RPC), are taken up to the Board for approval for execution. In the instant petition, there is no capitalization of new project; it is the replacement of problematic equipments due to ageing effect. In case of additional capitalization as per Clause 9(2) of the 2009 Tariff Regulations, in any existing project, technical approval for replacement of problematic equipments is obtained from management before submitting proposal to the Commission. All the activities related to replacement work starts only after the Commission's approval. This is put to the Board under the head of "Non-Plan Capital Expenditure" in the Annual Revenue Budget of the company based on the activities schedule during that year. Activities are carried out on approval of budget by the Board. In the instant petition, the proposal for additional capitalization submitted to the Commission for the tariff period 2014-19 will also be taken to the Board upon approval under "Non Plan Capital Expenditure" budget on yearly basis. The expenditure on replacement of



equipments through additional capitalization will be made progressively during 2014-15 after the same is approved by the Commission.

53. Clause (3)(ix) of Regulation 14 of the 2014 Tariff Regulations provides as follows:-

“(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:

.....

(ix) 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 due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and.....

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:.....”

54. The total capital cost of the transmission asset including additional capitalisation and de-capitalisation proposed during 2014-15, 2015-16, 2016-17 and 2017-18 works out to ₹25503.28 lakh, which is within the approved cost of ₹25605.00 lakh given in investment approval dated 8.1.1987. Considering the submissions made by the petitioner, we have provisionally allowed the additional capitalisation of ₹635.59 lakh, ₹713.00 lakh, ₹350.00 lakh and ₹150.00 lakh and de-capitalization of ₹47.55 lakh, ₹41.72 lakh, ₹57.46 lakh and ₹28.18 lakh for 2014-15, 2015-16, 2016-17 and 2017-18, respectively, in accordance with Clause 3(ix) of Regulation 14 of the 2014 Tariff Regulation. Accordingly, the net additional capitalization allowed is ₹588.04 lakh, ₹671.28 lakh, ₹292.54 lakh and



₹121.82 lakh for 2014-15, 2015-16, 2016-17 and 2017-18, respectively. The additional capitalisation for tariff period 2014-19 shall be finalized after the detailed scrutiny of additional capitalisation in true up petition. Thus, the total capital cost of the transmission asset including additional capitalisation and de-capitalisation provisionally allowed by the Commission during 2014-15, 2015-16, 2016-17 and 2017-18 works out to ₹25503.28 lakh as shown in Table below:-.

**(₹ in lakh)**

Particulars	Capital cost as on 31.3.2014	Additional Net capitalisation (after deducting de-capitalisation)					Total additional capitalisation	Total capital cost including additional capitalisation
		2014-15	2015-16	2016-17	2017-18	2018-19		
Asset	23829.60	588.04	671.28	292.54	121.82	0.00	1673.68	25503.28

### **Debt: Equity Ratio**

55. 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.”

56. The petitioner has considered debt:equity ratio as 50.20:49.80. Debt equity ratio of 49.90:50.10 as on 31.3.2009 was considered by the Commission in its order dated 13.8.2012 in Petition No. 316/2010. In respect of additional capital expenditure in tariff period 2009-14, debt-equity ratio of 70:30 has been considered as mandated under Clause 3 of Regulation 12 of the 2009 Tariff Regulations. Accordingly, we have considered the debt-equity ratio of 50.20:49.80 as on 31.3.2014, as the debt-equity ratio as on 01.04.2014. The



details of the debt:equity considered for the purpose of tariff for 2014-19 tariff period is as follows:-

Funding	Amount (in ₹ lakh)	(%)
Debt	11961.48	50.20
Equity	11868.12	49.80
<b>Total</b>	<b>23829.60</b>	<b>100.00</b>

57. In respect of additional capital expenditure in tariff period 2014-19, debt-equity ratio of 70:30 has been considered as mandated under Clause 5 of Regulation 19 of the 2009 Tariff Regulations. Accordingly, we have provisionally considered the capital cost as given below:

Funding	Capital cost as on 1.4.2014 (in ₹ lakh)	Additional capitalisation					Total additional capitalisation	Capital cost as on 31.4.2019 (in ₹ lakh)
		2014-15	2015-16	2016-17	2017-18	2018-19		
Debt	11961.48	411.63	469.90	204.78	85.27	0.00	1171.58	13133.06
Equity	11868.12	176.41	201.38	87.76	36.55	0.00	502.11	12370.22
<b>Total</b>	<b>23829.60</b>	<b>588.04</b>	<b>671.28</b>	<b>292.54</b>	<b>121.82</b>	<b>0.00</b>	<b>1673.68</b>	<b>25503.28</b>

### **Interest on Loan (“IOL”)**

58. 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.”



59. The petitioner has not claimed any interest on loan for the tariff period 2009-14 as the entire loan has already been repaid before 1.4.2009. Consequent to the additional capital expenditure allowed during the tariff period 2014-19, there is an addition to the normative loan amounting to ₹411.63 lakh, ₹469.90 lakh, ₹204.78 lakh and ₹85.27 lakh during 2014-15, 2015-16, 2016-17 and 2017-18, respectively. However, this loan too gets repaid during the same year as depreciation has been considered as repayment and the net loan closing is zero at the end of the above stated periods.

60. Accordingly, Interest on Loan has been considered as NIL for the purpose of tariff.

### **Return on Equity (“ROE”)**

61. Clause (1) and (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.”





62. 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.

63. 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.

64. 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 allowing 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 by the Commission is given below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	11868.12	12044.53	12245.91	12333.68	12370.22
Addition due to Additional Capitalisation	176.41	201.38	87.76	36.55	0.00
Closing Equity	12044.53	12245.91	12333.68	12370.22	12370.22
Average Equity	11956.32	12145.22	12289.79	12351.95	12370.22
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>2344.63</b>	<b>2381.68</b>	<b>2410.03</b>	<b>2422.22</b>	<b>2425.80</b>

### Depreciation

65. 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."

66. The petitioner has computed depreciation considering capital expenditure of ₹23829.60 lakh as on 31.3.2014.



67. 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 allowed are given hereunder:-

**(₹ in lakh)**

Details of Depreciation	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	23829.60	24417.64	25088.92	25381.46	25503.28
Additions during the year due to projected additional capitalization	588.04	671.28	292.54	121.82	0.00
Closing Gross block	24417.64	25088.92	25381.46	25503.28	25503.28
Rate of Depreciation (%)	1.749	2.163	2.551	2.775	2.876
Depreciable Value	21628.46	22195.16	22628.87	22815.34	22870.16
Elapsed Life of the assets at beginning of the year	28	29	30	31	32
Weighted Balance Useful life of the assets	6	5	4	3	2
Remaining Depreciable Value	2532.11	2676.79	2575.15	2117.82	1466.70
<b>Depreciation</b>	<b>422.02</b>	<b>535.36</b>	<b>643.79</b>	<b>705.94</b>	<b>733.35</b>

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

68. 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:-

Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
Actual line length (km)	400 kV S/C (Twin conductor)	2374.862	2374.862	2374.862	2374.862	2374.862
Actual (No. of bays)	400 kV Bays	19	19	19	19	19
Norms as per Regulation	400 kV S/C (Twin & Triple Conductor) (₹ lakh/km)	0.404	0.418	0.432	0.446	0.461



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV Bays (₹ lakh/bay)	60.30	62.30	64.37	66.51	68.71
<b>Total (₹ in lakh)</b>	<b>2105.14</b>	<b>2176.39</b>	<b>2248.97</b>	<b>2322.88</b>	<b>2400.30</b>

69. 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.

70. 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.

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

Particulars	Year				
	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses allowed</b>	<b>2105.14</b>	<b>2176.39</b>	<b>2248.97</b>	<b>2322.88</b>	<b>2400.30</b>



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

72. 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;”

73. The petitioner has submitted that it has computed IWC 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 for the purpose of computation of tariff is 13.50%.

74. 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	315.77	326.46	337.35	348.43	360.05
O & M expenses	175.43	181.37	187.41	193.57	200.03
Receivables	841.96	880.13	916.22	941.89	960.79
<b>Total</b>	<b>1333.16</b>	<b>1387.96</b>	<b>1440.98</b>	<b>1483.90</b>	<b>1520.87</b>
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>179.98</b>	<b>187.37</b>	<b>194.53</b>	<b>200.33</b>	<b>205.32</b>



## Annual Transmission Charges

75. The Annual Transmission Charges allowed for the transmission asset is given hereunder:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	422.02	535.36	643.79	705.94	733.35
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2344.63	2381.68	2410.03	2422.22	2425.80
Interest on WC	179.98	187.37	194.53	200.33	205.32
O&M Expenses	2105.14	2176.39	2248.97	2322.88	2400.30
<b>Total</b>	<b>5051.77</b>	<b>5280.80</b>	<b>5497.32</b>	<b>5651.36</b>	<b>5764.77</b>

76. The detailed computation of various components of annual fixed charges for the tariff period 2014-19 is summarized below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Opening Gross Block	23829.60	24417.64	25088.92	25381.46	25503.28
Additional Capitalisation	588.04	671.28	292.54	121.82	0.00
Closing Gross Block	24417.64	25088.92	25381.46	25503.28	25503.28
Average Gross Block	24123.62	24753.28	25235.19	25442.37	25503.28
<b>Depreciation</b>					
Rate of Depreciation	1.749	2.163	2.551	2.775	2.876
Depreciable Value	21628.46	22195.16	22628.87	22815.34	22870.16
Elapsed Life of the assets at beginning of the year	28	29	30	31	32
Weighted Balance Useful life of the assets	6	5	4	3	2
Remaining Depreciable Value	2532.11	2676.79	2575.15	2117.82	1466.70
Depreciation	422.02	535.36	643.79	705.94	733.35



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Interest on Loan</b>					
Gross Normative Loan	11961.48	12373.11	12843.01	13047.79	13133.06
Cumulative Repayment upto Previous Year	11961.48	12373.11	12843.01	13047.79	13133.06
Net Loan-Opening	0.00	0.00	0.00	0.00	0.00
Additions	411.63	469.90	204.78	85.27	0.00
Repayment during the year	411.63	469.90	204.78	85.27	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan (%)	8.7222	8.7218	8.7214	8.7208	8.7201
Interest	0.00	0.00	0.00	0.00	0.00
<b>Return on Equity</b>					
Opening Equity	11868.12	12044.53	12245.91	12333.68	12370.22
Additions	176.41	201.38	87.76	36.55	0.00
Closing Equity	12044.53	12245.91	12333.68	12370.22	12370.22
Average Equity	11956.32	12145.22	12289.79	12351.95	12370.22
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)	2344.63	2381.68	2410.03	2422.22	2425.80
<b>Interest on Working Capital</b>					
Maintenance Spares	315.77	326.46	337.35	348.43	360.05
O & M expenses	175.43	181.37	187.41	193.57	200.03
Receivables	841.96	880.13	916.22	941.89	960.79
<b>Total</b>	<b>1333.16</b>	<b>1387.96</b>	<b>1440.98</b>	<b>1483.90</b>	<b>1520.87</b>
Interest	179.98	187.37	194.53	200.33	205.32
<b>Annual Transmission</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Charges</b>					
Depreciation	422.02	535.36	643.79	705.94	733.35
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2344.63	2381.68	2410.03	2422.22	2425.80
Interest on Working Capital	179.98	187.37	194.53	200.33	205.32
O & M Expenses	2105.14	2176.39	2248.97	2322.88	2400.30
<b>Total</b>	<b>5051.77</b>	<b>5280.80</b>	<b>5497.32</b>	<b>5651.36</b>	<b>5764.77</b>

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

77. 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**

78. The petitioner has requested to allow the petitioner to bill and recover licence 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**

79. 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**

80. 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 Regulations 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**

81. 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.

82. This order disposes of Petition No. 513/TT/2014.

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

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



**Annexure-I**

**Details of additional capitalization during tariff period 2014-19**

(₹ in lakh)

S. No.	Equipment to be replaced	Qty.	Location	Name of the bay/line	COD	Unit rate in lakh	Total Estimated Cost (in Rs lakh)	Additional Capitalization		
								2015-16	2016-17	2017-18
1	Retrofitment of circuit breaker	1	Kanpur	Allahabad main bay	1990	37.5	37.5		37.5	
		1	Kanpur	Ald/Panki-1 tie bay A side	1990	37.5	37.5		37.5	
		1	Kanpur	Ald/Panki-1 tie bay A side	1990	37.5	37.5		37.5	
		1	Kanpur	Panki-1	1990	37.5	37.5		37.5	
		1	Kanpur	Fatehpur-2 main bay	1990	37.5	37.5		37.5	
		1	Kanpur	Panki- main bay	1990	37.5	37.5		37.5	
		1	Kanpur	Agra main bay	1990	37.5	37.5		37.5	
		1	Kanpur	Panki-2 at UPPCL	1989	37.5	37.5		37.5	
		1	Moradabad	Bareilly-1	1986	37.5	37.5			37.5
		1	Kanpur	Agra-Bassi main	1986	37.5	37.5			37.5
		1	Kanpur	Agra-Bassi tie	1986	37.5	37.5			37.5
		1	Kanpur	Agra Ballabgarh main	1986	37.5	37.5			37.5
2	Retrofitment of Isolator	1	Agra	Kanpur	1986	9.79	9.79		9.79	
		1	Agra	400 kV Agra-Kanpur main bay line reactor	1986	9.79	9.79		9.79	
		2	Agra	400 kV Kanpur/Auraiya ckt-2 tie bay	1986	9.79	19.57	19.57		
		3	Agra	400 kV Agra Bassi ckt	1986	9.79	29.36	29.36		



S. No.	Equipment to be replaced	Qty.	Location	Name of the bay/line	COD	Unit rate in lakh	Total Estimated Cost (in Rs lakh)	Additional Capitalization		
								2015-16	2016-17	2017-18
				main bay						
		3	Kanpur	Singrauli-2 main bay	1988	9.79	29.36	29.36		
		1	Kanpur	Allahabad/Panki-1 tie bay A side	1988	9.79	9.79	9.79		
		1	Kanpur	Allahabad/Panki-1 tie bay B side	1988	9.79	9.79	9.79		
		3	Kanpur	Panki-1 main bay	1988	9.79	29.36	29.36		
		3	Kanpur	Fatehpur-2 main bay	1988	9.79	29.36	29.36		
		1	Kanpur	Fatehpur-2/Panki-2 tie bay A side	1988	9.79	9.79	9.79		
		3	Kanpur	Panki-1 at UPPCL end	1988	9.79	29.36	29.36		
		3	Kanpur	Panki-2 at UPPCL end	1988	9.79	29.36	29.36		
3	Retrofitment of WSI make CTs	3	Kanpur	Allahabad main bay	1990	6.61	19.84	19.84		
		3	Kanpur	Allahabad/Panki-1 tie bay A side	1990	6.61	19.84	19.84		
		3	Kanpur	Allahabad/Panki-1 tie bay B side	1990	6.61	19.84	19.84		
		3	Kanpur	Panki-1 main bay	1990	6.61	19.84	19.84		
		3	Kanpur	SINGRAULI-I now Fatehpur-2 main bay	1990	6.61	19.84	19.84		
		3	Kanpur	Fatehpur-2/Panki-2 tie bay A side	1990	6.61	19.84	19.84		
		3	Kanpur	Fatehpur-2/Panki-2 tie bay B side	1990	6.61	19.84	19.84		
		3	Kanpur	Panki-2 main bay	1990	6.61	19.84	19.84		



S. No.	Equipment to be replaced	Qty.	Location	Name of the bay/line	COD	Unit rate in lakh	Total Estimated Cost (in Rs lakh)	Additional Capitalization		
								2015-16	2016-17	2017-18
		3	Kanpur	Agra main bay	1990	6.61	19.84	19.84		
		3	Kanpur	Agra L/R	1990	6.61	19.84	19.84		
		3	Kanpur	Panki-1 at UPPCL end	1990	6.61	19.84	19.84		
		3	Kanpur	Panki-2 at UPPCL end	1990	6.61	19.84	19.84		
		3	Agra	400 kV Agra-Kanpur main bay	1990	6.61	19.84	19.84		
		3	Agra	400 kV Agra-Kanpur tie bay	1990	6.61	19.84	19.84		
		3	Agra	400 kV Agra-Kanpur tie bay B side	1990	6.61	19.84	19.84		
		1	Agra	400 kV Agra-Bassi main bay	1990	6.61	6.61	6.61		
		3	Agra	400 kV Agra-Bassi/Ballabgarh tie bay	1990	6.61	19.84	19.84		
4	Retrofitment of WSI make CVTs	3	Moradabad	Bareilly-1	1990	3.81	11.43	11.43		
		3	Moradabad	Muradnagar	1990	3.81	11.43	11.43		
		2	Kanpur	SINGRAULI-II now Allahabad main bay	1990	3.81	7.62	7.62		
		2	Kanpur	Panki-1 main bay	1990	3.81	7.62	7.62		
		3	Kanpur	SINGRAULI-I now Fatehpur-2 main bay	1990	3.81	11.43	11.43		
		2	Kanpur	Panki-2 main bay	1990	3.81	7.62	7.62		
		3	Kanpur	Agra main bay	1990	3.81	11.43	11.43		
		3	Kanpur	Panki-1 at UPPCL	1990	3.81	11.43	11.43		



S. No.	Equipment to be replaced	Qty.	Location	Name of the bay/line	COD	Unit rate in lakh	Total Estimated Cost (in Rs lakh)	Additional Capitalization		
								2015-16	2016-17	2017-18
				end						
		3	Kanpur	Panki-2 at UPPCL end	1990	3.81	11.43	11.43		
		2	Kanpur	400 kV bus-1	1990	3.81	7.62	7.62		
		3	Kanpur	400 kV bus-2	1990	3.81	11.43	11.43		
		3	Sarojininagar	Bareilly	1990	3.81	11.43	11.43		
		3	Sarojininagar	Singrauli	1990	3.81	11.43		11.43	
		3	Agra	Kanpur	1990	3.81	11.43		11.43	
		1	Agra	Bassi	1990	3.81	3.81		3.81	
		1	Agra	Ballabgarh	1990	3.81	3.81		3.81	
5	PLCC Retrofitment	2	Kanpur	Panki-1	1990	3.00	6.00	6		
		3	Kanpur	Panki-2	1990	3.00	9.00	9		
		2	Kanpur	Panki-1 at UPPCL end	1990	3.00	6.00	6		
		3	Kanpur	Panki-2 at UPPCL end	1990	3.00	9.00	9		
		2	Kanpur	Agra main bay	1986	3.00	6.00	6		
		2	Kanpur	Ballabgarh main	1986	3.00	6.00	6		
<b>Total additional capitalization</b>								<b>713.00</b>	<b>350.00</b>	<b>150.00</b>



**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO DURING TARIFF  
PERIOD 2009-14**

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2009	Additions during the tariff period	Total
Bond XXX- Addcap for 2009-10 Loan 1-	8.80	0.00	133.16	133.16
Bond XXXIII - Addcap for 2010-11 Loan 2-	8.64	0.00	115.14	115.14
<b>Total</b>		<b>0.00</b>	<b>248.30</b>	<b>248.30</b>

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

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Opening Loan	0.00	133.16	248.30	248.30	248.30
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	0.00	0.00	0.00
Net Loans Opening	0.00	133.16	248.30	248.30	248.30
Add: Drawl(s) during the year	133.16	115.14	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	0.00	0.00	0.00	11.10
Net Closing Loan	133.16	248.30	248.30	248.30	237.20
Average Net Loan	66.58	190.73	248.30	248.30	242.75
Interest on Loan	5.86	16.69	21.67	21.67	21.18
Rate of Interest on Loan (%)	8.8000	8.7517	8.7258	8.7258	8.7241

**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO DURING TARIFF PERIOD 2014-19**

(₹ in lakh)

Particulars	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
Bond XXX- Addcap for 2009-10 Loan 1-	133.16	0.00	133.16
Bond XXXIII - Addcap for 2010-11 Loan 2-	115.14	0.00	115.14
<b>Total</b>	<b>248.30</b>	<b>0.00</b>	<b>248.30</b>

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	248.30	248.30	248.30	248.30	248.30
Cumulative Repayments of Loans upto Previous Year	11.10	31.80	52.50	73.20	93.90
Net Loans Opening	237.20	216.50	195.80	175.10	154.40
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	20.70	20.70	20.70	20.70	20.70
Net Closing Loan	216.50	195.80	175.10	154.40	133.70
Average Net Loan	226.85	206.15	185.45	164.75	144.05
Interest on Loan	19.79	17.98	16.17	14.37	12.56
Rate of Interest on Loan (%)	8.7222	8.7218	8.7214	8.7208	8.7201

