

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 47/TT/2017

Coram:

**Shri Gireesh B. Pradhan, Chairperson
Shri A. K. Singhal, Member
Shri A. S. Bakshi, Member
Dr. M. K. Iyer, Member**

Date of Order : 2.11.2017

In the matter of:

Truing up of transmission tariff of 2009-14 tariff period under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 and determination of tariff of 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for Asset A: Asset-1- 400 kV 315 MVA Transformer at Bina Sub-station; Asset B: Asset I-400 kV D/C Pirana-Dehgam Transmission Line along with associated bays at Pirana and Dehgam Sub-station and 400 /220 kV Pirana Sub-station (New); Asset II- ICT-I (1X315 MVA) 400/220 kV at Pirana Sub-station along with associated bays; Asset III- ICT-II (1X315 MVA) 400/220 kV at Pirana Sub-station and associated bays Asset IV- Bina Bay Extension with 1x315 MVA ICT along with associated 400 kV and 220 kV Bays; Asset V- 400/220 kV Gwalior (Extension) Sub-station with 1x315 MVA ICT along with associated 400/220 kV Bays, Asset C: Asset-1- ICT III at 400/220 kV Pune Sub-station along with associated bays and Asset 2- ICT III at Wardha Sub-station along with associated bays and Asset D: ICT III at Raipur along with bay extension associated with WRSS VI under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

And in the matter of:

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

.....**Petitioner**

Vs

1. Madhya Pradesh Power Management Company Limited
Shakti Bhawan, Rampur
Jabalpur - 482 008



2. Maharashtra State Electricity Distribution Co. Limited
Hong Kong Bank Building, 3rd Floor,
M. G. Road, Fort, Mumbai - 400001.
3. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road,
Vadodara - 390 007
4. Electricity Department
Government of Goa
Vidyut Bhawan, Panaji,
Near Mandvi Hotel, Goa - 403 001
5. Electricity Department
Administration of Daman and Diu
Daman - 396 210
6. Electricity Department
Administration of Dadra Nagar Haveli
U.T., Silvassa - 396 230
7. Chhattisgarh State Electricity Board
P.O.Sunder Nagar, Dangania, Raipur
Chhatisgaarh-492013
8. Madhya Pradesh Audyogik Kendra
Vikas Nigam (Indore) Ltd.
3/54, Press Complex, Agra-Bombay Road,
Indore-452 008

.....**Respondents**

For Petitioner : Shri Jasbir Singh, PGCIL
Shri Y.K. Sehgal, PGCIL
Shri S.S. Raju, PGCIL

For Respondents : None

ORDER

The present petition has been filed by Power Grid Corporation of India Ltd. ("the petitioner") for truing up of capital expenditure of 2009-14 tariff period for



Asset A: 400 kV 315 MVA Transformer at Bina Sub-station; Asset B: Asset I- 400 kV D/C Pirana-Dehgam Transmission Line along with associated bays at Pirana and Dehgam Sub-station and 400 /220 kV Pirana Sub-station (New); Asset II- ICT-I (1X315 MVA) 400/220 kV at Pirana Sub-station along with associated bays; Asset III- ICT-II (1X315 MVA) 400/220 kV at Pirana Sub-station and associated bays Asset IV- Bina Bay Extension with 1x315 MVA ICT along with associated 400 kV and 220 kV Bays; Asset V-400/220 kV Gwalior (Extension) Sub-station with 1x315 MVA ICT along with associated 400/220 kV Bays, Asset C: Asset-1- ICT III at 400/220 kV Pune Sub-station along with associated bays and Asset 2- ICT III at Wardha Sub-station along with associated bays and Asset D: ICT III at Raipur along with bay extension associated with WRSS VI (hereinafter referred to as “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 from COD to 31.3.2014, and for determination of tariff for the period from 1.4.2014 to 31.3.2019 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. Brief facts of the case are as follows:-

- (a) The investment approval for the scheme was accorded by Board of Directors of the petitioner company vide Memorandum C/CP/WRSS-VI



dated 25.2.2008 at an estimated cost of ₹34072 lakh including IDC of ₹2617 lakh (based on 3rd quarter, 2007 price level).

(b) Details of the assets covered in the project and the petitions under which the assets are covered are summarized below:-

Assets	Name of the Asset	Actual COD	Notional COD	Tariff allowed
Asset-A1	400 kV 315 MVA Transformer at Bina	1.11.2010	NA	Order dated 21.7.2011 in Petition No. 336/TT/2010
Asset-B1	400 kV D/C Pirana-Dehgam Transmission Line along with associated bays at Pirana and Dehgam Sub-station and 400 /220 kV Pirana Sub-station (New)	1.3.2011	NA	Order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-B2	ICT-I (1X315 MVA) 400/220 kV at Pirana Sub-station along with associated bays	1.3.2011	1.4.2011	
Asset-B3	ICT-II (1X315 MVA) 400/220 kV at Pirana Sub-station alongwith associated Bays	1.4.2011	1.4.2011	
Asset-B4	Bina Bay Extension with 1x315 MVA ICT along with associated 400 kV and 220 kV Bays	1.11.2010	1.4.2011	
Asset-B5	400/220 kV Gwalior (Extension) Sub-station with 1x315 MVA ICT along with associated 400/220 kV Bays	1.4.2011	1.4.2011	
Asset-C1	ICT III at Pune Sub-station along with bay extension	1.11.2011	NA	Order dated 17.8.2015 in Petition No. 109/TT/2012
Asset-C2	ICT III at Wardha Sub-station along with bay extension	1.1.2012	NA	
Asset-D	ICT III at Raipur Sub-station along with bay extension 400/220 kV 315 MVA ICT.	1.7.2011	NA	Order dated 28.5.2012 in Petition No. 136/TT/2011



(c) The Commission vide order dated 21.7.2011, in Petition No 336/TT/2010 had approved tariff for single asset (i.e. Asset A1 in the instant petition) w.e.f. COD 1.11.2010 to 31.3.2014 by restricting the capital expenditure as on COD to ₹2845.82 lakh after deducting ₹74.84 lakh towards excess spares. Subsequently, the said asset was included in Petition No. 56/TT/2011 as Asset 4 and combined with Asset 5 for grant of tariff w.e.f. 1.4.2011.

(d) The Commission vide order dated 30.4.2013 in Petition No 56/TT/2011, had approved tariff for five assets, which were numbered as Asset-B1 to B5 in the instant petition. The Commission in order dated 30.4.2013 has approved tariff on basis of notional COD (1.4.2011) by combining the Asset-B2 and B3 and Asset-B4 and B5. As mentioned above, the asset which was earlier covered in Petition No. 336/TT/2011 (i.e. Asset A1 in the instant petition) was included in Petition No. 56/TT/2011 as asset Asset IV and it was combined with Asset V for grant of tariff w.e.f. notional COD (i.e. 1.4.2011). As per para 8 of order dated 30.4.2013 in Petition No. 56/TT/2011, the tariff approved for Asset IV had superseded the tariff approved for the single asset (i.e. Asset A1 in the instant petition) which was covered under Petition No. 336/2010 for 2009-14 period w.e.f. 1.4.2011. The Asset IV and Asset V covered in Petition No. 56/TT/2011 are termed as Asset B4 and Asset B5 in the instant petition. The clubbing of assets based on notional COD as carried out in final tariff orders has been



retained in the instant true up petition for determination of tariff from COD to 31.3.2014.

(e) The Commission vide order dated 1.8.2013 in Petition No 109/TT/2012, had approved tariff for 2 nos. of assets (Asset-1 and 2) which has been named as Asset C1 and Asset C2 in the instant true up petition. In order dated 1.8.2013, Commission had disallowed 50% on IDC and IEDC for 8 months in both the assets and further disallowed 100% IDC and IEDC for 3 months and 5 months in case of Asset-1 and Asset-2 respectively. Aggrieved by the order dated 1.8.2013, the petitioner filed Appeal No. 257 of 2013 before the Appellate Tribunal for Electricity (APTEL). The APTEL vide order dated 12.9.2014 in Appeal No. 257 of 2013 had directed to allow IDC and IEDC for delay of 8 months in both assets and retained the disallowance of IDC and IEDC for 3 months and 5 months for Asset 1 and 2 respectively. Subsequently, Commission vide order dated 17.8.2015 in Petition No. 109/TT/2012 had revised the tariff computation of both assets to incorporate the APTEL's judgment dated 12.9.2014 by disallowing the IDC and IEDC for 3 months (₹2.90 lakh) and 5 months (₹9.94 lakh) in case of Asset-1 and Asset-2 respectively.

(f) The Commission vide order dated 28.5.2012 in Petition No 136/TT/2011, had approved tariff for single asset (which is mentioned as Asset-D in the instant petition) based on the admitted cost as on 1.7.2011 (COD) as ₹2333.45 lakh after restricting the IDC and IEDC for the period of time over-



run of 8 months and excess spares of amount ₹29.87 lakh and allowed add cap is ₹227.87 lakh for 2011-12. Further ₹2486.10 lakh as capital expenditure was considered after restricting ₹75.22 lakh.

(g) As per the investment approval dated 25.2.2008, the transmission assets covered in WRSSS VI were scheduled to be commissioned in 33 months, i.e. 1.12.2010. The details of the period of time over-run condoned by the Commission in case of the instant assets, covered in different petitions, are summarized below:-

Asset No.	Details of time over run
Asset-A1	No time over-run
Asset-B1	3 months time over-run. Entire time over-run was condoned vide order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-B2	3 months time over-run. Entire time over-run was condoned vide order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-B3	3 months time over-run. Entire time over-run was condoned vide order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-B4	4 months time over-run. Entire time over-run was condoned vide order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-B5	4 months time over-run. Entire time over-run was condoned vide order dated 30.4.2013 in Petition No. 56/TT/2011
Asset-C1	Time over-run of 3 months was not condoned vide order dated 17.8.2015 in Petition No. 109/TT/2012 after considering the APTEL judgment in Appeal No. 257 of 2013
Asset-C2	Time over-run of 5 months was not condoned vide order dated 17.8.2015 in Petition No. 109/TT/2012 after considering the APTEL judgment in Appeal No. 257 of 2013
Asset-D	Entire time over-run of 8 months was not condoned vide order dated 28.05.2012 in Petition No. 136/TT/2011

3. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003 ("the Act"). Madhya Pradesh Power Management Company



Limited (MPPMCL), Respondent No. 1 has filed reply vide affidavit dated 1.5.2017. The petitioner has filed rejoinder to the reply of MPPMCL, vide affidavit dated 18.5.2017. The issues raised by MPPMCL and the clarifications given by the petitioner are dealt in the respective para of this order.

4. The hearing in the matter was held on 13.4.2017. Having heard the representatives of the petitioner, respondents and perused the material on record, we proceed to dispose of the petition.

5. The capital cost allowed for the instant assets vide order dated 21.7.2011, 30.4.2013, 17.8.2015 and 31.12.2015 in Petition Nos. 336/TT/2010, 56/TT/2011, 109/TT/2012 and 136/TT/2011 respectively is summarized below:-

(₹ in lakh)								
Petition No.	Asset	Actual COD	Cost as on COD	2010-11	2011-12	2012-13	2013-14	Admitted cost as on 31.3.2014
Order dated 21.7.2011 in Petition No. 336/TT/2010	Asset-A1	1.11.2010	2059.23	510.59	196.00	80.00	0.00	2845.82
Order dated 30.4.2013 in Petition No. 56/TT/2011	Asset-B1	1.3.2011	8576.62	373.25	1659.09	333.00	0.00	10941.96
	Asset-B2	1.3.2011	1931.4	110.20	Tariff for this asset was granted only up to 31.3.2011 and w.e.f. 1.4.2011, the capital cost has been merged with Asset B3 and has been granted on combined asset of B2 and B3			
	Asset-B3	1.4.2011	2633.24	0.00	1231.13	309.32	65.00	4238.69
	Asset-B4	1.11.2010	3905.89	0.00	973.69	311.94	75.00	5266.49
	Asset-B5	1.4.2011						
Order dated 17.8.2015 in Petition No.	Asset-C1	1.11.2011	1450.28	0.00	185.96	310.51	0.00	1946.75
	Asset-	1.1.2012	1519.15	0.00	50.06	577.06	0.00	2146.27



109/TT/2012	C2							
Order dated 28.5.2012 in Petition No. 136/TT/2011	Asset-D	1.7.2011	2333.45	0.00	152.65	0.00	0.00	2486.10

6. The details of the transmission charges allowed in aforesaid orders for the instant assets are summarized hereunder:-

(₹ in lakh)

Particulars	Petition No. 336/TT/2010			
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Depreciation	50.96	141.05	148.34	150.45
Interest on Loan	59.37	156.01	151.64	140.69
Return on Equity	50.58	139.91	147.15	149.24
Interest on Working Capital	6.21	16.30	16.95	17.32
O & M Expenses	71.56	181.57	191.94	202.92
Total	238.68	634.84	656.02	660.62

(₹ in lakh)

Particulars	Petition No. 56/TT/2011 (Asset-I)			
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Depreciation	32.48	435.97	480.87	487.73
Interest on Loan	45.08	583.20	604.16	571.35
Return on Equity	38.30	512.86	565.10	573.83
Interest on Working Capital	3.11	40.58	43.47	43.87
O & M Expenses	21.04	266.99	282.25	298.37
Total	140.01	1839.60	1975.85	1975.14

(₹ in lakh)

Particulars	Petition No. 56/TT/2011 (Asset-II)	Petition No. 56/TT/2011 (Asset-II&III)		
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Depreciation	8.75	171.64	212.31	222.19
Interest on Loan	10.38	195.98	227.03	218.95
Return on Equity	8.68	170.38	210.77	220.59
Interest on Working Capital	1.16	24.22	27.23	28.28
O & M Expenses	14.31	281.14	297.20	314.20
Total	43.27	843.37	974.55	1004.21



(₹ in lakh)

Particulars	Petition No. 56/TT/2011 (Asset-IV&V)		
	2011-12	2012-13	2013-14
Depreciation	232.31	266.26	276.47
Interest on Loan	259.32	277.09	264.78
Return on Equity	230.37	264.08	274.22
Interest on Working Capital	31.83	34.53	35.74
O & M Expenses	363.14	383.88	405.84
Total	1116.96	1225.83	1257.06

(₹ in lakh)

Particulars	Petition No.109/TT/2012					
	Asset-I			Asset-II		
	2011-12 (pro-rata)	2012-13	2013-14	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	33.02	91.28	99.20	19.99	95.65	110.10
Interest on Loan	41.40	109.79	111.11	23.98	110.40	119.27
Return on Equity	33.72	93.95	102.09	20.25	97.43	112.56
Interest on Working Capital	5.79	15.09	15.97	3.46	15.26	16.56
O & M Expenses	75.65	191.94	202.92	45.39	191.94	202.92
Total	189.58	502.05	531.30	113.06	510.67	561.40

(₹ in lakh)

Particulars	Petition No. 136/TT/2011		
	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	92.96	127.95	127.95
Interest on Loan	108.50	139.62	128.30
Return on Equity	94.78	130.38	130.38
Interest on Working Capital	12.45	17.15	17.45
O & M Expenses	136.18	191.94	202.92
Total	444.86	607.03	607.00

Truing-up of Annual Fixed Charges of 2009-14 tariff period

7. The tariff of 2009-14 has been trued up as discussed below. The annual transmission charges for 2009-14 tariff period is trued up in the same way as it was worked out in the final tariff petition as mentioned below:-



- i. **Asset-A1:** The tariff has been worked out from the date of commercial operation i.e. 1.11.2010 to 31.3.2011 on pro-rata basis i.e. only for 2010-11. Subsequently, the admitted COD cost and ACE of 2010-11, cumulative depreciation as on 31.3.2011, cumulative repayment of normative loan of Asset-A1 has been merged with Combined Asset B4 and B5 from 1.4.2011.
- ii. **Asset-B1:** The tariff has been worked out from date of commercial operation date i.e. 1.3.2011 to 31.3.2014.
- iii. **Asset-B2:** The tariff has been worked out from date of commercial operation date i.e. 1.3.2011 to 31.3.2011 on pro-rata basis i.e. only for 2010-11. Subsequently, the admitted COD cost and ACE of 2010-11, cumulative depreciation as on 31.3.2011, cumulative repayment of normative loan of Asset- A1 has been merged with combined asset B2 and B3 from 1.4.2011.
- iv. **Combined Asset-B2 and B3:** The tariff has been worked out from based on the notional date of commercial operation i.e. 1.4.2011 which would be applicable for the period from 1.4.2011 to 31.3.2014.
- v. **Combined Asset-B4 and B5:** The tariff has been worked out based on the notional date of commercial operation i.e. 1.4.2011 which would be applicable for the period from 1.4.2011 to 31.3.2014.



- vi. **Asset-C1, C2 and D:** The tariff has been worked out from the date of commercial operation i.e. 1.3.2011 to 31.3.2014.

Capital Cost

8. Regulation 6 of the 2009 Tariff Regulations provides as under:-

“6. Truing up of Capital Expenditure and Tariff.

(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2014, as admitted by the Commission after prudence check at the time of truing up.

Provided that the generating company or the transmission licensee, as the case may be, may in its discretion make an application before the Commission one more time prior to 2013- 14 for revision of tariff.

(2) The generating company or the transmission licensee, as the case may be, shall make an application, as per Appendix I to these regulations, for carrying out truing up exercise in respect of the generating station a unit or block thereof or the transmission system or the transmission lines or sub-stations thereof by 31.10.2014;

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

(4) Where after the truing up, the tariff recovered exceeds the tariff approved by the Commission under these regulations, the generating company or the transmission licensee, as the case may be, shall refund to the beneficiaries or the transmission customers, as the case may be, the excess amount so recovered along with simple interest at the rates specified in the proviso to this regulation.

(5) Where after the truing up, the tariff recovered is less than the tariff approved by the Commission under these regulations, the generating company or the transmission licensee, as the case may be, shall recover from the beneficiaries or the transmission customers, as the case may be, the under-recovered amount along with simple interest at the rates specified in the proviso to this regulation.

(6) The amount under-recovered or over-recovered, along with simple interest at the rates specified in the proviso to this regulation, shall be recovered or refunded by the generating company or the transmission licensee, as the case may be, in six equal monthly installments starting within three months from Page 3 of 6 the date of the tariff order issued by the Commission after the truing up exercise.



Provided that the rate of interest, for clauses (4), (5) and (6) of this regulation, for calculation of simple interest shall be considered as under:

(i) SBI short-term Prime Lending Rate as on 01.04.2009 for the year 2009-10.

(ii) SBI Base Rate as on 01.07.2010 plus 350 basis points for the year 2010-11.

(iii) Monthly average SBI Base Rate from 01.07.2010 to 31.3.2011 plus 350 basis points for the year 2011-12.

(iv) Monthly average SBI Base Rate during previous year plus 350 basis points for the year 2012-13 & 2013-14.”

9. The details of apportioned approved cost and actual additional capitalization claimed up to 31.3.2014 along with projected expenditure during 2014-19 period for the assets covered in this petition are summarized as under:-

(₹ in lakh)

Asset No.	Cost as per FR	Cost as on COD	Additional Capital Expenditure						Completion cost
			2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	
Asset-A1 [#]	3072.63	2134.08	21.29	40.07	68.79	164.61	182.68	0.00	2611.52
Asset-B1	14465.35	8866.44	118.42	545.99	421.28	26.68	18.32	0.00	9996.13
Asset-B2 [@]	3023.83	1945.85	0.00	112.06	287.96	10.03	195.49	0.00	2551.39
Asset-B3 [@]	2453.88	501.47	0.00	28.01	967.09	89.68	34.41	0.00	1620.66
Asset-B4 [#] \$	3072.63	2134.08	21.29	40.07	68.79	164.61	182.68	0.00	2611.52
Asset-B5 ^{\$}	3069.75	2278.99	0.00	286.72	202.45	126.78	0.00	0.00	2894.94
Asset-C1	2671.54	1477.01	0.00	59.77	275.98	8.09	0.00	0.00	1820.85
Asset-C2	2829.24	1578.28	0.00	130.76	106.26	8.22	35.30	49.01	1907.83
Asset-D	2486.10	2025.33	0.00	197.74	3.50	50.08	34.40	0.00	2311.05
Total (excluding B4)	34072.32	20807.45	139.71	1400.12	2333.31	484.17	500.60	49.01	25714.37

Asset A1 and Asset B4 are the same hence for total purpose the capital cost of B4 is not considered.

\$ Asset B4 and Asset B5 are combined w.e.f. 1.4.2011 for tariff purpose base on Notional COD

@ Asset B2 and Asset B3 are combined w.e.f. 1.4.2011 for tariff purpose base on Notional COD



Cost over-run

10. The completion cost as per Auditor certificate is within the allocated FR cost for all individual assets. Hence, there is no cost over-run in case of individual assets.

11. MPPMCL has submitted that the extension work was planned in already levelled area of existing switchyard at 400/220 kV Raipur Sub-station. However, during the detailed engineering and finalization of working drawing it was found that ICT and its 400 kV can be accommodated in existing levelled area but 220 kV bays for ICT and associated 2 number of lines could not be placed in it and additional area was required. Further, there was a level difference of 4 mtrs. with respect to existing level and nearby area. Accordingly, additional work of levelling and preparation of 220 kV area involving 35697.55 mtrs. cutting and filling along with associated road and drain in it was added as per actual requirement. MPPMCL has submitted that the petitioner's preliminary survey was faulty and the additional expenditure due to such faulty planning is will purely attributable to the petitioner. Hence, the claim should be disallowed.

12. In response, the petitioner has submitted that ICT-III and its 400 kV bay are installed in existing earlier levelled area whereas, adjacent area was levelled for 220 kV bays, which was not originally envisaged in FR. Due to this additional area, 4.2 km of MS rod for earth mat increased, causing increase in cost under this head. It was further submitted that the Commission in Petition No. 136/TT/2011 in order dated 28.5.2012 has admitted the capital cost as claimed. The petitioner requested to allow the completion cost as claimed in the instant petition. We have considered the



submissions of MPPMCL and the petitioner. The capital cost of the instant assets already admitted by the Commission while granting final tariff for the 2009-14 tariff period is considered for truing up of the cost of the 2009-14 tariff period in this order.

Interest During Construction (IDC)

13. The allowable IDC has been worked out considering the information submitted by the petitioner and has been worked out for the individual assets separately on cash basis after considering the time over-run period which has been not condoned by Commission. The loan details submitted in Form-13 for period 2009-14 and the IDC computation sheet were also considered for the purpose of IDC calculation on cash and accrued basis. As stated earlier, Asset A1 of Petition No. 336/TT/2010 was merged with Asset 4 in Petition No. 56/TT/2011 (i.e. Asset B4 in the instant petition). Therefore, the IDC statement sheet of Asset-B4 has been considered for the computation of IDC of Asset A1. The asset wise IDC claimed by the petitioner and allowable IDC as on COD worked out are summarized hereunder:-

(₹ in lakh)

Particular	IDC claimed as per Auditor's Certificate	Entitled IDC as on COD as worked out on accrual basis	IDC dis-allowed due to time over-run and computational difference	Entitled IDC worked out on cash basis as on COD	Un-discharged IDC as on COD eligible to be claimed as ACE
a	b	c	d=b-c	e	f =c-e
Asset A1*	123.19	119.60	3.59	72.19	47.41
Asset B1	686.28	632.68	53.60	439.00	193.68
Asset B2	211.64	198.18	13.46	148.62	49.56
Asset B3	38.98	38.92	0.06	21.74	17.18
Asset B5	67.76	67.76	0.00	67.76	0.00
Asset C1	126.70	57.00	69.70	50.93	6.07



Asset C2	150.28	70.14	80.14	61.08	9.06
Asset D	166.92	133.86	33.06	133.86	0.00
Total	1571.75	1318.15	253.60	995.18	322.96

*Asset A1 and Asset B4 refers to same asset

Incidental Expenditure during Construction (IEDC)

14. The allowable IEDC has been worked out considering the percentage of IEDC on Hard Cost as indicated in the Abstract Cost Estimate as per original investment approval i.e. 10.75%. Thus, the IEDC claimed is within this limit in case of all the individual assets. The details of the IEDC claimed by the petitioner and allowed are as follows:-

(₹ in lakh)		
Asset	Claimed as per the Auditor's Certificate dated 17.10.2014	IEDC allowed
Asset A1*	43.51	43.51
Asset B1	273.48	273.48
Asset B2	104.73	104.73
Asset B3	14.72	14.72
Asset B5	29.30	29.30
Asset C1	-35.74	-35.74
Asset C2	-42.40	-42.40
Asset D	-47.09	-47.09
Total	340.51	340.51

*Asset A1 and Asset B4 refers to same asset

Liquidated Damages (LD) adjustment

15. The petitioner was directed to submit the details of disallowed IDC and IEDC added back to the capital cost. The petitioner, vide affidavit dated 9.12.2016, has submitted the following asset wise details of LD recovered from the contractors and has stated that these amounts were adjusted in the capital cost of the respective asset. The petitioner has further submitted that



IDC and IEDC disallowed in Petition No. 109/TT/2012 and the assets covered in Petition No. 136/TT/2011 are added back to the capital cost.

(₹ in lakh)

Asset	IDC and IEDC disallowed	LD recovered	Disallowed IDC and IEDC added back to the capital cost
Asset C1	9.94	7.92	7.92
Asset C2	2.90	38.62	2.90
Asset D	50.70	2.08	2.08

16. It is observed that the information submitted by the petitioner vide affidavits dated 9.12.2016 and 9.6.2017 are not matching. Moreover, the Auditor Certificate is silent about the LD adjustment. Therefore, no further adjustment has been carried out because of inconsistency in petitioner's submission and the Auditor certificate is silent on this issue. The issue of deviation will be taken up at the time of true up of tariff of 2014-19 period.

Treatment of initial spares

17. Regulation 13 of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system as under:-

“13. Initial Spares

Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(d) Transmission system

(i) Transmission line - 1.00%

(ii) Transmission Sub-station (Green Field) - 4.00%

(iii) Transmission Sub-station (Brown Field) - 6.00%

(iv) Series Compensation devices and HVDC Station - 4.00%

(i) Gas Insulated Sub-station (GIS)-5.00%



(vi) Communication system-3.5%

Provided that:

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) where the generating station has any transmission equipment forming part of the generation project, the ceiling norm for initial spares for such equipments shall be as per the ceiling norms specified for transmission system under these regulations:

(iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the break up of head wise IDC & IEDC in its tariff application.”

18. The details of the Initial Spares pertaining to sub-station claimed by the petitioner and allowable as per the above said regulation are as follows:-

(₹ in lakh)					
Particulars	Capital cost claimed as on “cut-off” date i.e. 31.3.2014	Initial spares claimed	Ceiling limit as per 2009 Tariff Regulations	Allowable initial spares	Excess initial spares claimed
Asset A1*	2264.23	145.54	2.5%	54.33	91.21
Asset B1	3189.54	140.43	2.5%	78.18	62.25
Asset B2	2355.90	89.92	2.5%	58.10	31.82
Asset B3	1586.25	43.15	2.5%	39.57	3.58
Asset B5	2894.94	98.37	2.5%	71.71	26.66
Asset C1	1820.84	99.10	2.5%	44.15	54.95
Asset C2	1858.82	74.18	2.5%	45.76	28.42
Asset D	2276.65	64.13	2.5%	56.73	7.40
Total Excess initial spare claimed					306.29

*Asset A1 and Asset B4 refers to same asset

19. MPPMCL has submitted that initial spares may be allowed as per the norms specified in the 2009 Tariff Regulations. In response, the petitioner has submitted that the excess amount of initial spares has been deducted from the



capital cost of the asset under Petition No. 136/TT/2011 vide order dated 28.5.2012. However, in Petition No. 33/TT/2013, the Commission vide order dated 25.4.2013, allowed initial spares considering the ceiling limit of Project as a whole instead of applying element wise. The petitioner has further submitted that after clubbing of assets for the purpose of tariff of the Project as whole, individual elements have lost their identity and therefore restricting of initial spares on individual elements becomes infructuous.

20. We have considered the submissions of MPPMCL and the petitioner. Initial spares are allowed for the instant as per the norms specified in the 2014 Tariff Regulations on the basis of the capital cost of the individual assets.

Capital cost allowed as on COD

21. Based on the above, the summary of capital cost allowed as on COD are shown below:-

(₹ in lakh)						
Asset	Capital cost as on COD claimed by petitioner	IDC disallowed due to time over-run	Un-discharged IDC as on COD eligible for ACE	IEDC disallowed on COD.	Excess Initial Spare disallowed	Capital cost as on COD considered for tariff calculation
1	2	3	4	5	6	7= (2-3-4-5-6)
Asset A1*	2134.08	3.59	47.41	0.00	91.21	1991.87
Asset B1	8866.44	53.60	193.68	0.00	62.25	8556.91
Asset B2	1945.85	13.46	49.56	0.00	31.82	1851.01
Asset B3	501.47	0.06	17.18	0.00	3.58	480.65
Asset B5	2278.99	0.00	0.00	0.00	26.66	2252.33
Asset C1	1477.01	69.70	6.07	0.00	54.95	1346.29
Asset C2	1578.28	80.14	9.06	0.00	28.42	1460.66
Asset D	2025.33	33.06	0.00	0.00	7.40	1984.88
Total	20807.45	253.61	322.96	0.00	306.30	19924.58

*Asset A1 and Asset B4 refers to same asset



Additional capital expenditure

22. Clause (1) of Regulation 9 of the 2009 Tariff Regulations provides as under:-

“Additional Capitalisation: (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of Regulation 8;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law.”

23. The “cut-off” date for Asset A1/B4 is 31.3.2013, for Asset B1, B2, B3, B5 C1 and D is 31.3.2014. The “cut-off” date for Asset C2 is 31.3.2015.

24. The Additional Capital Expenditure claimed by the petitioner on the basis of the Auditor certificate are as under:-

	(₹ in lakh)			
Asset	2010-11	2011-12	2012-13	2013-14
Asset–A1	21.29	40.07	68.79	164.61
Asset–B1	118.42	545.99	421.28	26.68
Asset–B2	0.00	112.06	287.96	10.03
Asset–B3	0.00	28.01	967.09	89.68
Asset–B4	21.29	40.07	68.79	164.61
Asset–B5	0.00	286.72	202.45	126.78
Asset–C1	0.00	59.77	275.98	8.09
Asset–C2	0.00	130.76	106.26	8.22
Asset–D	0.00	197.74	3.50	50.08
Total (excluding A1)	139.71	1400.12	2333.31	484.17



25. In addition to the above, the petitioner also claimed the following IDC discharged as Additional Capital Expenditure under Regulation 19(1)(i) of the 2014 Tariff Regulations:-

(₹ in lakh)				
Asset	2010-11	2011-12	2012-13	2013-14
Asset-A1	39.71	11.29	0.00	0.00
Asset-B1	17.85	229.43	0.00	0.00
Asset-B2	8.92	54.1	0.00	0.00
Asset-B3	0.00	17.24	0.00	0.00
Asset-B5	0.00	0.00	0.00	0.00
Asset-C1	0.00	1.4	74.37	0.00
Asset-C2	0.00	0.00	0.00	0.00
Asset-D	17.85	0.00	0.00	0.00
Total	84.33	313.46	74.37	0.00

26. The petitioner vide Form 9 has claimed ACE by adding the ACE given in the Auditor certificate and the IDC discharged under Regulation 9(1)(i) of the 2009 Tariff Regulations which refers to un-discharged liabilities prior to “cut-off” date. As per Form 9A submitted, vide affidavit dated 9.6.2017, the petitioner had increased the Gross Block (i.e. fresh capitalization) even after COD for all the assets except for Asset C2. But, the petitioner has claimed entire Additional Capital Expenditure under Regulation 9(1)(i) of the 2009 Tariff Regulations which refers to un-discharged liabilities pertaining to the already capitalized amount (i.e. Gross block as on COD). Since the Auditor certificate does not clarify the Gross Block capitalized as on COD, it is difficult to identify whether the ACE claimed is towards liability or fresh capitalization. However, the capital cost claimed as per Auditor certificate has been allowed up to “cut-off” date for all the assets for the 2009-14 period.



27. The petitioner vide Auditor certificate has claimed ACE amounting ₹164.61 lakh during 2013-14 and the same has been claimed in Form 9 under Regulation 9(1)(i) of the 2009 Tariff Regulations. As per Form 9A for Asset B4, submitted vide affidavit dated 9.6.2017, it is observed that the the ACE claim of ₹164.61 lakh for the year 2013-14 consist of ₹91.12 lakh towards discharge of liability and ₹73.49 lakh towards fresh capitalization. The discharge of liability is pertaining to the COD cost, hence, the same has been allowed. However, the fresh capitalization of ₹73.49 lakh after the “cut-off” date (i.e. 31.3.2013) has been not allowed as the petitioner had made the wrong claim under Regulation 9(1)(i) of the 2009 Tariff Regulations under discharge of liability. Accordingly, ₹73.49 lakh pertaining to Asset B4 for the year 2013-14 has been not considered for the purpose of tariff.

28. In addition to the above, the liability pertaining to IDC has been allowed as additional capitalization in the concerned financial year to the extent it has been actually discharged out of allowable IDC as on COD as determined in above paragraphs. The following liability discharged has been considered as Additional Capital Expenditure under Regulation 9(1)(i) of the 2009 Tariff Regulations:-

(₹ in lakh)				
Discharge of IDC allowed as ACE under Regulation 9(1)(i)				
Asset No.	2010-11	2011-12	2012-13	2013-14
Asset–A1	39.71	7.70	0.00	0.00
Asset–B1	17.85	175.83	0.00	0.00
Asset–B2	8.92	40.64	0.00	0.00
Asset–B3	0.00	17.18	0.00	0.00
Asset–B5	0.00	0.00	0.00	0.00
Asset–C1	0.00	1.40	4.67	0.00



Asset-C2	0.00	0.00	9.06	0.00
Asset-D	0.00	0.00	0.00	0.00
Total	66.48	242.75	13.73	0

29. Accordingly, for the purpose of truing up, the ACE allowed during the tariff period 2009-14 is summarized below:-

(₹ in lakh)

Asset A1/B4	Allowed Add Cap (including discharge of liability) as part of A1	Allowed Add Cap (including discharge of liability) as part of Asset B4 and combined with B5 w.e.f 1.4.2011		
	2010-11	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other Civil Works	3.75	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00	0.00
Sub-Station Equipments	57.25	47.77	68.79	91.12
PLCC	0.00	0.00	0.00	0.00
Total	61.00	47.77	68.79	91.12

(₹ in lakh)

Asset B1	Allowed Add Cap (including discharge of liability)			
	2010-11	2011-12	2012-13	2013-14
Freehold Land	70.88	25.27	81.29	0.00
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other Civil Works	32.14	200.21	92.56	1.63
Transmission Line	25.94	257.90	18.79	14.71
Sub-Station Equipments	7.09	235.15	228.64	10.34
PLCC	0.23	2.28	0.00	0.00
Total	136.27	720.82	421.28	26.68

(₹ in lakh)

Asset B2	Allowed Add Cap (including discharge of liability)	Allowed Add Cap (including discharge of liability) and combined with B3		
	2010-11	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other	0.00	0.00	0.00	0.00



Civil Works				
Transmission Line	0.00	0.00	0.00	0.00
Sub-Station Equipments	8.92	152.70	287.96	10.03
PLCC	0.00	0.00	0.00	0.00
Total	8.92	152.70	287.96	10.03

(₹ in lakh)

Asset B3	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	45.19	967.09	89.68
PLCC	0.00	0.00	0.00
Total	45.19	967.09	89.68

(₹ in lakh)

Asset B2+ B3	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	197.89	1255.05	99.71
PLCC	0.00	0.00	0.00
Total	197.89	1255.05	99.71

(₹ in lakh)

Asset B5	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	286.72	202.45	126.78
PLCC	0.00	0.00	0.00
Total	286.72	202.45	126.78



(₹ in lakh)

Asset B4 + B5	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	334.49	271.24	217.90
PLCC	0.00	0.00	0.00
Total	334.49	271.24	217.90

(₹ in lakh)

Asset C1	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	16.16	33.16	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	47.75	244.62	8.09
PLCC	-2.74	2.87	0.00
Total	61.17	280.65	8.09

(₹ in lakh)

Asset C2	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	1.58	0.51	0.00
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	129.18	114.71	8.22
PLCC	0.00	0.10	0.00
Total	130.76	115.32	8.22

(₹ in lakh)

Asset D	Allowed Add Cap (including discharge of liability)		
	2011-12	2012-13	2013-14
Freehold Land	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00
Building & Other Civil Works	0.00	3.50	37.32
Transmission Line	0.00	0.00	0.00
Sub-Station Equipments	182.34	0.00	12.76
PLCC	15.40	0.00	0.00
Total	197.74	3.50	50.08



Summary of Capital cost considered for tariff for the period from COD-31.3.2014

30. Based on the above, the capital cost as on COD and the additional capital expenditure considered for tariff computation for Asset A1 and Asset B2 are summarised as below:-

(₹ in lakh)

Asset	Capital Cost allowed as on COD	2010-11	Total cost allowed as on 1.4.2011	Remarks
Asset-A1/B4	1991.87	61.00	2052.87	w.e.f.1.4.2011 combined with B5
Asset B2	1851.01	8.92	1859.93	w.e.f. 1.4.2011 combined with B3

31. The capital cost allowed up to 1.4.2011 for Asset A1 as mentioned above is considered for grant of tariff from COD to 31.3.2011 and later this cost has been added with the COD cost of combined asset B4 and B5 The capital cost allowed up to 1.4.2011 for Asset B2 as mentioned above is considered for grant of tariff from COD to 31.3.2011 and later this cost has been added with the COD cost of combined asset B2 and B3. Accordingly, the capital cost of the Asset B1, combined assets of B2 and B3, combined assets of B4 and B5, Asset C1, Asset C2, Asset D are worked out as shown below:-

(₹ in lakh)

Asset	Capital cost allowed as on COD	2010-2011	2011-12	2012-13	2013-14	As on 31.3.2014
1	2		4	5	6	
Asset B1	8556.91	136.27	720.82	421.28	26.68	9861.96
Asset B2 & B3	2340.58	-	197.89	1255.05	99.71	3893.23
Asset B4 & B5	4305.19	-	334.49	271.24	217.90	5128.82
Asset C1	1346.29	-	61.17	280.65	8.09	1696.20
Asset C2	1460.66	-	130.76	115.32	8.22	1714.96



Asset D	1984.88	-	197.74	3.50	50.08	2236.20
Total	19994.51	136.27	1642.87	2347.04	410.68	24531.36

32. The element wise break up of capital cost allowed as on 31.3.2014 are summarised as under:-

(₹ in lakh)

Element wise Capital cost as on 31.3.2014							
	Asset B1	Asset B2 & B3	Asset B4 & B5	Asset C1	Asset C2	Asset D	Total
Freehold Land	1407.42	0.00	0.00	0.00	0.00	0.00	1407.42
Leasehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0
Building & Other Civil Works	756.83	0.00	8.91	133.76	84.26	220.21	1203.97
Transmission Line	5354.13	0.00	0.00	0.00	0.00	0.00	5354.13
Sub-Station Equipments	2229.98	3893.23	5109.04	1534.30	1614.21	2000.58	16381.34
PLCC	113.60	0.00	10.87	28.13	16.49	15.40	184.49
Total	9861.96	3893.23	5128.82	1696.20	1714.96	2236.20	24531.36

Debt: Equity Ratio

33. Regulation 12(1) of the 2009 Tariff Regulations provides as follows:-

“12. Debt-Equity Ratio.

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

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

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

Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.”



34. The debt: equity ratio of 70:30, has been considered as on COD of instant assets, as provided in Regulation 12(1) of the 2009 Tariff Regulations. The normative debt:equity ratio considered for the ACE for the purpose of truing up of the approved tariff of 2009-14 tariff period is as under:-

(₹ in lakh)

Asset- A1				
Particulars	As on COD		As on 31.3.2011	
	Amount	%	Amount	%
Debt	1394.31	70.00	1437.01	70.00
Equity	597.56	30.00	615.86	30.00
Total	1991.87	100.00	2052.87	100.00

(₹ in lakh)

Asset- B1				
Particulars	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	5989.84	70.00	6903.37	70.00
Equity	2567.07	30.00	2958.59	30.00
Total	8556.91	100.00	9861.96	100.00

(₹ in lakh)

Asset- B2				
Particulars	As on COD		As on 31.3.2011	
	Amount	%	Amount	%
Debt	1295.71	70.00	1301.95	70.00
Equity	555.30	30.00	557.98	30.00
Total	1851.01	100.00	1859.93	100.00

(₹ in lakh)

Asset- B2+B3				
Particulars	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	1638.41	70.00	2725.26	70.00
Equity	702.17	30.00	1167.96	30.00
Total	2340.58	100.00	3893.23	100.00



(₹ in lakh)

Asset- B4+B5				
Particulars	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	3013.64	70.00	3590.17	70.00
Equity	1291.56	30.00	1538.64	30.00
Total	4305.19	100.00	5128.82	100.00

(₹ in lakh)

Asset- C1				
Particulars	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	942.40	70.00	1187.34	70.00
Equity	403.88	30.00	508.86	30.00
Total	1346.29	100.00	1696.20	100.00

(₹ in lakh)

Asset- C2				
Particular	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	1022.47	70.00	1200.48	70.00
Equity	438.19	30.00	514.48	30.00
Total	1460.66	100.00	1714.96	100.00

(₹ in lakh)

Asset-D				
Particulars	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	1389.41	70.00	1565.34	70.00
Equity	595.46	30.00	670.86	30.00
Total	1984.88	100.00	2236.20	100.00

Return on Equity (ROE)

35. 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 maybe, 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.”

36. The petitioner has submitted the MAT rate applicable during the various years. RoE on equity has been worked out by considering year wise MAT rate submitted by the petitioner in accordance with Regulation 15 of the 2009 Tariff Regulations. The variation in the tax rate during the 2009-14 tariff period applicable to the petitioner as per the Finance Act of the relevant year for the purpose of grossing up of ROE is as follows:-

Year	MAT Rate (in %)	Grossed up ROE (Base rate/(1-t) (in %)
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

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



(₹ in lakh)

Asset- A1	
Particulars	2010-11 (pro-rata)
Opening Equity	597.56
Addition due to Additional Capitalization	18.30
Closing Equity	615.86
Average Equity	606.71
Return on Equity (Base Rate)	15.50%
Tax rate for the year 2008-09	19.931%
Rate of Return on Equity (Pre Tax)	19.358%
Return on Equity (Pre Tax)	48.59

(₹ in lakh)

Asset- B1				
Particulars	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Opening Equity	2567.07	2607.95	2824.20	2950.58
Addition due to Additional Capitalization	40.88	216.24	126.38	8.00
Closing Equity	2607.95	2824.20	2950.58	2958.59
Average Equity	2587.51	2716.08	2887.39	2954.59
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
Tax rate (MAT)	19.931%	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.358%	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	42.54	526.29	559.49	579.42

(₹ in lakh)

Particulars	Asset- B2	Asset- B2 +B3		
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Opening Equity	555.30	702.17	761.54	1138.05
Addition due to Additional Capitalization	2.68	59.37	376.52	29.91
Closing Equity	557.98	761.54	1138.05	1167.96
Average Equity	556.64	731.85	949.79	1153.01
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
Tax rate (MAT)	19.931%	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.358%	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	8.86	141.81	184.04	226.12

(₹ in lakh)

Asset- B4 +B5			
Particulars	2011-12	2012-13	2013-14
Opening Equity	1291.56	1391.90	1473.27
Addition due to Additional Capitalization	100.35	81.37	65.37
Closing Equity	1391.90	1473.27	1538.64
Average Equity	1341.73	1432.59	1505.96
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate (MAT)	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	259.99	277.59	295.33



(₹ in lakh)

Asset- C1			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Equity	403.88	422.24	506.43
Addition due to Additional Capitalization	18.35	84.20	2.43
Closing Equity	422.24	506.43	508.86
Average Equity	413.06	464.33	507.64
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate (MAT)	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	33.33	89.97	99.55

(₹ in lakh)

Asset- C2			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Equity	438.19	477.42	512.02
Addition due to Additional Capitalization	39.23	34.60	2.47
Closing Equity	477.42	512.02	514.48
Average Equity	457.81	494.72	513.25
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate (MAT)	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	22.12	95.86	100.65

(₹ in lakh)

Asset- D			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Equity	595.46	654.78	655.83
Addition due to Additional Capitalization	59.32	1.05	15.02
Closing Equity	654.78	655.83	670.86
Average Equity	625.12	655.31	663.35
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate (MAT)	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	91.26	126.98	130.09

Interest on Loan ("IOL")

38. Regulation 16 of the 2009 Tariff regulations provides that,-

"16. (1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.



(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed,.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project:

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.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”



39. The petitioner has claimed the IOL based on actual interest rates for each year during the 2009-14 period. We have considered the submissions of the petitioner and accordingly calculated the IOL based on actual interest rate, in accordance with Regulation 16 of the 2009 Tariff Regulations.

40. In the calculations, the interest on loan has been worked out as detailed below:-

- (i) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition;
- (ii) The repayment for the tariff period 2009-14 has been considered to be equal to the depreciation allowed for that period.

41. The details of weighted average rate of interest are given in **Annexure-I** to **Annexure-VIII**. The IOL allowed under Regulation 16 of the 2009 Tariff Regulations is as follows:-

(₹ in lakh)

Asset- A1	
Particulars	2010-11 (pro-rata)
Gross Normative Loan	1394.31
Cumulative Repayment upto Previous Year	0.00
Net Loan-Opening	1394.31
Addition due to Additional capitalisation	42.70
Repayment during the year	44.12
Net Loan-Closing	1392.89
Average Loan	1393.60
Weighted Average Rate of Interest on Loan	8.9272%
Interest	51.47



(₹ in lakh)

Particulars	Asset-B1			
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Gross Normative Loan	5989.84	6085.23	6589.80	6884.69
Cumulative Repayment upto Previous Year	0.00	32.37	431.31	854.77
Net Loan-Opening	5989.84	6052.86	6158.49	6029.93
Addition due to Additional capitalisation	95.39	504.57	294.90	18.68
Repayment during the year	32.37	398.94	423.45	432.22
Net Loan-Closing	6052.86	6158.49	6029.93	5616.38
Average Loan	6021.35	6105.67	6094.21	5823.16
Weighted Average Rate of Interest on Loan	8.8428%	8.8596%	8.8802%	8.8862%
Interest	45.22	540.94	541.17	517.46

(₹ in lakh)

Particulars	Asset- B2	Asset-B2+B3		
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Gross Normative Loan	1295.71	1638.41	1776.93	2655.47
Cumulative Repayment upto Previous Year	0.00	8.05	136.86	304.02
Net Loan-Opening	1295.71	1630.36	1640.07	2351.44
Addition due to Additional capitalisation	6.24	138.52	878.54	69.80
Repayment during the year	8.05	128.81	167.16	202.93
Net Loan-Closing	1293.90	1640.07	2351.44	2218.31
Average Loan	1294.80	1635.22	1995.76	2284.88
Weighted Average Rate of Interest on Loan	9.0601%	9.0197%	8.5667%	8.2631%
Interest	9.64	147.49	170.97	188.80

(₹ in lakh)

Particulars	Asset-B4+B5		
	2011-12	2012-13	2013-14
Gross Normative Loan	3013.64	3247.78	3437.64
Cumulative Repayment upto Previous Year	44.12	280.20	532.28
Net Loan-Opening	2969.52	2967.57	2905.36
Addition due to Additional capitalisation	234.14	189.87	152.53
Repayment during the year	236.09	252.08	264.99
Net Loan-Closing	2967.57	2905.36	2792.90
Average Loan	2968.54	2936.47	2849.13
Weighted Average Rate of Interest on Loan	8.9351%	8.9385%	8.8331%
Interest	265.24	262.48	251.67

(₹ in lakh)

Particulars	Asset-C1		
	2011-12 (pro-rata)	2012-13	2013-14
Gross Normative Loan	942.40	985.22	1181.68
Cumulative Repayment upto Previous Year	0.00	29.64	109.37



Net Loan-Opening	942.40	955.58	1072.30
Addition due to Additional capitalisation	42.82	196.46	5.66
Repayment during the year	29.64	79.73	87.05
Net Loan-Closing	955.58	1072.30	990.92
Average Loan	948.99	1013.94	1031.61
Weighted Average Rate of Interest on Loan	9.3462%	9.3027%	9.2713%
Interest	36.94	94.32	95.64

(₹ in lakh)

Particulars	Asset-C2		
	2011-12 (pro-rata)	2012-13	2013-14
Gross Normative Loan	1022.47	1114.00	1194.72
Cumulative Repayment upto Previous Year	0.00	20.61	106.23
Net Loan-Opening	1022.47	1093.38	1088.49
Addition due to Additional capitalisation	91.53	80.72	5.75
Repayment during the year	20.61	85.61	88.87
Net Loan-Closing	1093.38	1088.49	1005.38
Average Loan	1057.92	1090.94	1046.93
Weighted Average Rate of Interest on Loan	8.9761%	8.9985%	9.0062%
Interest	23.67	98.17	94.29

(₹ in lakh)

Particulars	Asset-D		
	2011-12 (pro-rata)	2012-13	2013-14
Gross Normative Loan	1389.41	1527.83	1530.28
Cumulative Repayment upto Previous Year	0.00	80.33	192.31
Net Loan-Opening	1389.41	1447.50	1337.97
Addition due to Additional capitalisation	138.42	2.45	35.06
Repayment during the year	80.33	111.98	113.00
Net Loan-Closing	1447.50	1337.97	1260.02
Average Loan	1418.46	1392.73	1298.99
Weighted Average Rate of Interest on Loan	9.2063%	9.2048%	9.1853%
Interest	98.39	128.20	119.32

Depreciation

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

"(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.”

43. Assets A1 and B4 were put under commercial operation on 1.11.2014, Assets B1 and B2 were put under commercial operation on 1.3.2011, Assets B3 and B5 were put under commercial operation on 1.4.2011, Asset C1 was put under commercial operation on 1.11.2011, C2 was put under commercial operation on 1.1.2012 and Asset D was put under commercial operation on 1.7.2011. These assets would complete 12 years beyond 2013-14. Accordingly, depreciation has been calculated annually based on Straight Line Method and at rates specified in the 2009 Tariff Regulations. The depreciation for the tariff period 2009-14 has been trued up in accordance with Regulation 17 of the 2009 Tariff Regulations based on admitted capital expenditure as under:-

(₹ in lakh)

Asset-A1	
Particulars	2010-11 (pro-rata)
Opening Gross Block	1991.87
Addition during 2009-14 due to Projected Additional Capitalisation	61.00
Closing Gross Block	2052.87
Average Gross Block	2022.37
Rate of Depreciation	5.2733%
Depreciable Value	1820.13
Remaining Depreciable Value	1820.13
Depreciation	44.12

(₹ in lakh)

Asset-B1				
Particulars	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Opening Gross Block	8556.91	8693.18	9414.00	9835.28
Addition during 2009-14 due to Projected Additional Capitalisation	136.27	720.82	421.28	26.68
Closing Gross Block	8693.18	9414.00	9835.28	9861.96



Average Gross Block	8625.05	9053.59	9624.64	9848.62
Rate of Depreciation	4.4185%	4.4065%	4.3997%	4.3887%
Depreciable Value	6623.67	6966.09	7432.08	7597.08
Remaining Depreciable Value	6623.67	6933.72	7000.77	6742.31
Depreciation	32.37	398.94	423.45	432.22

(₹ in lakh)

Particulars	Asset-B2	Asset-B2 +B3		
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Opening Gross Block	1851.01	2340.58	2538.47	3793.52
Addition during 2009-14 due to Projected Additional Capitalisation	8.92	197.89	1255.05	99.71
Closing Gross Block	1859.93	2538.47	3793.52	3893.23
Average Gross Block	1855.47	2439.52	3165.99	3843.37
Rate of Depreciation	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable Value	1669.92	2195.57	2849.39	3459.04
Remaining Depreciable Value	1669.92	2187.52	2712.54	3155.01
Depreciation	8.05	128.81	167.16	202.93

(₹ in lakh)

Asset-B4 +B5			
Particulars	2011-12	2012-13	2013-14
Opening Gross Block	4305.19	4639.68	4910.92
Addition during 2009-14 due to Projected Additional Capitalisation	334.49	271.24	217.90
Closing Gross Block	4639.68	4910.92	5128.82
Average Gross Block	4472.44	4775.30	5019.87
Rate of Depreciation	5.2787%	5.2788%	5.2788%
Depreciable Value	4025.19	4297.77	4517.88
Remaining Depreciable Value	3981.07	4017.56	3985.60
Depreciation	236.09	252.08	264.99

(₹ in lakh)

Asset-C1			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Gross Block	1346.29	1407.46	1688.11
Addition during 2009-14 due to Projected Additional Capitalisation	61.17	280.65	8.09
Closing Gross Block	1407.46	1688.11	1696.20
Average Gross Block	1376.87	1547.78	1692.15
Rate of Depreciation	5.1699%	5.1512%	5.1441%
Depreciable Value	1239.18	1393.00	1522.94
Remaining Depreciable Value	1239.18	1363.36	1413.56
Depreciation	29.64	79.73	87.05



(₹ in lakh)

Asset-C2			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Gross Block	1460.66	1591.42	1706.74
Addition during 2009-14 due to Projected Additional Capitalisation	130.76	115.32	8.22
Closing Gross Block	1591.42	1706.74	1714.96
Average Gross Block	1526.04	1649.08	1710.85
Rate of Depreciation	5.4179%	5.1916%	5.1946%
Depreciable Value	1373.43	1484.17	1539.76
Remaining Depreciable Value	1373.43	1463.56	1433.54
Depreciation	20.61	85.61	88.87

(₹ in lakh)

Asset-D			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Opening Gross Block	1984.88	2182.62	2186.12
Addition during 2009-14 due to Projected Additional Capitalisation	197.74	3.50	50.08
Closing Gross Block	2182.62	2186.12	2236.20
Average Gross Block	2083.75	2184.37	2211.16
Rate of Depreciation	5.1169%	5.1265%	5.1105%
Depreciable Value	1875.37	1965.93	1990.04
Remaining Depreciable Value	1875.37	1885.60	1797.73
Depreciation	80.33	111.98	113.00

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

44. O & M Expenses allowed vide orders dated 21.7.2011 in Petition No. 336/TT/2010, 30.4.2013 in Petition No. 56/TT/2011, 17.8.2015 in Petition No. 109/TT/2012 and 28.5.2012 in Petition No. 136/TT/2011 has been considered for the purpose of tariff calculation.

45. Accordingly, the O&M Expenses claimed by the petitioner, allowed and trued up are the same, and are as follows:-



(₹ in lakh)

Asset A1	
Name of Elements	2010-11
One No. 400 kV Bay	23.08
Three No. 220 kV Bay	48.48
Total	71.56

(₹ in lakh)

Asset B1				
Name of Elements	2010-11	2011-12	2012-13	2013-14
46.656 (2.635+44.021)km, 400 kV D/C (twin) T/L line	2.58	32.71	34.57	36.53
4 No. 400 kV Bay	18.47	234.28	247.68	261.84
Total	21.04	266.99	282.25	298.37

(₹ in lakh)

Asset B2	
Name of Elements	2010-11
One No.400 kV Bay	4.62
Three No. 220 kV Bay	9.70
Total	14.31

(₹ in lakh)

Asset B2+B3			
Name of Elements	2011-12	2012-13	2013-14
Two No.400 kV Bay	117.14	123.84	130.92
4 No. 220 kV Bay	164.00	173.36	183.28
Total	281.14	297.20	314.20

(₹ in lakh)

Asset B4+B5			
Name of Elements	2011-12	2012-13	2013-14
Two No.400 kV Bay	117.14	123.84	130.92
6 No. 220 kV Bay	246.00	260.04	274.92
Total	363.14	383.88	405.84

(₹ in lakh)

Asset C1			
Name of Elements	2011-12	2012-13	2013-14
One No.400 kV Bay	24.40	61.92	65.46
3 No. 220 kV Bay	51.25	130.02	137.46
Total	75.65	191.94	202.92



(₹ in lakh)

Asset C2			
Name of Elements	2011-12	2012-13	2013-14
One No.400 kV Bay	14.64	61.92	65.46
3 No. 220 kV Bay	30.75	130.02	137.46
Total	45.39	191.94	202.92

(₹ in lakh)

Asset D			
Name of Elements	2011-12	2012-13	2013-14
One No.400 kV Bay	43.93	61.92	65.46
3 No. 220 kV Bay	92.25	130.02	137.46
Total	136.18	191.94	202.92

Interest on working capital

46. 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.

I. Maintenance Expenses

Maintenance spares have been worked out based on 15% of Operation and Maintenance expenses specified in Regulation 19.

II. O & M Expenses:

O&M expenses have been considered for one month of the allowed O&M expenses.

III. Receivables:

The receivables have been worked out on the basis of 2 months' of annual transmission charges as worked out above.



IV. Rate of interest on working capital:

As per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) 2009, rate of interest on working capital has been computed as follows:-

Particular	SBI Base Rate	BPs	Rate of Interest on Working Capital
Asset A1	7.5 %	350	11.00 %
Asset B1	7.5 %	350	11.00 %
Asset B2	7.5 %	350	11.00 %
Asset B2& B3	8.25 %	350	11.75 %
Asset B4 &B5	8.25 %	350	11.75 %
Asset C1	8.25 %	350	11.75 %
Asset C2	8.25 %	350	11.75 %
Asset D	8.25 %	350	11.75 %

47. The IWC trued up is as under:-

(₹ in lakh)

Particulars	Asset- A1		Asset B1		
	2010-11 (pro-rata)	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Maintenance Spares	25.76	37.16	40.05	42.34	44.76
O & M expenses	14.31	20.64	22.25	23.52	24.86
Receivables	88.64	283.28	295.42	307.91	311.57
Total	128.71	341.09	357.72	373.77	381.19
Interest	5.86	3.19	39.35	41.11	41.93

(₹ in lakh)

Particulars	Asset- B2		Asset B2+B3	
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Maintenance Spares	26.12	42.17	44.58	47.13
O & M expenses	14.51	23.43	24.77	26.18
Receivables	85.16	120.18	140.68	159.91
Total	125.79	185.78	210.02	233.22
Interest	1.14	21.83	24.68	27.40



(₹ in lakh)

Asset B4+B5			
Particulars	2011-12	2012-13	2013-14
Maintenance Spares	54.47	57.58	60.88
O & M expenses	30.26	31.99	33.82
Receivables	192.84	201.71	208.92
Total	277.58	291.28	303.61
Interest	32.62	34.23	35.67

(₹ in lakh)

Asset C1			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Maintenance Spares	27.25	28.79	30.44
O & M expenses	15.14	16.00	16.91
Receivables	72.51	78.41	83.42
Total	114.90	123.19	130.77
Interest	5.62	14.48	15.37

(₹ in lakh)

Asset C2			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Maintenance Spares	27.31	28.79	30.44
O & M expenses	15.17	16.00	16.91
Receivables	77.08	81.06	83.69
Total	119.56	125.85	131.04
Interest	3.50	14.79	15.40

(₹ in lakh)

Asset D			
Particulars	2011-12 (pro-rata)	2012-13	2013-14
Maintenance Spares	27.11	28.79	30.44
O & M expenses	15.06	16.00	16.91
Receivables	92.49	95.94	97.05
Total	134.66	140.73	144.40
Interest	11.92	16.54	16.97

Annual Transmission charges

48. In view of above, the annual transmission charges after truing up for the 2009-14 tariff period is as under:-



(₹ in lakh)

Particulars	Asset-A1	Asset B1			
	2010-11 (pro-rata)	2010-11	2011-12	2012-13	2013-14
Depreciation	44.12	32.37	398.94	423.45	432.22
Interest on Loan	51.47	45.22	540.94	541.17	517.46
Return on equity	48.59	42.54	526.29	559.49	579.42
Interest on Working Capital	5.86	3.19	39.35	41.11	41.93
O & M Expenses	71.56	21.04	266.99	282.25	298.37
Total	221.59	144.36	1772.52	1847.48	1869.40

(₹ in lakh)

Particulars	Asset-B2	Asset B2+B3		
	2010-11 (pro-rata)	2011-12	2012-13	2013-14
Depreciation	8.05	128.81	167.16	202.93
Interest on Loan	9.64	147.49	170.97	188.80
Return on equity	8.86	141.81	184.04	226.12
Interest on Working Capital	1.14	21.83	24.68	27.40
O & M Expenses	14.31	281.14	297.20	314.20
Total	42.00	721.08	844.05	959.45

(₹ in lakh)

Particulars	Asset-B4+B5			Asset C1		
	2011-12	2012-13	2013-14	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	236.09	252.08	264.99	29.64	79.73	87.05
Interest on Loan	265.24	262.48	251.67	36.94	94.32	95.64
Return on equity	259.99	277.59	295.33	33.33	89.97	99.55
Interest on Working Capital	32.62	34.23	35.67	5.62	4.48	15.37
O & M Expenses	363.14	383.88	405.84	75.65	191.94	202.92
Total	1157.07	1210.25	1253.51	181.18	470.44	500.53

(₹ in lakh)

Particulars	Asset-C2			Asset-D		
	2011-12 (pro-rata)	2012-13	2013-14	2011-12 (pro-rata)	2012-13	2013-14
Depreciation	20.61	85.61	88.87	80.33	111.98	113.00
Interest on Loan	23.67	98.17	94.29	98.39	128.20	119.32
Return on equity	22.12	95.86	100.65	91.26	126.98	130.09
Interest on Working Capital	3.50	14.79	15.40	11.92	16.54	16.97
O & M Expenses	45.39	191.94	202.92	136.18	191.94	202.92
Total	115.30	486.37	502.13	418.08	575.63	582.29



DETERMINATION OF ANNUAL TRANSMISSION CHARGES FOR 2014-19

49. The true-up tariff for the instant transmission system up to 2009-14 tariff period has been granted based on the actual COD of individual elements irrespective of the fact that the project as whole is completed or not. This leads to granting of multiple tariffs for the assets covered under the single project/transmission system. The Commission, vide Regulation 6 of the 2014 Tariff Regulations has brought in the concept of a single consolidated petition to be submitted by a petitioner which provide that in case all the elements of a transmission system have been declared under commercial operation prior to 1.4.2014, then a single tariff can be granted for all the assets covered under such a single project/transmission system. However, to determine a single transmission tariff for different assets after combining them, as per the 2014 Tariff Regulations, the concept of effective date of commercial operation and weighted average life has also been introduced in Regulation 27 (Depreciation) of the 2014 Tariff Regulations. The relevant portions of Regulation 6 of the 2014 Tariff Regulations are as follows:-

“6. Tariff determination

(1) Tariff in respect of a generating station may be determined for the whole of the generating station or stage or generating unit or block thereof, and tariff in respect of a transmission system may be determined for the whole of the transmission system or transmission line or sub-station or communication system forming part of transmission system:

Provided that:

(i) where all the generating units of a stage of a generating station or all elements of a transmission system have been declared under commercial operation prior to 1.4.2014, the generating company or the transmission licensee, as the case may be, shall file consolidated petition in respect of the entire generating station or transmissions system for the purpose of determination of tariff for the period 2014-15 to 2018-19:



xxx
xxx”

50. The instant petition relates to the transmission system associated with WRSS XI Scheme-VI in Western Region. The petitioner in the instant petition has claimed single tariff for 2014-19 period on consolidated capital cost of all the asset commissioned till 31.3.2014. The Commission had granted final tariff from COD to 31.3.2014 for these assets vide orders dated 21.7.2011 in Petition No. 336/TT/2010, 30.4.2013 in Petition No. 56/TT/2011, 17.8.2015 in Petition No. 109/TT/2012 and 28.5.2012 in Petition No. 136/TT/2011. The true up of tariff of these assets for 2009-14 period has been carried out separately in the preceding paras. The consolidation of assets of the project has been allowed and the tariff for 2014-19 period has been worked out based on the methodology and assumptions mentioned as under:-

a. Commission in order dated 29.2.2016 in Petition No. 181/TT/2014 approved the methodology of combining individual assets at the time of filing truing up petition along with 2014 tariff. The same methodology has been adopted in the instant case.

b. The consolidation of individual assets for single tariff has been done by adding up of the admitted capital cost as on 31.3.2016 of individual assets. The AFC for the consolidated cost has been worked out as given below.

i. **Return on Equity:** The admitted Gross Normative Equity as on



31.3.2014 of individual assets are added to arrive the Gross Equity as on 1.4.2014 for the combined assets.

ii. **Interest on Loan:** The admitted Gross Normative Loan and cumulative repayment of loan as on 31.3.2014 of individual assets are added to get the Gross Normative Loan and cumulative repayment of loan as on 1.4.2014 for the combined assets.

iii. **Depreciation:** The admitted gross capital cost and cumulative depreciation as on 31.3.2014 of individual assets are added to get the gross capital cost and cumulative depreciation as on 1.4.2014 for the combined assets. Lapsed life of the combined assets as on 1.4.2014 has been worked out by the concept of Effective COD and Weighted Average Life as provided in Regulation 27 of 2014 Tariff Regulation.

iv. **Interest on Working Capital:** Since, the normative Working capital is derived from the O&M Expenses and Receivables; it is being worked out accordingly.

v. **O&M Expenses:** The entitled O&M Expenses as per 2014 tariff regulation of individual assets are added and considered as O&M Expenses of the consolidated assets.

51. It is to be noted that, though the consolidation is being done for single tariff, the petitioner has to maintain the identity of the individual assets. In future



tariff petitions, the petitioner has to maintain and provide the details of individual assets like asset description, actual COD, cut-off date, effective COD, admitted capital cost, O&M Expenses claim etc. The petitioner has to make all the future claim of additional capital expenditure or de-capitalization for the project, along with auditor certificate by clearly mentioning the individual assets to which the claim has been made. Accordingly, the petitioner should submit the individual asset wise details in form 4, 4A, 4B, 7, 7A, 10B and 13. The admissibility of ACE claim shall be reviewed at individual asset level and the total admitted ACE of the individual asset shall be considered as the admitted ACE of the project as whole.

52. The scope of WRSS-VI includes nine assets and these nine assets are combined into a single asset and single tariff for the project as a whole has to be worked out for the 2014-19 tariff period. Thus, all the assets in the instant petition have been combined into a single asset for the purpose of single tariff for 2014-19 period. For the purpose of calculation of single tariff, the Effective COD and Weighted Average life of the project as a whole has been computed as discussed in the paragraphs pertaining to depreciation in this order.

53. The cumulative depreciation for the project as whole has been computed as shown below:-

Particulars	Details of cumulative depreciation as on 31.3.2014, as determined during true-up of 2009-14 tariff	Considered for single tariff for the project as whole as on 1.4.2014
Asset –B 1	1286.99	3288.05
Asset -B2 & B3	506.95	
Asset -B4 & B5	797.27	



Asset -C 1	196.42
Asset - C 2	195.10
Asset -D	305.31
Considered for single tariff for the project as whole as on 1.4.2014	3288.05

54. The petitioner has claimed AFC for combined assets under WRSS-VI, which have been combined together as under:-

(₹ in lakh)

Particulars (Combined Assets)	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1246.95	1261.19	1262.48	1262.48	1262.48
Interest on Loan	1238.41	1143.49	1031.78	918.42	805.11
Return on Equity	1495.00	1511.16	1512.60	1512.60	1512.60
Interest on Working Capital	174.39	175.65	175.99	176.30	176.73
O&M Expenses	1498.28	1548.00	1599.44	1652.45	1707.31
Total	5653.03	5639.49	5582.29	5522.25	5464.23

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

(₹ in lakh)

Particulars (Combined Assets)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	224.74	232.20	239.92	247.87	256.10
O & M Expenses	124.86	129.00	133.29	137.70	142.28
Receivables	942.18	939.93	930.39	920.39	910.72
Total	1291.78	1301.13	1303.60	1305.96	1309.10
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	174.39	175.65	175.99	176.30	176.73

Capital Cost

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



“(1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.”

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

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
- (b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and
- (c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”

57. The petitioner vide Auditor Certificate has claimed the capital cost of the individual assets which has been added to arrive the capital cost claimed during 2014-19 period for consolidated assets.

Asset	Cost as per FR	Claimed up to 31.3.14	ACE claimed		Completion cost
			2014-15	2015-16	
Asset-B1	14465.35	9977.81	18.32	0.00	9996.13
Asset-B2	3023.83	2355.9	195.49	0.00	2551.39
Asset-B3	2453.88	1586.25	34.41	0.00	1620.66
Asset-B4*	3072.63	2428.84	182.68	0.00	2611.52
Asset-B5	3069.75	2894.94	0.00	0.00	2894.94
Asset-C1	2671.54	1820.85	0.00	0.00	1820.85
Asset-C2	2829.24	1823.52	35.30	49.01	1907.83
Asset-D	2486.10	2276.65	34.40	0.00	2311.05
Total	34072.32	25164.76	500.60	49.01	25714.37

* Asset A1 and Asset B4 refers to same asset

58. The capital cost as on 1.4.2014 as certified by the Auditor is ₹25164.76 lakh. However, the petitioner in form 10A has claimed capital as on 1.4.2014 amounting ₹25161.85 lakh for tariff purpose. The capital cost as on 31.3.2014 of individual assets were trued up in above paragraphs. Based on the true up, the element wise capital cost (i.e. Land, Building, Transmission



line, Sub-station and PLCC) as admitted on 31.3.2014 for all assets are clubbed together and the combined cost has been considered as capital cost of the project as a whole as on 1.4.2014. Thus, ₹24531.36 lakh has been considered as the admitted capital cost of the project as on 1.4.2014 as per details as follows:-

(₹ in lakh)

Combined Assets	Trued up capital cost as on 31.3.2014						Combined cost for the three assets as on 1.4.2014
	Asset-B1	Asset-B2+B3	Asset-B4+B5	Asset C1	Asset C2	Asset D	
Freehold Land	1407.42	0.00	0.00	0.00	0.00	0.00	1407.42
Leasehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building & Other Civil Works	756.83	0.00	8.91	133.76	84.26	220.21	1203.97
Transmission Line	5354.13	0.00	0.00	0.00	0.00	0.00	5354.13
Sub-Station Equipments	2229.98	3893.23	5109.04	1534.30	1614.21	2000.58	16381.34
PLCC	113.60	0.00	10.87	28.13	16.49	15.40	184.49
Total	9861.96	3893.23	5128.82	1696.20	1714.96	2236.20	24531.36

Additional Capital Expenditure

59. Sub-clause (i) of Clause 1 and sub-clause (ix) of Clause 3 of Regulation 14 of the 2014 Tariff Regulations provides as follows:-

“(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities recognized to be payable at a future date;”



“(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;”

60. The “cut-off” date for Asset A1/B4 is 31.3.2013 and for Asset B1, B2, B3, B5, C1 and D is 31.3.2014. The “cut-off” date for Asset C2 is 31.3.2015. The asset wise additional capital expenditure (ACE) claimed as per Auditor certificate has been shown as under:-

(₹ in lakh)

Asset	Additional Capital Expenditure claimed	
	2014-15	2015-16
Asset-B1	18.32	0.00
Asset-B2	195.49	0.00
Asset-B3	34.41	0.00
Asset-B4	182.68	0.00
Asset-B5	0.00	0.00
Asset-C1	0.00	0.00
Asset-C2	35.30	49.01
Asset-D	34.40	0.00
Total	500.60	49.01

61. The petitioner has claimed ACE for Asset B1, B2, B3, B4, C2 and D. No ACE has been claimed for Asset B5 and C1. Further, the petitioner, vide affidavit dated 9.6.2017, has submitted revised Form 7 which shows that the ACE has been claimed under Regulation 14(2)(iv) of the 2014 Tariff Regulations. The



details of ACE claimed has been summarized below:-

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Regulation 14(2) (iv)	500.60	49.01	0.00	0.00	0.00

62. The petitioner vide Form 7 has made the above claim under Regulation 14 (2)(iv) of the 2014 Tariff Regulations which deals with any liability for works executed prior to the “cut-off” date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.

63. The petitioner has not submitted the Form 4A, instead provided the required information vide affidavit dated 9.6.2017 through Form 9A of the 2014 Tariff Regulation for the year 2014-15 and 2015-16. It is observed from the details provided in Form 9A that the petitioner had increased the Gross Block (i.e. fresh capitalization) even after COD for all the assets except for Asset C2 as summarised below. Therefore, the claim of ACE for 2014-15 and 2015-16 has been segregated as under:-

Particulars	(₹ in lakh)		
	2014-15		Total ACE
	ACE pertaining to discharge of liability	New capitalisation by increasing the gross block	
Asset-B1	0.00	18.32	18.32
Asset-B2	0.00	195.49	195.49
Asset-B3	0.00	34.41	34.41
Asset-B4	0.00	182.68	182.68
Asset-B5	0.00	0.00	0.00
Asset-C1	0.00	0.00	0.00
Asset-C2	35.30	0.00	35.30
Asset-D	0.00	34.40	34.40
Total	35.30	465.30	500.60



(₹ in lakh)

Particulars	2015-16		
	ACE pertaining to discharge of liability	New capitalisation by increasing the gross block	Total ACE
Asset-B1	0.00	0.00	0.00
Asset-B2	0.00	0.00	0.00
Asset-B3	0.00	0.00	0.00
Asset-B4	0.00	0.00	0.00
Asset-B5	0.00	0.00	0.00
Asset-C1	0.00	0.00	0.00
Asset-C2	49.01	0.00	49.01
Asset-D	0.00	0.00	0.00
Total	49.01	0.00	49.01

64. Accordingly, the ACE claimed for 2014-15 for the asset B1, B2, B3 B4 and D are not pertaining to the discharge of liability as claimed by the petitioner. Instead these claims are the expenditure incurred for fresh capitalisation and these fresh capitalisation are incurred after “cut-off” date. Therefore, the ACE claimed for Asset B1, B2, B3, B4 and D for the year 2014-15 amounting ₹465.30 lakh are disallowed. However, the petitioner is given the liberty to submit the details at the time of true up with proper justification and proper regulation. The admissibility shall be reviewed at the time of true up. In case of Asset C2, the entire claim for the year 2014-15 and 2015-16 are identified as the discharge of liability. Hence, the amount of ₹35.30 lakh for the year 2014-15 has been admitted under Regulation 14(1)(i) and ₹49.01 lakh has been admitted under Regulation 14(2)(iv). Therefore, the additional capitalization allowed for 2014-19 tariff period in the respective financial year is as under:-



(₹ in lakh)

Particulars	2014-15	2015-16
Additional Capital Expenditure claimed	500.60	49.01
Dis-allowed Additional capital Expenditure	465.30	0.00
Additional Capital Expenditure allowed	35.30	49.01

65. Based on the above, asset wise capital cost as on 1.4.2014 and the additional capital expenditure considered for tariff computation for the project as whole are summarised below:-

(₹ in lakh)

Asset No.	As on 1.4.2014	2014-15	2015-16	As on 31.3.2019
Asset -B 1	9861.96	0.00	0.00	9861.96
Asset -B 2 & B 3	3893.23	0.00	0.00	3893.23
Asset -B 4 & B 5	5128.82	0.00	0.00	5128.82
Asset -C 1	1696.2	0.00	0.00	1696.20
Asset - C 2	1714.96	35.30	49.01	1799.27
Asset -D	2236.2	0.00	0.00	2236.20
Total	24531.36	35.30	49.01	24615.67

66. Element wise admitted capital cost as on 1.4.2014 and the additional capital expenditure considered for tariff computation for the project as whole are summarised as below:-

(₹ in lakh)

Particulars	Admitted capital cost as on 1.4.2014	Projected additional capitalization		Admitted cost as 31.3.2019
		2014-15	2015-16	
Freehold Land	1407.42	0.00	0.00	1407.42
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other Civil Works	1203.97	2.08	0.00	1206.05
Transmission Line	5354.13	0.00	0.00	5354.13
Sub-Station Equipments	16381.34	32.85	49.01	16463.20
PLCC	184.49	0.37	0.00	184.86
Total	24531.36	35.30	49.01	24615.67



Debt:Equity Ratio

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

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

68. The petitioner has considered debt:equity ratio of 70:30 as on 31.3.2014 for the combined assets. The admitted debt:equity ratio of 70:30 after true-up for the tariff period ending 31.3.2014 has been considered as opening debt:equity ratio as on 1.4.2014. For additional capitalization, the petitioner has proposed normative debt:equity ratio of 70:30 and the same has been considered. The details of the debt:equity as on 1.4.2014 considered for the purpose of determination of tariff for the 2014-19 tariff period and as on 31.3.2019 are as follows:-

(₹ in lakh)

Particulars	Ratio	As on 1.4.2014	As on 31.3.2019
Debt	70.00	17171.96	17230.98
Equity	30.00	7359.40	7384.69
Total	100.00	24531.36	24615.67

Return on Equity (“RoE”)

69. Clause (1) & (2) of Regulation 24 and Clause (2) and (3) 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.

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(2) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.”

70. The RoE has been worked out in accordance with Regulations 24 and 25 of the 2014 Tariff Regulations. The rate of pre-tax return on equity for all the financial year during 2014-19 period has been determined by grossing up the base rate of 15.50% with effective tax rate of 20.961% (i.e. MAT rate applicable for the financial year 2013-14). This rate of pre-tax return on equity is subject to true up based on the effective tax rate of respective financial year applicable to the petitioner company.

71. Accordingly, the ROE determined is as given under:-



(₹ in lakh)					
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	7359.40	7369.99	7384.69	7384.69	7384.69
Additional Capitalization	10.59	14.70	0.00	0.00	0.00
Closing Equity	7369.99	7384.69	7384.69	7384.69	7384.69
Average Equity	7364.69	7377.34	7384.69	7384.69	7384.69
Return on Equity (Base Rate) (%)	15.50%	15.50%	15.50%	15.50%	15.50%
MAT rate for the financial year 2013-14 (%)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax) (%)	19.611%	19.611%	19.611%	19.611%	19.611%
Return on Equity (Pre-tax)	1444.29	1446.77	1448.21	1448.21	1448.21

Interest on Loan (“IOL”)

72. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations provides as under:-

“(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.”

73. In the calculations, the interest on loan has been worked out as detailed below:

- (i) It is pertinent to mention that the actual loan portfolio of individual assets as considered for the true up purpose has been added together for the balance as on 1.4.2014 is not matching with the balance



mentioned in Form 9C. The loan portfolio as submitted by the petitioner has been considered for determining WAROI. Therefore, petitioner is directed to submit the revised Form 9C by tallying the loan wise balance of individual assets as considered as part of true up purpose at the time of true up of 2014-19.

(ii) The gross amount of loan, repayment of instalments and rate of interest on actual loans as mentioned in Form 9C have been considered which is subject to true up.

(iii) The yearly repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that year.

(iv) Weighted average rate of interest on actual average loan worked out as per (i) above is applied on the normative average loan during the year to arrive at the interest on loan.

74. The details of weighted average rate of interest are placed at **Annexure-IV** and the IOL has been worked out as follows:-

(₹ in lakh)					
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative loan	17171.96	17196.67	17230.98	17230.98	17230.98
Cumulative Repayment upto previous year	3288.05	4488.48	5691.13	6895.07	8099.01
Net Loan-Opening	13883.91	12708.19	11539.85	10335.91	9131.97
Additions during the year	24.71	34.31	0.00	0.00	0.00
Repayment during the year	1200.44	1202.65	1203.94	1203.94	1203.94
Net Loan-Closing	12708.19	11539.85	10335.91	9131.97	7928.03
Average Loan	13296.05	12124.02	10937.88	9733.94	8530.00
Rate of Interest (%)	8.975%	8.977%	8.978%	8.977%	8.978%
Interest	1193.26	1088.42	981.96	873.86	765.81



Depreciation

75. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(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.

xxx

xxx

(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.

xxx

xxx

(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."



Effective Date of Commercial Operation (E-COD)

76. The Effective Date of Commercial Operation (E-COD) for the project as a whole has been worked out based on the admitted capital cost of individual assets as on 31.3.2014 and the actual/notional COD of individual assets. Accordingly, the Effective Date of Commercial Operation (E-COD) for the combined assets has been worked out as shown below:-

(₹ in lakh)

Computation of Effective COD							
Project Name	Asset No.	Actual COD	Admitted Capital Cost as on 31.3.2014	Weight of the cost	No. of days from last COD	Weighted days	Effective COD (Latest COD - Total Weighted days)
Western Region System Strengthening Scheme-VI	B 1	1.3.11	9861.96	40.20%	306	123.02	30.4.2011
	B 2& B 3	1.4.11	3893.23	15.87%	275	43.64	
	B 4& B 5	1.4.11	5128.82	20.91%	275	57.49	
	C 1	1.11.11	1696.20	6.91%	61	4.22	
	C 2	1.1.12	1714.96	6.99%	0	0.00	
	D	1.7.11	2236.20	9.12%	184	16.77	
	Total			24531.36	100.00%		245.15

Thus, the E-COD has been used to determine the lapsed life of the project as whole, which works out as 2 year as on 1.4.2014. (i.e. the number of completed years as on 1.4.2014 from E-COD).

Weighted Average Life (WAL)

77. The project as a whole has multiple elements (i.e. Land, Building, Transmission line, Substation and PLCC) and each element may have different span of life. Therefore, in the 2014 Tariff Regulations, the concept of Weighted Average Life (WAL) has been introduced which has been used as the useful life



of the project as whole. The Weighted Average Life (WAL) has been determined based on the admitted capital cost of individual elements as on 31.3.2014 and their respective life as stipulated in the 2014 Tariff Regulations. The element wise life as it was defined in Tariff Regulations prevailing at the time of actual COD of individual assets has been ignored for this purpose. The life as defined in the 2014 Tariff Regulations has been considered for determination of WAL. Accordingly, the WAL of the project as whole has been worked out as 26 years as follows:-

(₹ in lakh)

Determination of Weighted Average Life of the Project									
Admitted Capital Cost as on 1.4.2014									
Particulars	Asset B1	Asset B2 & B3	Asset B4 & B5	Asset C1	Asset C2	Asset D	Combined Cost (a)	Life as per 2014 Regulations (b)	Weight (a) x (b)
Freehold Land	1407.42	0.00	0.00	0.00	0.00	0.00	1407.42	0	0.00
Leasehold Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25	0.00
Building & Other Civil Works	756.83	0.00	8.91	133.76	84.26	220.21	1203.97	25	30099.29
Transmission Line	5354.13	0.00	0.00	0.00	0.00	0.00	5354.13	35	187394.72
Sub-Station Equipments	2229.98	3893.23	5109.04	1534.30	1614.21	2000.58	16381.34	25	409533.60
PLCC	113.60	0.00	10.87	28.13	16.49	15.40	184.49	15	2767.33
Total	9861.96	3893.23	5128.82	1696.20	1714.96	2236.20	24531.36	26	629794.94
Weighted Average life							26 Years		

Note: **Asset A1**- Tariff for Asset A1(stand alone) allowed upto 31.03.2011 and thereafter combined with Asset B 4.

Asset B 2- Tariff for Asset A1(stand alone) allowed upto 31.03.2011 and thereafter combined with Asset B 3.

78. Further, it is assumed that, the WAL of the project as whole as on 1.4.2014 as determined above is applicable prospectively (i.e. for 2014-19 tariff period onwards) and no retrospective adjustment of depreciation in previous tariff period



is required. Accordingly, the WAL has been used to determine the remaining useful life as on 31.3.2014 as 24 years.

79. The admitted gross capital cost and cumulative depreciation as on 31.3.2014 of individual assets are added to get the gross capital cost and cumulative depreciation as on 1.4.2014 for the combined assets. Lapsed life of the combined assets as on 1.4.2014 has been worked out on the basis of Effective COD and Weighted Average life as provided in Regulation 27 of 2014 Tariff Regulations. Further, to determine a single transmission tariff for the instant transmission assets, the concept of effective date of commercial operation and weighted average life under as stipulated in Regulation 27 of 2014-19 Tariff Regulations has been considered.

80. 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)				
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	24531.36	24566.66	24615.67	24615.67	24615.67
Addition during 2009-14 due to Projected Additional Capitalisation	35.30	49.01	0.00	0.00	0.00
Closing Gross Block	24566.66	24615.67	24615.67	24615.67	24615.67
Average Gross Block	24549.01	24591.16	24615.67	24615.67	24615.67
Rate of Depreciation	4.89%	4.89%	4.89%	4.89%	4.89%
Depreciable Value	20827.43	20865.37	20887.42	22154.10	20887.42
Remaining Depreciable Value	17539.38	16376.88	15196.29	15259.03	12788.42
Depreciation	1200.44	1202.65	1203.94	1203.94	1203.94



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

81. The petitioner's entitlement to O&M Expenses has been worked out for combined asset as per sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations and considered as O&M Expenses of project as a whole for the purpose of computation of tariff. The details of O&M Expenses allowed are as follows:-

	(₹ in lakh)				
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	1498.28	1548.00	1599.44	1652.45	1707.31

Interest on Working Capital (“IWC”)

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

(1) The working capital shall cover:

(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:

(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”

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.

“(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;”



83. The petitioner is entitled to claim interest on working capital as per the 2014 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:-

(i) Maintenance spares:

Maintenance spares @ 15 % of O&M Expenses specified in Regulation 28.

(ii) O & M Expenses:

O&M Expenses have been considered for one month of the O&M Expenses.

(iii) Receivables:

The receivables have been worked out on the basis of 2 months' of annual transmission charges as worked out above.

(iv) Rate of interest on working capital:

As per Clause 28 (3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, SBI Base Rate (10.00%) as on 1.4.2014 plus 350 Bps i.e. 13.50 % have been considered as the rate of interest on working capital.

(₹ in lakh)					
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	224.74	232.20	239.92	247.87	256.10
O & M expenses	124.86	129.00	133.29	137.70	142.28
Receivables	917.90	909.56	900.92	891.82	883.04
Total	1267.49	1270.76	1274.13	1277.39	1281.42
Interest	171.11	171.55	172.01	172.45	172.99



Annual Transmission Charges

84. The details of Annual Transmission Charges allowed for the Combined Assets for the 2014-19 tariff period is summarised below:-

	(₹ in lakh)				
Combined Assets	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1200.44	1202.65	1203.94	1203.94	1203.94
Interest on Loan	1193.26	1088.42	981.96	873.86	765.81
Return on Equity	1444.29	1446.77	1448.21	1448.21	1448.21
Interest on Working Capital	171.11	171.55	172.01	172.45	172.99
O & M Expenses	1498.28	1548.00	1599.44	1652.45	1707.31
Total	5507.37	5457.38	5405.55	5350.91	5298.26

Filing Fee and Publication Expenses

85. 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

86. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a) respectively of Regulation 52 of the 2014 Tariff Regulations.



Sharing of Transmission Charges

87. 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.

88. This order disposes of Petition No. 47/TT/2017.

sd/-
(Dr. M. K. Iyer)
Member

sd/-
(A.S. Bakshi)
Member

sd/-
(A.K. Singhal)
Member

sd/-
(Gireesh B. Pradhan)
Chairperson



ANNEXURE-I**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET A1)**

(₹ in lakh)

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN					
	Details of Loan	2010-11	2011-12	2012-13	2013-14
1	Bond XXVIII				
	Gross loan opening	300.00	300.00	300.00	300.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	25.00
	Net Loan-Opening	300.00	300.00	300.00	275.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	25.00	25.00
	Net Loan-Closing	300.00	300.00	275.00	250.00
	Average Loan	300.00	300.00	287.50	262.50
	Rate of Interest	9.33%	9.33%	9.33%	9.33%
	Interest	27.99	27.99	26.82	24.49
	Rep Schedule	12 annual installments from 15.12.2012			
2	Bond XXIX				
	Gross loan opening	50.00	50.00	50.00	50.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	4.17
	Net Loan-Opening	50.00	50.00	50.00	45.83
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	4.17	4.17
	Net Loan-Closing	50.00	50.00	45.83	41.67
	Average Loan	50.00	50.00	47.92	43.75
	Rate of Interest	9.20%	9.20%	9.20%	9.20%
	Interest	4.60	4.60	4.41	4.03
	Rep Schedule	12 annual installments from 12.3.2013			
3	Bond XXX				
	Gross loan opening	450.00	450.00	450.00	450.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	450.00	450.00	450.00	450.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	37.50
	Net Loan-Closing	450.00	450.00	450.00	412.50
	Average Loan	450.00	450.00	450.00	431.25



	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	39.60	39.60	39.60	37.95
	Rep Schedule	12 annual installments from 29.9.2013			
4	Bond XXXI				
	Gross loan opening	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	16.67
	Net Loan-Closing	200.00	200.00	200.00	183.33
	Average Loan	200.00	200.00	200.00	191.67
	Rate of Interest	8.90%	8.90%	8.90%	8.90%
	Interest	17.80	17.80	17.80	17.06
	Rep Schedule	12 annual installments from 25.2.2014			
5	Bond XXXIII				
	Gross loan opening	150.00	150.00	150.00	150.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	150.00	150.00	150.00	150.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	150.00	150.00	150.00	150.00
	Average Loan	150.00	150.00	150.00	150.00
	Rate of Interest	8.64%	8.64%	8.64%	8.64%
	Interest	12.96	12.96	12.96	12.96
	Rep Schedule	12 annual installments from 8.7.2014			
6	Bond XXXIV				
	Gross loan opening	308.10	350.80	358.70	358.70
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	308.10	350.80	358.70	358.70
	Additions during the year	42.70	7.90	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	350.80	358.70	358.70	358.70
	Average Loan	329.45	354.75	358.70	358.70
	Rate of Interest	8.84%	8.84%	8.84%	8.84%
	Interest	29.12	31.36	31.71	31.71
	Rep Schedule	12 annual installments from 21.10.2014			
7	Bond XXXVIII ADD CAP				
	Gross loan opening	0.00	0.00	28.05	28.05
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00



	Net Loan-Opening	0.00	0.00	28.05	28.05
	Additions during the year	0.00	28.05	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	28.05	28.05	28.05
	Average Loan	0.00	14.03	28.05	28.05
	Rate of Interest	9.25%	9.25%	9.25%	9.25%
	Interest	0.00	1.30	2.59	2.59
	Rep Schedule	Redeemable at par on 9.3.2027			
8	SBI (21.3.2012)				
	Gross loan opening	0.00	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	0.00
	Additions during the year	0.00	0.00	0.00	111.52
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00	111.52
	Average Loan	0.00	0.00	0.00	55.76
	Rate of Interest	10.29%	10.29%	10.29%	10.29%
	Interest	0.00	0.00	0.00	5.74
	Rep Schedule	22 annual installments from 31.8.2016			
9	Bond XLII ADD CAP				
	Gross loan opening	0.00	0.00	0.00	48.15
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	48.15
	Additions during the year	0.00	0.00	48.15	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	48.15	48.15
	Average Loan	0.00	0.00	24.08	48.15
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	0.00	0.00	2.12	4.24
	Rep Schedule	Redeemable at par on 13.3.2023			
10	Bond XLIII ADD CAP				
	Gross loan opening	0.00	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	0.00
	Additions during the year	0.00	0.00	0.00	3.71
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00	3.71
	Average Loan	0.00	0.00	0.00	1.86
	Rate of Interest	7.93%	7.93%	7.93%	7.93%
	Interest	0.00	0.00	0.00	0.15
	Rep Schedule	12 annual installments from 20.5.2017			



	Total Loan				
	Gross loan opening	1458.10	1500.80	1536.75	1584.90
	Cumulative Repayment upto DOC/previous year	0.00	0.00	0.00	29.17
	Net Loan-Opening	1458.10	1500.80	1536.75	1555.73
	Additions during the year	42.70	35.95	48.15	115.23
	Repayment during the year	0.00	0.00	29.17	83.33
	Net Loan-Closing	1500.80	1536.75	1555.73	1587.63
	Average Loan	1479.45	1518.78	1546.24	1571.68
	Rate of Interest	8.9272%	8.9287%	8.9258%	8.9656%
	Interest	132.07	135.61	138.01	140.91



ANNEXURE-II**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET B1)****(₹ in lakh)**

	Details of Loan	2010-11	2011-12	2012-13	2013-14
1	Bond XXXIII				
	Gross loan opening	1610.00	1610.00	1610.00	1610.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1610.00	1610.00	1610.00	1610.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	1610.00	1610.00	1610.00	1610.00
	Average Loan	1610.00	1610.00	1610.00	1610.00
	Rate of Interest	8.64%	8.64%	8.64%	8.64%
	Interest	139.10	139.10	139.10	139.10
	Rep Schedule	12 annual installments from 8.7.2014			
2	Bond XXIX				
	Gross loan opening	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	16.67
	Net Loan-Opening	200.00	200.00	200.00	183.33
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	16.67	16.67
	Net Loan-Closing	200.00	200.00	183.33	166.66
	Average Loan	200.00	200.00	191.67	175.00
	Rate of Interest	9.20%	9.20%	9.20%	9.20%
	Interest	18.40	18.40	17.63	16.10
	Rep Schedule	12 annual installments from 12.3.2013			
3	Bond XXVIII				
	Gross loan opening	500.00	500.00	500.00	500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	41.67
	Net Loan-Opening	500.00	500.00	500.00	458.33
	Additions during the year	0.00	0.00	0.00	0.00



	Repayment during the year	0.00	0.00	41.67	41.67
	Net Loan-Closing	500.00	500.00	458.33	416.66
	Average Loan	500.00	500.00	479.17	437.50
	Rate of Interest	9.33%	9.33%	9.33%	9.33%
	Interest	46.65	46.65	44.71	40.82
	Rep Schedule	12 annual installments from 15.12.2012			
4	Bond XXXI				
	Gross loan opening	1700.00	1700.00	1700.00	1700.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1700.00	1700.00	1700.00	1700.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	141.67
	Net Loan-Closing	1700.00	1700.00	1700.00	1558.33
	Average Loan	1700.00	1700.00	1700.00	1629.17
	Rate of Interest	8.90%	8.90%	8.90%	8.90%
	Interest	151.30	151.30	151.30	145.00
	Rep Schedule	12 annual installments from 25.2.2014			
5	Bond XXX				
	Gross loan opening	2000.00	2000.00	2000.00	2000.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	2000.00	2000.00	2000.00	2000.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	166.67
	Net Loan-Closing	2000.00	2000.00	2000.00	1833.33
	Average Loan	2000.00	2000.00	2000.00	1916.67
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	176.00	176.00	176.00	168.67
	Rep Schedule	12 annual installments from 29.9.2013			
6	Bond XXXIV				
	Gross loan opening	23.40	118.79	279.39	279.39
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	23.40	118.79	279.39	279.39
	Additions during the year	95.39	160.60	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	118.79	279.39	279.39	279.39
	Average Loan	71.10	199.09	279.39	279.39
	Rate of Interest	8.84%	8.84%	8.84%	8.84%
	Interest	6.28	17.60	24.70	24.70



	Rep Schedule	12 annual installments from 21.10.2014			
7	Bond XXXV ADD CAP				
	Gross loan opening	0.00	0.00	154.64	154.64
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	154.64	154.64
	Additions during the year	0.00	154.64	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	154.64	154.64	154.64
	Average Loan	0.00	77.32	154.64	154.64
	Rate of Interest	9.64%	9.64%	9.64%	9.64%
	Interest	0.00	7.45	14.91	14.91
	Rep Schedule	12 annual installments from 31.5.2015			
8	Bond XXXVIII ADD CAP				
	Gross loan opening	0.00	0.00	226.85	226.85
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	226.85	226.85
	Additions during the year	0.00	226.85	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	226.85	226.85	226.85
	Average Loan	0.00	113.43	226.85	226.85
	Rate of Interest	9.25%	9.25%	9.25%	9.25%
	Interest	0.00	10.49	20.98	20.98
	Rep Schedule	Redeemable at par on 9.3.2027			
9	SBI (21.3.2012)				
	Gross loan opening	0.00	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	0.00
	Additions during the year	0.00	0.00	0.00	18.68
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00	18.68
	Average Loan	0.00	0.00	0.00	9.34
	Rate of Interest	10.29%	10.29%	10.29%	10.29%
	Interest	0.00	0.00	0.00	0.96
	Rep Schedule	Not submitted			
10	Bond XL ADD CAP				
	Gross loan opening	0.00	0.00	0.00	225.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	225.00
	Additions during the year	0.00	0.00	225.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00



	Net Loan-Closing	0.00	0.00	225.00	225.00
	Average Loan	0.00	0.00	112.50	225.00
	Rate of Interest	9.30%	9.30%	9.30%	9.30%
	Interest	0.00	0.00	10.46	20.93
	Rep Schedule	12 annual installments from 28.6.2016			
11	Bond XLI ADD CAP				
	Gross loan opening	0.00	0.00	0.00	69.90
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	69.90
	Additions during the year	0.00	0.00	69.90	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	69.90	69.90
	Average Loan	0.00	0.00	34.95	69.90
	Rate of Interest	8.85%	8.85%	8.85%	8.85%
	Interest	0.00	0.00	3.09	6.19
	Rep Schedule	12 annual installments from 19.10.2016			
	Total Loan				
	Gross loan opening	6033.40	6128.79	6670.88	6965.78
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	58.34
	Net Loan-Opening	6033.40	6128.79	6670.88	6907.44
	Additions during the year	95.39	542.09	294.90	18.68
	Repayment during the year	0.00	0.00	58.34	366.68
	Net Loan-Closing	6128.79	6670.88	6907.44	6559.44
	Average Loan	6081.10	6399.84	6789.16	6733.44
	Rate of Interest	8.8428%	8.8596%	8.8802%	8.8862%
	Interest	537.74	567.00	602.89	598.35



ANNEXURE-III**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET B2)****(₹ in lakh)**

	Details of Loan	2010-11	2011-12	2012-13	2013-14
1	Bond XXIX				
	Gross loan opening	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	100.00	100.00	100.00	100.00
	Average Loan	100.00	100.00	100.00	100.00
	Rate of Interest	9.20%	9.20%	9.20%	9.20%
	Interest	9.20	9.20	9.20	9.20
	Rep Schedule	12 annual installments from 12.3.2013			
2	Bond XXXIII				
	Gross loan opening	417.89	424.14	462.01	462.01
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	417.89	424.14	462.01	462.01
	Additions during the year	6.25	37.87	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	424.14	462.01	462.01	462.01
	Average Loan	421.02	443.08	462.01	462.01
	Rate of Interest	8.64%	8.64%	8.64%	8.64%
	Interest	36.38	38.28	39.92	39.92
	Rep Schedule	12 annual installments from 8.7.2014			
3	Bond XXVIII				
	Gross loan opening	700.00	700.00	700.00	700.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	700.00	700.00	700.00	700.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	700.00	700.00	700.00	700.00
	Average Loan	700.00	700.00	700.00	700.00
	Rate of Interest	9.33%	9.33%	9.33%	9.33%
	Interest	65.31	65.31	65.31	65.31



	Rep Schedule	12 annual installments from 15.12.2012			
4	Bond XXX				
	Gross loan opening	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	100.00	100.00	100.00	100.00
	Average Loan	100.00	100.00	100.00	100.00
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	8.80	8.80	8.80	8.80
	Rep Schedule	12 annual installments from 29.9.2013			
5	BOND XXXVIII ADD CAP				
	Gross loan opening	0.00	0.00	78.44	78.44
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	78.44	78.44
	Additions during the year	0.00	78.44	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	78.44	78.44	78.44
	Average Loan	0.00	39.22	78.44	78.44
	Rate of Interest	9.25%	9.25%	9.25%	9.25%
	Interest	0.00	3.63	7.26	7.26
	Rep Schedule	Redeemable at par on 9.3.2027			
6	SBI (21.03.2012)				
	Gross loan opening	0.00	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	0.00
	Additions during the year	0.00	0.00	0.00	7.02
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00	7.02
	Average Loan	0.00	0.00	0.00	3.51
	Rate of Interest	10.29%	10.29%	10.29%	10.29%
	Interest	0.00	0.00	0.00	0.36
	Rep Schedule	22 annual installments from 31.8.2016			
7	XLI ADD CAP				
	Gross loan opening	0.00	0.00	0.00	201.57
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00



Net Loan-Opening	0.00	0.00	0.00	201.57
Additions during the year	0.00	0.00	201.57	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	201.57	201.57
Average Loan	0.00	0.00	100.79	201.57
Rate of Interest	8.85%	8.85%	8.85%	8.85%
Interest	0.00	0.00	8.92	17.84
Rep Schedule	Redeemable at par on 19.10.2016			
Total Loan				
Gross loan opening	1317.89	1324.14	1440.45	1642.02
Cumulative Repayment upto DOCOP/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	1317.89	1324.14	1440.45	1642.02
Additions during the year	6.25	116.31	201.57	7.02
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	1324.14	1440.45	1642.02	1649.04
Average Loan	1321.02	1382.30	1541.24	1645.53
Rate of Interest	9.0601%	9.0588%	9.0449%	9.0356%
Interest	119.69	125.22	139.40	148.68



ANNEXURE-IV**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET B2+B3)****(₹ in lakh)**

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXIII			
	Gross loan opening	628.10	678.04	678.04
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	628.10	678.04	678.04
	Additions during the year	49.94	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	678.04	678.04	678.04
	Average Loan	653.07	678.04	678.04
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	56.43	58.58	58.58
	Rep Schedule	12 Annual installments from 8.7.2014		
2	Bond XXIX			
	Gross loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	8.33
	Net Loan-Opening	100.00	100.00	91.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	8.33	8.33
	Net Loan-Closing	100.00	91.67	83.34
	Average Loan	100.00	95.84	87.51
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	9.20	8.82	8.05
	Rep Schedule	12 Annual installments from 12.3.2013		
3	Bond XXVIII			
	Gross loan opening	800.00	800.00	800.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	66.67
	Net Loan-Opening	800.00	800.00	733.33



	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	66.67	66.67
	Net Loan-Closing	800.00	733.33	666.66
	Average Loan	800.00	766.67	700.00
	Rate of Interest	9.33%	9.33%	9.33%
	Interest	74.64	71.53	65.31
	Rep Schedule	12 Annual installments from 15.12.2012		
4	XXXVIII ADD CAP			
	Gross loan opening	0.00	98.05	98.05
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	98.05	98.05
	Additions during the year	98.05	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	98.05	98.05	98.05
	Average Loan	49.03	98.05	98.05
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	4.53	9.07	9.07
	Rep Schedule	Redeemable at par on 9.3.2027		
5	Bond XXX			
	Gross loan opening	135.00	135.00	135.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	135.00	135.00	135.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	11.25
	Net Loan-Closing	135.00	135.00	123.75
	Average Loan	135.00	135.00	129.38
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	11.88	11.88	11.39
	Rep Schedule	12 Annual installments from 29.9.2013		
6	SBI (21.03.2012) ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	69.80
	Repayment during the year	0.00	0.00	0.00



	Net Loan-Closing	0.00	0.00	69.80
	Average Loan	0.00	0.00	34.90
	Rate of Interest	10.29%	10.29%	10.29%
	Interest	0.00	0.00	3.59
	Rep Schedule	22 annual installments from 31.8.2016		
7	BOND XLI ADD CAP			
	Gross loan opening	0.00	0.00	670.96
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	670.96
	Additions during the year	0.00	670.96	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	670.96	670.96
	Average Loan	0.00	335.48	670.96
	Rate of Interest	8.85%	8.85%	8.85%
	Interest	0.00	29.69	59.38
	Rep Schedule	12 annual installments from 19.10.2016		
8	BOND XLII ADD CAP			
	Gross loan opening	0.00	0.00	207.57
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	207.57
	Additions during the year	0.00	207.57	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	207.57	207.57
	Average Loan	0.00	103.79	207.57
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	0.00	9.13	18.27
	Rep Schedule	Redeemable at par on 13.3.2023		
	Total Loan			
	Gross loan opening	1663.10	1811.09	2689.62
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	75.00
	Net Loan-Opening	1663.10	1811.09	2614.62
	Additions during the year	147.99	878.53	69.80
	Repayment during the year	0.00	75.00	86.25
	Net Loan-Closing	1811.09	2614.62	2598.17
	Average Loan	1737.10	2212.86	2606.40
	Rate of Interest	9.0197%	8.5667%	8.2631%
	Interest	156.68	189.57	215.37



ANNEXURE-V**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET B4+B5)****(₹ in lakh)**

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXIII			
	Gross loan opening	321.87	321.87	321.87
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	321.87	321.87	321.87
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	321.87	321.87	321.87
	Average Loan	321.87	321.87	321.87
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	27.81	27.81	27.81
	Rep Schedule	12 Annual installments from 8.7.2014.		
2	Bond XXIX			
	Gross loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	8.33
	Net Loan-Opening	100.00	100.00	91.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	8.33	8.33
	Net Loan-Closing	100.00	91.67	83.34
	Average Loan	100.00	95.84	87.51
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	9.20	8.82	8.05
	Rep Schedule	12 Annual installments from 12.3.2013		
3	Bond XXVIII			
	Gross loan opening	600.00	600.00	600.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	50.00
	Net Loan-Opening	600.00	600.00	550.00



	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	50.00	50.00
	Net Loan-Closing	600.00	550.00	500.00
	Average Loan	600.00	575.00	525.00
	Rate of Interest	9.33%	9.33%	9.33%
	Interest	55.98	53.65	48.98
	Rep Schedule	12 Annual Installments from 15.12.2012		
4	Bond XXXIV			
	Gross loan opening	857.13	865.03	865.03
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	857.13	865.03	865.03
	Additions during the year	7.90	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	865.03	865.03	865.03
	Average Loan	861.08	865.03	865.03
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	76.12	76.47	76.47
	Rep Schedule	12 Annual installments from 21.10.2014		
5	Bond XXX			
	Gross loan opening	800.00	800.00	800.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	800.00	800.00	800.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	66.67
	Net Loan-Closing	800.00	800.00	733.33
	Average Loan	800.00	800.00	766.67
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	70.40	70.40	67.47
	Rep Schedule	12 Annual installments from 29.9.2013		
6	Bond XXXI			
	Gross loan opening	417.00	417.00	417.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	417.00	417.00	417.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	34.75



	Net Loan-Closing	417.00	417.00	382.25
	Average Loan	417.00	417.00	399.63
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	37.11	37.11	35.57
	Rep Schedule	12 Annual Installments from 25.2.2014		
7	XXXVIII ADD CAP			
	Gross loan opening	0.00	228.75	228.75
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	228.75	228.75
	Additions during the year	228.75	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	228.75	228.75	228.75
	Average Loan	114.38	228.75	228.75
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	10.58	21.16	21.16
	Rep Schedule	Redeemable at par on 9.3.2027		
8	SBI (21.3.2012) ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	111.52
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	111.52
	Average Loan	0.00	0.00	55.76
	Rate of Interest	10.29%	10.29%	10.29%
	Interest	0.00	0.00	5.74
	Rep Schedule	22 annual installments from 31.8.2016		
9	XLII ADD CAP			
	Gross loan opening	0.00	0.00	189.87
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	189.87
	Additions during the year	0.00	189.87	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	189.87	189.87
	Average Loan	0.00	94.94	189.87
	Rate of Interest	8.80%	8.80%	8.80%



	Interest	0.00	8.35	16.71
	Rep Schedule	Redeemable at par on 13.3.2023		
10	XLIII ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	92.46
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	92.46
	Average Loan	0.00	0.00	46.23
	Rate of Interest	7.93%	7.93%	7.93%
	Interest	0.00	0.00	3.67
	Rep Schedule	12 annual installments from 20.5.2017		
	Total Loan			
	Gross loan opening	3096.00	3332.65	3522.52
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	58.33
	Net Loan-Opening	3096.00	3332.65	3464.19
	Additions during the year	236.65	189.87	203.98
	Repayment during the year	0.00	58.33	159.75
	Net Loan-Closing	3332.65	3464.19	3508.42
	Average Loan	3214.33	3398.42	3486.31
	Rate of Interest	8.9351%	8.9385%	8.8331%
	Interest	287.20	303.77	307.95



ANNEXURE-VI**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET C1)**

(₹ in lakh)

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXIV			
	Gross loan opening	19.00	19.00	19.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	19.00	19.00	19.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	19.00	19.00	19.00
	Average Loan	19.00	19.00	19.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	1.68	1.68	1.68
	Rep Schedule	12 annual installments from 21.10.2014		
2	Bond XXXI			
	Gross loan opening	23.00	23.00	23.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	23.00	23.00	23.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	1.92
	Net Loan-Closing	23.00	23.00	21.08
	Average Loan	23.00	23.00	22.04
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	2.05	2.05	1.96
	Rep Schedule	12 annual installments from 25.2.2014		
3	Bond XXX			
	Gross loan opening	268.20	268.20	268.20
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	268.20	268.20	268.20
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	22.35
	Net Loan-Closing	268.20	268.20	245.85
	Average Loan	268.20	268.20	257.03
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	23.60	23.60	22.62
	Rep Schedule	12 annual installments from 29.9.2013		



4	Bond XXXV			
	Gross loan opening	572.71	573.69	625.75
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	572.71	573.69	625.75
	Additions during the year	0.98	52.06	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	573.69	625.75	625.75
	Average Loan	573.20	599.72	625.75
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	55.26	57.81	60.32
	Rep Schedule	12 annual installments from 31.5.2015		
5	Bond XXXVIII ADD CAP			
	Gross loan opening	0.00	41.84	41.84
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	41.84	41.84
	Additions during the year	41.84	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	41.84	41.84	41.84
	Average Loan	20.92	41.84	41.84
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	1.94	3.87	3.87
	Rep Schedule	Redeemable at par on 9.3.2027		
6	Bond XLII ADD CAP			
	Gross loan opening	0.00	0.00	187.76
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	187.76
	Additions during the year	0.00	187.76	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	187.76	187.76
	Average Loan	0.00	93.88	187.76
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	0.00	8.26	16.52
	Rep Schedule	Redeemable at par on 13.3.2023		
7	Bond XLIII ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	5.66
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	5.66



Average Loan	0.00	0.00	2.83
Rate of Interest	7.93%	7.93%	7.93%
Interest	0.00	0.00	0.22
Rep Schedule	Redeemable at par on 20.5.2017		
Total Loan			
Gross loan opening	882.91	925.73	1165.55
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	882.91	925.73	1165.55
Additions during the year	42.82	239.82	5.66
Repayment during the year	0.00	0.00	24.27
Net Loan-Closing	925.73	1165.55	1146.94
Average Loan	904.32	1045.64	1156.25
Rate of Interest	9.3462%	9.3027%	9.2713%
Interest	84.52	97.27	107.20



ANNEXURE-VII**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET C2)****(₹ in lakh)**

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXIV			
	Gross loan opening	16.45	16.45	16.45
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	16.45	16.45	16.45
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	16.45	16.45	16.45
	Average Loan	16.45	16.45	16.45
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	1.45	1.45	1.45
	Rep Schedule	12 annual installments from 21.10.2014		
2	Bond XXXIII			
	Gross loan opening	690.10	690.10	690.10
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	690.10	690.10	690.10
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	690.10	690.10	690.10
	Average Loan	690.10	690.10	690.10
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	59.62	59.62	59.62
	Rep Schedule	12 annual installments from 8.7.2014		
3	Bond XXXV			
	Gross loan opening	333.78	333.78	396.22
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	333.78	333.78	396.22
	Additions during the year	0.00	62.44	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	333.78	396.22	396.22
	Average Loan	333.78	365.00	396.22
	Rate of Interest	9.64%	9.64%	9.64%



	Interest	32.18	35.19	38.20
	Rep Schedule	12 annual installments from 31.5.2015		
4	Bond XXXVIII ADD CAP			
	Gross loan opening	0.00	91.53	91.53
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	91.53	91.53
	Additions during the year	91.53	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	91.53	91.53	91.53
	Average Loan	45.77	91.53	91.53
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	4.23	8.47	8.47
	Rep Schedule	Redeemable at par on 9.3.2027		
5	Bond XLII ADD CAP			
	Gross loan opening	0.00	0.00	72.35
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	72.35
	Additions during the year	0.00	72.35	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	72.35	72.35
	Average Loan	0.00	36.18	72.35
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	0.00	3.18	6.37
	Rep Schedule	Redeemable at par on 13.3.2023		
6	Bond XLIII ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	5.75
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	5.75
	Average Loan	0.00	0.00	2.88
	Rate of Interest	7.93%	7.93%	7.93%
	Interest	0.00	0.00	0.23
	Rep Schedule	12 annual installments from 20.5.2017		
	Total Loan			
	Gross loan opening	1040.33	1131.86	1266.65
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00



Net Loan-Opening	1040.33	1131.86	1266.65
Additions during the year	91.53	134.79	5.75
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	1131.86	1266.65	1272.40
Average Loan	1086.10	1199.26	1269.53
Rate of Interest	8.9761%	8.9985%	9.0062%
Interest	97.49	107.91	114.34



ANNEXURE-VIII**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2009-14****(ASSET D)****(₹ in lakh)**

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXIV			
	Gross loan opening	20.13	20.13	20.13
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	20.13	20.13	20.13
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	20.13	20.13	20.13
	Average Loan	20.13	20.13	20.13
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	1.78	1.78	1.78
	Rep Schedule	12 Annual installments from 21.10.2014		
2	Bond XXXV			
	Gross loan opening	2.30	2.30	2.30
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	2.30	2.30	2.30
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2.30	2.30	2.30
	Average Loan	2.30	2.30	2.30
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	0.22	0.22	0.22
	Rep Schedule	12 Annual installments from 31.5.2015		
3	Bond XXIX			
	Gross loan opening	131.00	131.00	131.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	10.92
	Net Loan-Opening	131.00	131.00	120.08
	Additions during the year	0.00	0.00	0.00



	Repayment during the year	0.00	10.92	10.92
	Net Loan-Closing	131.00	120.08	109.17
	Average Loan	131.00	125.54	114.63
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	12.05	11.55	10.55
	Rep Schedule	12 Annual installments from 12.3.2013		
4	Bond XXVIII			
	Gross loan opening	950.00	950.00	950.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	79.17
	Net Loan-Opening	950.00	950.00	870.83
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	79.17	79.17
	Net Loan-Closing	950.00	870.83	791.67
	Average Loan	950.00	910.42	831.25
	Rate of Interest	9.33%	9.33%	9.33%
	Interest	88.64	84.94	77.56
	Rep Schedule	12 Annual installments from 15.12.2012		
5	Bond XXXVIII ADD CAP			
	Gross loan opening	0.00	138.42	138.42
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	138.42	138.42
	Additions during the year	138.42	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	138.42	138.42	138.42
	Average Loan	69.21	138.42	138.42
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	6.40	12.80	12.80
	Rep Schedule	Redeemable at par on 9.3.2027		
6	Bond XXX			
	Gross loan opening	278.80	278.80	278.80
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	278.80	278.80	278.80
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	23.23
	Net Loan-Closing	278.80	278.80	255.57



	Average Loan	278.80	278.80	267.18
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	24.53	24.53	23.51
	Rep Schedule	12 Annual installments from 29.9.2013		
7	Bond XLII ADD CAP			
	Gross loan opening	0.00	0.00	2.45
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	2.45
	Additions during the year	0.00	2.45	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	2.45	2.45
	Average Loan	0.00	1.23	2.45
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	0.00	0.11	0.22
	Rep Schedule	Redeemable at par on 13.3.2023		
8	Bond XLIII ADD CAP			
	Gross loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00
	Additions during the year	0.00	0.00	33.60
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	33.60
	Average Loan	0.00	0.00	16.80
	Rate of Interest	7.93%	7.93%	7.93%
	Interest	0.00	0.00	1.33
	Rep Schedule	Redeemable at par on 20.5.2017		
	Total Loan			
	Gross loan opening	1382.23	1520.65	1523.10
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	90.08
	Net Loan-Opening	1382.23	1520.65	1433.02
	Additions during the year	138.42	2.45	33.60
	Repayment during the year	0.00	90.08	113.32
	Net Loan-Closing	1520.65	1433.02	1353.30
	Average Loan	1451.44	1476.83	1393.16
	Weighted Average Rate of Interest	9.2063%	9.2048%	9.1853%
	Interest	133.62	135.94	127.97



ANNEXURE-IX**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
FOR TARIFF PERIOD 2014-19****(Combined Assets)**

		(₹ in lakh)				
	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXVIII					
	Gross loan opening	2850.00	2850.00	2850.00	2850.00	2850.00
	Cumulative Repayment upto DOCO/previous year	475.00	712.50	950.00	1187.50	1425.00
	Net Loan-Opening	2375.00	2137.50	1900.00	1662.50	1425.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	237.50	237.50	237.50	237.50	237.50
	Net Loan-Closing	2137.50	1900.00	1662.50	1425.00	1187.50
	Average Loan	2256.25	2018.75	1781.25	1543.75	1306.25
	Rate of Interest	9.33%	9.33%	9.33%	9.33%	9.33%
	Interest	210.51	188.35	166.19	144.03	121.87
	Rep Schedule	12 annual installments from 15.12.2012				
2	Bond XXIX					
	Gross loan opening	531.00	531.00	531.00	531.00	531.00
	Cumulative Repayment upto DOCO/previous year	88.50	132.75	177.00	221.25	265.50
	Net Loan-Opening	442.50	398.25	354.00	309.75	265.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	44.25	44.25	44.25	44.25	44.25
	Net Loan-Closing	398.25	354.00	309.75	265.50	221.25
	Average Loan	420.38	376.13	331.88	287.63	243.38
	Rate of Interest	9.20%	9.20%	9.20%	9.20%	9.20%
	Interest	38.67	34.60	30.53	26.46	22.39
	Rep Schedule	12 annual installments from 12.3.2013				
3	Bond XXX					
	Gross loan opening	3482.00	3482.00	3482.00	3482.00	3482.00
	Cumulative Repayment upto DOCO/previous year	290.17	580.34	870.51	1160.68	1450.85
	Net Loan-Opening	3191.83	2901.66	2611.49	2321.32	2031.15
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	290.17	290.17	290.17	290.17	290.17



	Net Loan-Closing	2901.66	2611.49	2321.32	2031.15	1740.98
	Average Loan	3046.75	2756.58	2466.41	2176.24	1886.07
	Rate of Interest	8.80%	8.80%	8.80%	8.80%	8.80%
	Interest	268.11	242.58	217.04	191.51	165.97
	Rep Schedule	12 annual installments from 29.9.2013				
4	Bond XXXI					
	Gross loan opening	2140.00	2140.00	2140.00	2140.00	2140.00
	Cumulative Repayment upto DOCO/previous year	178.33	356.66	534.99	713.32	891.65
	Net Loan-Opening	1961.67	1783.34	1605.01	1426.68	1248.35
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	178.33	178.33	178.33	178.33	178.33
	Net Loan-Closing	1783.34	1605.01	1426.68	1248.35	1070.02
	Average Loan	1872.51	1694.18	1515.85	1337.52	1159.19
	Rate of Interest	8.90%	8.90%	8.90%	8.90%	8.90%
	Interest	166.65	150.78	134.91	119.04	103.17
	Rep Schedule	12 annual installments from 25.2.2014				
5	Bond SBI (21.03.2012)					
	Gross loan opening	200.00	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	18.18	36.36
	Net Loan-Opening	200.00	200.00	200.00	181.82	163.64
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	18.18	18.18	18.18
	Net Loan-Closing	200.00	200.00	181.82	163.64	145.46
	Average Loan	200.00	200.00	190.91	172.73	154.55
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	20.50	20.50	19.57	17.70	15.84
	Rep Schedule	22 annual installments from 31.8.2016				
6	Bond XL					
	Gross loan opening	225.00	225.00	225.00	225.00	225.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	18.75	37.50
	Net Loan-Opening	225.00	225.00	225.00	206.25	187.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	18.75	18.75	18.75
	Net Loan-Closing	225.00	225.00	206.25	187.50	168.75
	Average Loan	225.00	225.00	215.63	196.88	178.13
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	20.93	20.93	20.05	18.31	16.57



	Rep Schedule	12 annual installments from 28.6.2016				
7	Bond XLI					
	Gross loan opening	746.29	746.29	746.29	746.29	746.29
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	62.19	124.38
	Net Loan-Opening	746.29	746.29	746.29	684.10	621.91
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	62.19	62.19	62.19
	Net Loan-Closing	746.29	746.29	684.10	621.91	559.72
	Average Loan	746.29	746.29	715.20	653.01	590.82
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	66.05	66.05	63.29	57.79	52.29
	Rep Schedule	12 annual installments from 19.10.2016				
8	Bond XXXIV					
	Gross loan opening	1200.00	1200.00	1200.00	1200.00	1200.00
	Cumulative Repayment upto DOCO/previous year	0.00	100.00	200.00	300.00	400.00
	Net Loan-Opening	1200.00	1100.00	1000.00	900.00	800.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	100.00	100.00	100.00	100.00	100.00
	Net Loan-Closing	1100.00	1000.00	900.00	800.00	700.00
	Average Loan	1150.00	1050.00	950.00	850.00	750.00
	Rate of Interest	8.84%	8.84%	8.84%	8.84%	8.84%
	Interest	101.66	92.82	83.98	75.14	66.30
	Rep Schedule	12 annual installments from 21.10.2014				
9	Bond XXXIII					
	Gross loan opening	3300.01	3300.01	3300.01	3300.01	3300.01
	Cumulative Repayment upto DOCO/previous year	0.00	275.00	550.00	825.00	1100.00
	Net Loan-Opening	3300.01	3025.01	2750.01	2475.01	2200.01
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	275.00	275.00	275.00	275.00	275.00
	Net Loan-Closing	3025.01	2750.01	2475.01	2200.01	1925.01
	Average Loan	3162.51	2887.51	2612.51	2337.51	2062.51
	Rate of Interest	8.64%	8.64%	8.64%	8.64%	8.64%
	Interest	273.24	249.48	225.72	201.96	178.20
	Rep Schedule	12 annual installments from 8.7.2014				
10	Bond XXXV					
	Gross loan opening	1178.91	1178.91	1178.91	1178.91	1178.91
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	98.24	196.48	294.72
	Net Loan-Opening	1178.91	1178.91	1080.67	982.43	884.19



	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	98.24	98.24	98.24	98.24
	Net Loan-Closing	1178.91	1080.67	982.43	884.19	785.95
	Average Loan	1178.91	1129.79	1031.55	933.31	835.07
	Rate of Interest	9.64%	9.64%	9.64%	9.64%	9.64%
	Interest	113.65	108.91	99.44	89.97	80.50
	Rep Schedule	12 annual installments from 31.5.2015				
11	Bond XXXVIII					
	Gross loan opening	825.44	825.44	825.44	825.44	825.44
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	825.44	825.44	825.44	825.44	825.44
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	825.44	825.44	825.44	825.44	825.44
	Average Loan	825.44	825.44	825.44	825.44	825.44
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	76.35	76.35	76.35	76.35	76.35
	Rep Schedule	Redeemable at par on 9.3.2027				
12	Bond XLII					
	Gross loan opening	660.00	660.00	660.00	660.00	660.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	660.00	660.00	660.00	660.00	660.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	660.00	660.00	660.00	660.00	660.00
	Average Loan	660.00	660.00	660.00	660.00	660.00
	Rate of Interest	8.80%	8.80%	8.80%	8.80%	8.80%
	Interest	58.08	58.08	58.08	58.08	58.08
	Rep Schedule	Redeemable at par on 13.3.2023				
13	Bond XLIII					
	Gross loan opening	138.93	138.93	138.93	138.93	138.93
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	11.58
	Net Loan-Opening	138.93	138.93	138.93	138.93	127.35
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	11.58	11.58
	Net Loan-Closing	138.93	138.93	138.93	127.35	115.77
	Average Loan	138.93	138.93	138.93	133.14	121.56
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	11.02	11.02	11.02	10.56	9.64
	Rep Schedule	12 annual installments from 20.5.2017				



	Total Loan					
	Gross loan opening	17477.58	17477.58	17477.58	17477.58	17477.58
	Cumulative Repayment upto DOCO/previous year	1032.00	2157.25	3380.74	4703.35	6037.54
	Net Loan-Opening	16445.58	15320.33	14096.84	12774.23	11440.04
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	1125.25	1223.49	1322.61	1334.19	1334.19
	Net Loan-Closing	15320.33	14096.84	12774.23	11440.04	10105.85
	Average Loan	15882.96	14708.59	13435.54	12107.14	10772.95
	Rate of Interest	8.9745%	8.9774%	8.9776%	8.9774%	8.9778%
	Interest	1425.42	1320.45	1206.19	1086.91	967.17

