

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 104/TT/2012

Coram:

Shri V.S. Verma, Member

Shri M. Deena Dayalan, Member

Date of Hearing: 04.07.2013

Date of Order: 06.02.2014

In the matter of

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2009 of transmission tariff for combined assets (i) 400 kV D/C Mundra- Bachchau (Triple Snowbird) Transmission line along with associated Bays at Bachchau Substation (Extension) and (ii) 400 kV D/C Bachchau- Ranchodpura TL with associated bays at Bachchau and Ranchodpura Sub-station and (iii) 400 kV D/C Mundra- Limbdi TL (Triple Snowbird) with associated bays at Limbdi Sub-station, under associated transmission system for Mundra (4000 MW) UMPP for the period from date of commercial operation to 31.3.2014.

And

In the matter of:

Power Grid Corporation of India Limited
"Saudamani", Plot No.2,
Sector-29, Gurgaon -122 001.

...Petitioner

Vs

1. Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad, 4th floor
Andehri (East), Mumbai-400 052
2. Gujarat Urja Vikas Nigam Ltd.,
Sardar Patel Vidyut Bhawan
Race Course Road, Vadodara-390 007



3. Punjab State Electricity Board
220 kV Sub-station, Ablawal
Patiala-147 001
 4. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula (Haryana)-134 109
 5. Rajasthan Power Procurement Centre
Vidyut Bhawan, Janpath, Jaipur
 6. Ajmer Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.
 7. Jodhpur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.
 8. Jaipur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.
 9. Coastal Gujrat Power Limited,
Tata Power Backby Receiving Station
148, Lt.Gen J Bhonsle Marg
Nariman Point, Mumbai -400 021
-**Respondents**

For Petitioner: Shri M. M. Mondal, PGCIL

For Respondent: Shri Padamjit Singh, PSPCL
Shri T.P.S. Bawa, PSPCL

ORDER

This petition has been filed by Power Grid Corporation of India Limited for determination of transmission tariff for the combined assets, (i) 400 kV D/C Mundra- Bachchau (Triple Snowbird) Transmission line along with associated Bays at Bachchau Sub-station (Extension) (ii) 400 kV D/C Bachchau-Ranchodpura TL with associated bays at Bachchau and Ranchodpura Sub-



station and (iii) 400 kV D/C Mundra-Limbdi TL (Triple Snowbird) with associated bays at Limbdi Sub-station, (hereinafter referred to “as the transmission asset”) under associated transmission system for Mundra (4000 MW) UMPP from date/notional date of commercial operation to 31.3.2014 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as “the 2009 Tariff Regulations”).

2. The investment approval for the Associated Transmission System (ATS) for Mundra (4000 MW) UMPP was accorded by Board of Directors of POWERGRID vide their letter dated 15.10.2008 at an estimated cost of ₹ 482412 lakh including IDC of ₹ 44686 lakh, Based on 1st Quarter 2008 Price Level.

3. The scope of work covered under the project broadly includes construction of following transmission lines and Sub-Stations:-

Part (A) : Transmission System of Mundra (4000 MW) UMPP

Transmission Lines

- | | |
|---|---------|
| (i) Mundra- Limbdi 400kV D/C (Triple snowbird) | :301 km |
| (ii) Mundra- Bachchau-Ranchodpura 400 kV D/C(Triple snowbird) | :388 km |
| (iii) Mundra- Jetpur 400kV D/C (Triple snowbird) | :328 km |



Part (B) : Regional System Strengthening in Western Region for Mundra

UMPP

Transmission Lines

- (i) Gandhar-Navsari 400kV D/C :134 km
- (ii) Navsari-Mumbai (New location) 400 kV D/C : 204 km
- (iii) LILO of both circuits of Kawas-Navsari 220 kV D/C at Navsari: 50 km
- (iv) Wardha-Aurangabad 400kV D/C (quad) along with 40% Fixed Series Compensation with provision to upgrade the line to 1200kV S/C at a later date : 400 km
- (v) Aurangabad-Aurangabad (MSTCL) 400kV D/C (quad) line : 30 km

Sub-stations

- (i) Establishment of New 400/220 kV, 2 x 315 MVA Sub-station at Bachchau
- (ii) Establishment of new 400/220 kV, 2x315 MVA GIS Sub-station at Navsari
- (iii) Establishment of new 400 kV GIS switching station at Mumbai (New location)
- (iv) Establishment of 765/400 kV, 3x1500 MVA Sub-station at Wardha
- (v) 765kV line bays for operation of Seoni-Wardha 2xS/C lines at 765 kV level.
- (vi) Establishment of 400 kV, 2X315 MVA Sub-station at Aurangabad.



4. At the time of filing of this petition, the petitioner had claimed tariff in respect of the following combinations of assets:-

(a) **Asset-1:** 400 kV D/C Bachchau-Ranchodpura TL with associated bays at Bachchau and Ranchodpura Sub-station (Anticipated date of commercial operation 1.1.2012)

(b) **Asset-2:** 400 kV D/C Mundra- Limbdi TL (Triple Snowbird) with associated bays at Limbdi Sub-station (Anticipated date of commercial operation 1.1.2012)

(c) **Asset-3:** 400 kV D/C Mundra-Bachchau (Triple Snowbird) Transmission line along with associated Bays at Bachchau Sub-station (Extension)(Anticipated date of commercial operation 1.6.2011) (Covered in Petition No. 105/2011)

5. Subsequently, the petitioner, vide affidavit dated 27.7.2012, submitted that Asset-2 of the petition has actually been commissioned in two parts as under: -

(a) Part of 400 kV D/C Mundra- Limbdi line along with associated bays has been commissioned on 1.12.2011 and

(b) Remaining part i.e. 400 kV D/C Mundra - Surajbari has been commissioned on 1.3.2012

6. Accordingly, clubbing and nomenclature of the assets have been revised as per their dates of commercial operation. Details of assets along with their actual/notional dates of commercial operation are given overleaf:-



Assets	Name of the Asset	Actual / Notional date of commercial operation
Combined Asset-I	Asset-1 400kV D/C Mundra- Bachchau TL(date of commercial operation 1.10.2011) along with associated bays	1.10.2011
	Asset-2 400 kV D/C Bachchau – Ranchoddapura TL (date of commercial operation :1.10.2011) and	1.10.2011
	Asset-3 Part of 400 kV D/C Mundra – Limbdi (from tapping point at Surajbadi to Limbdi) line along with associated bays	1.12.2011
		(1.12.2011)
Combined Asset-II	Asset-1 :400kV D/C Mundra- Bachchau TL(date of commercial operation 1.10.2011) along with associated bays	1.10.2011
	Asset-2 :400 kV D/C Bachchau – Ranchoddapura TL (date of commercial operation : 1.10.2011) and	1.10.2011
	Asset-3 :Part of 400 kV D/C Mundra – Limbdi (from tapping point at Surajbadi to Limbdi) line along with associated bays and	1.12.2011
	Asset-4* :400 kV D/C Mundra – Surajbari (balance portion) TL.	1.3.2012
		(1.3.2012)

*Part of Asset-2 (original) commissioned on 1.3.2012 has been named as Asset-4.

7. In this order, tariff is being sanctioned as under:-

(a) Tariff for Asset-1 and Asset-2 (Single Assets) is applicable from the date of commercial operation (1.10.2011) to 30.11.2011.

(b) Tariff for **Combined Asset-I**: Asset-1, 2 and 3 (Notional date of commercial operation: 1.12.2011) has been computed for the year 2011-2012 (Pro-Rata) which would be applicable for three months (December to February, 2012).

(c) Tariff for **Combined Asset-II**: Combined Asset-I and Asset-4 (Notional date of commercial operation 1.3.2012) has been computed



for the 2009-14 period and which would be applicable for the period 1.3.2012 to 31.3.2014.

8. It is also significant that combined Asset-I for which tariff is being awarded in this order includes, Asset-1 covered under Petition No. 105/2011 for which tariff was granted from 1.10.2011 to 31.3.2014. Accordingly, the tariff being awarded through this order in respect of Combined Asset -I will supersede the tariff approved for the Asset-1 covered under Petition No. 105/2011 for 2009-2014 period with effect from 1.12.2011.

9. Details of the transmission charges claimed by the petitioner in respect of Combined Asset-I and Combined Asset-II are as under:-

(₹ in lakh)

Combined Assets-I			
	2011-12 (Pro-rata)	2012-13	2013-14
Depreciation	1568.96	4917.02	5058.49
Interest on Loan	1812.64	5402.14	5123.25
Return on equity	1558.01	4881.89	5021.33
Interest on Working Capital	112.59	347.79	350.34
O & M Expenses	290.43	921.07	973.52
Total	5342.63	16469.91	16526.93

(₹ in lakh)

Combined Assets-II			
	2011-12 (Pro-rata)	2012-13	2013-14
Depreciation	478.11	5905.76	6077.68
Interest on Loan	552.65	6546.77	6213.09
Return on equity	474.79	5863.95	6033.62
Interest on Working Capital	33.90	414.40	417.33
O & M Expenses	79.82	1012.60	1070.23
Total	1619.27	19743.48	19811.95

10. The details submitted by the petitioner in support of its claim for interest on working capital for combined Asset-I and combined Asset-II are given hereunder:-

(₹ in lakh)

Combined Assets-I			
	2011-12 (Pro-rata)	2012-13	2013-14
Maintenance Spares	130.69	138.16	146.03
O & M expenses	72.61	76.76	81.13
Receivables	2671.32	2744.99	2754.49
Total	2874.62	2959.91	2981.65
Interest	112.59	347.79	350.34
Rate of Interest	11.75%	11.75%	11.75%

(₹ in lakh)

Combined Assets-II			
	2011-12 (Pro-rata)	2012-13	2013-14
Maintenance Spares	143.68	151.89	160.53
O & M expenses	79.82	84.38	89.19
Receivables	3238.54	3290.58	3301.99
Total	3462.04	3526.85	3551.71
Interest	33.90	414.40	417.33
Rate of Interest	11.75%	11.75%	11.75%

11. 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. Replies have been filed by Punjab State Power Corporation Ltd.(PSPCL), Respondent No. 3, vide affidavit dated 3.7.2012, Ajmer Vidyut Vitran Nigam Ltd (AVVNL), Respondent No. 6, and Jaipur Vidyut Vitran Nigam Ltd (JVVNL), Respondent No.8, vide affidavits dated 12.10.2011. The petitioner has filed separate rejoinders to the replies of JVVNL, and AVVNL, vide affidavits dated 20.3.2013. Further, the petitioner



has filed separate rejoinders to the replies filed by PSPCL vide affidavits dated 20.3.2013 and 1.4.2013.

12. As the replies were filed prior to the actual commissioning of the assets, the respondents had sought the actual dates of commissioning. This has since been confirmed by the petitioner. Besides, the respondents had pointed out some variations in the figures. These have also been clarified by the petitioner. In addition to the above, gist of the submissions by the three answering respondents is as under:-

- (a) Sharing of transmission charges must be in accordance with the Sharing of Inter-State Transmission Charges and Losses Regulations.
- (b) Initial spares must be as per the 2009 Tariff Regulations.
- (c) O&M charges must be as per the 2009 Tariff Regulations.

13. Submissions by the respondents are being addressed in the respective paragraphs herein below.

14. Having heard the representatives of the parties and perused the material on record, we proceed to dispose of the petition.

Capital cost

15. As regards the capital cost, Regulation 7 (1) of the 2009 Tariff Regulations provides as under:-

“The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan – (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as



normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the fund deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check.”

16. The petitioner has claimed capital cost as on date of commercial operation and estimated additional capital expenditure projected to be incurred for the assets covered in the petition, vide Management Certificate dated 29.6.2012, as per details given hereunder:-

(₹ in lakh)

Assets	Capital Cost upto 30.09.11	Capital Cost from 1.10.11-30.11.11	Capital Cost from 1.12.11-29.2.12	Capital Cost from 1.3.12-31.3.12	Projected expenditure 2012-13	Projected Expenditure 2013-14	Total Estimated Expenditure
Asset-1 1.10.11	15383.97	97.77	161.46	212.04	605.88	0.00	16461.13
Asset-2 1.10.11	38974.93	308.15	377.54	708.71	1559.91	1547.76	43476.99
Asset-3 1.12.11		32115.40	2232.49	798.80	1270.76	333.28	36750.73
Asset-4 1.3.2012			17973.85	312.64	879.44	273.69	19439.60

17. Capital cost as on the date of commercial operation is inclusive of initial spares. The petitioner had claimed initial spares for Asset 1 (namely 400kV Mundra-Bachchau T/L along with associated bays) in Petition No. 105/2011 amounting to ₹46.29 lakh for Sub-station. These have already been adjusted as per Regulation 8 of the 2009 Tariff Regulations, vide order dated 2.5.2013 in Petition No. 105/2011.

Cost over-run

18. The total estimated completion cost of the asset is ₹116128.45 lakh against the total approved cost of ₹121236.28 lakh. Hence, there is no cost over-run.



19. However, as per Form 5B (Page 48-49 of the petition) there is increase in cost of various sub-heads, such as Tower Steel" (26.9%)", "Preliminary Investigation, Right of Way, forest clearance, PTCC, General civil works compensation etc. (204%) and Compensating Equipment-Reactor, SVCs (318.4%), Auxiliary system (77.9%), Switchgear (CT, PT, circuit breakers, isolators etc.) (71.7%), Bus-bars /conductors/ insulators (68.2%), Structure for switchyard (40.4%), Miscellaneous civil works (68.2%), Insulators (23.5%) and Hardware fittings (12.8%) .

20. In this connection, the petitioner has, vide affidavit dated 13.4.2012, submitted as under:-

(a) The increase in cost of tower steel has been attributed to increase in number of tension towers, by 5 nos. on account of RoW problem. Further, awarded cost of conductor is lower than the estimated cost which dragged the overall cost of conductor lower than the awarded cost.

(b) Regarding cost variation in insulators, it has been submitted that Hardware fittings and Miscellaneous civil works, switch gears, CT/PT, Bus-bars, Conductors, Insulators, auxiliary system in sub-station is mainly on account of variation between estimated and awarded cost. Petitioner has further submitted that the estimates are prepared by the petitioner as per well defined procedures for cost estimates. The cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts. For procurement,



open competitive bidding route is followed and by providing equal opportunity to all eligible firms, lowest possible market prices for required product/ services is obtained and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid prices against tenders may happen to be lower or higher than the cost estimate depending upon prevailing market conditions. In the instant case the awarded price were above the estimated FR rates in the said substation. Variation in the cost of Civil works is due to works done as per the site conditions.

(c) As regards the increase in cost of under head " Preliminary investigation, Right of way, forest clearance, PTCC, general civil works, compensation, etc., it has been clarified that it is mainly on account of forest compensation including NPV which the agency has to statutorily pay to the forest department.

(d) Increase in cost by 318% under Compensating Equipment (Reactor, SVCs etc.) in Form 5B, has been attributed to non shifting of two nos. of 50 MVAR reactors from Seoni Sub-station to Ranchodpura Sub-station as planned earlier.

(e) The petitioner has further submitted, that out of said two reactors, one was to be released from 765 kV Seoni- Wardha Ckt-I under Sipat-II Supplementary System after its up gradation to 765 kV level from 400 kV level as charged initially. This reactor could not be shifted as the said line is still being run on 400 kV level. The other 50



MVAR reactor at Seoni Sub-station pertains to 765 kV Seoni- Wardha Ckt-II under WRSS-II Set-A Scheme, which was not procured as this circuit was directly charged at 765 kV instead of 400 kV as planned earlier.

(f) Regarding justification for increase in cost and length of earth wire by 33.8%, in Form-5B, in light of the fact in spite of increase in length of line the cost of conductor has reduced from the FR cost whereas the earth wire and phase conductors are made of the same material except in case of OPWG. The petitioner further submitted that in case of Earth wire, total quantity got increased due to increase in line length apart from the increase in actual rates from the estimated rates. Actual awarded cost for conductor is lower than the estimated cost which dragged the overall cost of conductor lower than the FR cost.

(g) Regarding increase in cost of "Hardware Fittings", the petitioner has stated that total cost of hardware fittings was increased due to increase in quantity due to increase in angle towers as well as increase in awarded cost. The quantity of various items like single suspension "I" Pilot insulator string, Double suspension "I" Insulator String and Double Tension Insulator String has been increased by 13 nos., 7 nos. and 258 nos. respectively.

21. It is seen that the total estimated cost is lower than the total approved cost. We are convinced about the reasons for increase in cost of some of the items submitted by the petitioner and allow the same.



Time overrun

22. The petitioner has submitted that as per the investment approval, the system was scheduled for commissioning by October 2012. Whereas Assets 1 and 2 were put under commercial operation on 1.10.2011, Asset- 3 and Asset- 4 were put under commercial operation on 1.12.2011 and 1.3.2012, respectively. Thus, there is no delay in the commissioning of the assets.

Treatment of Initial Spares

23. The petitioner in its affidavit dated 13.4.2012 and in its rejoinder to the reply filed by PSPCL has submitted detailed justification for claiming higher initial spares and they are as under:-

(a) A number of new projects were conceptualized during last tariff block i.e. 2004-09. Since most of these projects are having gestation period of three to four years, same are getting commissioned during the current tariff block i.e. 2009-14. The initial spares to be procured for any project get finalised along with the finalisation of equipment to be installed for sub-station and transmission line. During the tariff block 2004-09, the applicable norm for initial spare was 1.5% of the capital cost. Other than the upper cap of 1.5% of the capital cost as initial spares during 2004-09, there was no upper limit individually for sub-station portion and transmission line portion as long as overall limit of 1.5% of the capital cost is maintained.

(b) The 2004 Tariff Regulations were followed on this project which was conceptualised during 2004-09. As spares were already procured



within the limit of 1.5% of the capital cost for the project conceptualised during 2004-09, limiting the same with the current norms for 2009-14 will put the petitioner in disadvantage. The petitioner has requested the Commission that projects which were conceptualised during last tariff block, the initial spares may be considered as per prevailing norms during the block of conceptualisation of the project. Hence, the spares covered under the works in the current petition may be considered for determination of transmission tariff under power to relax as per Clause-44 (Power to Relax) of the the 2009 Tariff Regulations.

(c) The petitioner has mentioned that the cost of the spares has been included in the respective items and separate cost of the spares has not been provided in Form 5-B of the petition.

(d) The petitioner in its rejoinder dated 1.4.2013 to the PSPCL's reply dated 13.7.2012, submitted that spares covered under the current petition may be retained/ allowed and be considered for determination of transmission tariff under power to relax as per Clause 44 (Power to Relax) of the 2009 Tariff Regulations.

24. During hearing on 2.4.2013, the representative of the petitioner submitted that initial spares of more than the 2.5% of the ceiling limit as claimed may be allowed and the same may be reviewed after completion of the whole project.



25. The proviso to Para (2) of Regulation 1 of 2009 Tariff Regulation provides as under:-

"(2) These Regulations shall come into force on 1.4.2009, and unless reviewed earlier or extended by the Commission, shall remain in force for a period of 5 years from the date of commencement:

Provided that where a project, or a part thereof, has been declared under commercial operation before the date of commencement of these regulations and whose tariff has not been finally determined by the Commission till that date, tariff in respect of such project for such part thereof for the period ending 31.3.2009 shall be determined in accordance with the Central Electricity Regulatory Commission (Term and conditions of tariff) Regulations, 2004."

26. We have considered the submission of the petitioner. The assets were commissioned during 2009-14 period and, therefore, the capital cost of the project including the initial spares shall be considered as per the provisions of 2009 Tariff Regulations. The petitioner has not explained as to how the initial spares admissible under the 2009 Tariff Regulations has posed any difficulty to the petitioner in implementation of the project. We, therefore, do not see any justification for invoking the power to relax under Regulation 44 of the 2009 Tariff Regulations.

27. Accordingly, initial spares pertaining to Sub-station and transmission lines have been determined considering rate given for Sub-station i.e. 2.50% and 0.75% for transmission line under Regulation 8 of the 2009 Tariff Regulations. Initial spares claimed for transmission lines are within the ceiling limits of the 2009 Tariff Regulations. Excess initial spares have been deducted from the cost of Sub-stations, as per details given overleaf:-



(₹ in lakh)

Particulars	Cost as on cut-off date	Initial spares claimed	Ceiling limits as per Regulation 8 of 2009 Tariff Regulation	Initial spares worked out	Excess initial spares claimed
1	2	3	4	5= [(2)-(3)]*(4)/[100%-(4)]	6=(3)-(5)
Asset-2	2683.22	197.15	2.50%	63.75	133.40
Asset-3	2489.62	146.20	2.50%	60.09	86.11

28. Based on the above, the following capital cost is being considered for the purpose of computation of tariff in this petition:

(₹ in lakh)

Assets	Capital cost as on date of commercial operation including initial spares	Initial spares deducted	Capital Cost considered for calculating tariff as on actual date of commercial operation
Asset -1	15383.97	30.01	15353.96
Asset -2	38974.93	133.40	38841.53
Asset-3	32115.42	86.11	32029.31
Asset-4	17973.85	-	17973.85

Projected Additional Capital Expenditure

29. With regard to additional capital expenditure, clause 9(1) 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.”

30. The 2009 Tariff Regulations further defines cut-off date as

“cut-off date means 31st March of the year closing after 2 years of the year of commercial operation of the project, and incase the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after 3 years of the year of commercial operation”.

Therefore, cut-off date for the transmission assets is 31.3.2015.

31. The petitioner has claimed projected additional capital expenditure for the years 2011-12, 2012-2013 and 2013-14 respectively. Additional capital expenditure claimed falls within the Cut-off date. Hence, it has been considered for the purpose of tariff calculation.

Debt- equity ratio

32. Regulation 12 of the 2009 Tariff Regulations provides that:-

“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.

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

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

33. The detail of debt-equity as on dates of commercial operation/Notional dates of commercial operation of assets are as follows:-

(₹ in lakh)

Capital Cost as on date of commercial operation		
	Amount	%
Asset-1		
Debt	10747.77	70.00%
Equity	4606.19	30.00%
Total	15353.96	100.00%
Asset-2		
Debt	27189.07	70.00%
Equity	11652.46	30.00%
Total	38841.53	100.00%

(₹ in lakh)

Combined Asset – I		
	Amount	%
Debt	60641.48	70.00%
Equity	25989.22	30.00%
Total	86630.70	100.00%
Combined Asset - II		
Debt	75163.41	70.00%
Equity	32212.65	30.00%
Total	107376.05	100.00%

34. Details of Debt – Equity as on 31.3.2014 are as under:-

(₹ in lakh)

Capital Cost of Combined Asset – II as on 31.3.2014		
	Amount	%
Debt	81115.44	70.00%
Equity	34763.52	30.00%
Total	115878.96	100.00%

Return on Equity

35. Regulation 15 of the 2009 Tariff Regulations provides that:-

“15. (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation:

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:

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

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

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

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

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

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

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

36. Based on the above, the following return on equity has been allowed:

(₹ in lakh)

2011-12 (Pro-rata)			
	Asset 1	Asset 2	Combined Asset -I
Opening Equity	4606.19	11652.46	25989.22
Addition due to Additional Capitalisation	141.38	418.32	1347.32
Closing Equity	4747.57	12070.78	27336.53
Average Equity	4676.88	11861.62	26662.88
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate for the year 2008-09	11.33%	11.33%	11.330%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%	17.481%
Return on Equity (Pre Tax)	408.78	1036.76	1553.65

(₹ in lakh)

Combined Asset - II			
	2011-12 (Pro-rata)	2012-13	2013-14
Opening Equity	32212.65	32822.30	34117.10
Addition due to Additional Capitalisation	609.66	1294.79	646.42
Closing Equity	32822.30	34117.10	34763.52
Average Equity	32517.48	33469.70	34440.31
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate for the year 2008-09	11.330%	11.330%	11.330%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%	17.481%
Return on Equity (Pre Tax)	473.70	5850.84	6020.51

Interest on loan

37. 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.”

38. In these calculations, interest on loan has been calculated on the following basis:

(a) Gross amount of loan, repayment of instalments & rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition.



(b) The repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period.

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

(d) As per Form 13 of Combined Asset-I (Notional date of commercial operation 1.12.2011) the petitioner has indicated ₹ 283.71 lakh (Bond XXXVII) as debt funding for additional capital expenditure for 2011-2012. Keeping in view the expenditure figures indicated in the Management Certificate dated 29.6.2012, the aforesaid funding for additional capital expenditure has been considered in calculations as opening balance as on notional date of commercial operation of Combined Asset-I. Accordingly weighted average rate of interest for Combined Asset-I has been worked out. The same shall be reviewed at the time of truing up.

39. Calculation regarding average rate of interest has been annexed at Annexure-1 to Annexure-4 to this order.



40. Based on the above, interests on loan has been calculated are given hereunder:-

(₹ in lakh)

2011-12 (Pro rata)			
	Asset – 1	Asset – 2	Combined Asset – I
Gross Normative Loan	10747.77	27189.07	60641.48
Cumulative Repayment upto Previous Year	0.00	0.00	485.29
Net Loan-Opening	10747.77	27189.07	60156.20
Addition due to Additional Capitalisation	329.89	976.08	3143.74
Repayment during the year	412.00	1043.86	1564.57
Net Loan-Closing	10665.66	27121.29	61735.37
Average Loan	10706.72	27155.18	60945.78
Weighted Average Rate of Interest on Loan	8.6928%	8.8321%	8.8987%
Interest	465.36	1199.19	1807.78

(₹ in lakh)

Combined Asset - II			
	2011-12 (Pro rata)	2012-13	2013-14
Gross Normative Loan	75163.41	76585.94	79607.12
Cumulative Repayment upto Previous Year	1658.71	2135.72	8028.31
Net Loan-Opening	73504.69	74450.21	71578.82
Addition due to Additional Capitalisation	1422.53	3021.19	1508.32
Repayment during the year	477.01	5892.59	6064.50
Net Loan-Closing	74450.21	71578.82	67022.63
Average Loan	73977.45	73014.52	69300.72
Weighted Average Rate of Interest on Loan	8.9444%	8.9468%	8.9464%
Interest	551.40	6532.44	6199.93

Depreciation

41. Regulation 17 of the 2009 Tariff Regulations provides for computation of depreciation in the following manner, namely:-

“17. **Depreciation** (1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site;

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.

(3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(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.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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.”

42. The petitioner has claimed actual depreciation as a component of Annual Fixed Charges. However, depreciation has been calculated as per Regulation 17 (4) of the 2009 Tariff Regulations extracted hereinabove.

43. Asset in the instant petition were put on commercial operation on 1.8.2011. Accordingly these will complete 12 years beyond 2013-14 and thus depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III.



44. Accordingly, depreciation has been worked out on the basis of capital expenditure as on date of commercial operation wherein depreciation for the first year has been calculated on pro rata basis for the part of year.

45. Details of the depreciation worked out are given hereunder:-

(₹ in lakh)

2011-12 (Pro-rata)			
	Asset – 1	Asset – 2	Combined Asset – I
Gross Block	15353.96	38841.53	86630.70
Addition during 2009-14 due to projected additional capital expenditure	471.27	1394.40	4491.05
Gross Block	15825.23	40235.93	91121.75
Average Gross Block	15589.59	39538.73	88876.22
Rate of Depreciation	5.29%	5.28%	5.2812%
Depreciable Value	14030.63	35584.85	79988.60
Remaining Depreciable Value	14030.63	35584.85	79503.32
Depreciation	412.00	1043.86	1564.57

(₹ in lakh)

Combined Asset - II			
	2011-12 (Pro-rata)	2012-13	2013-14
Gross Block	107376.05	109408.24	113724.22
Addition during 2009-14 due to projected additional capital expenditure	2032.19	4315.98	2154.74
Gross Block	109408.24	113724.22	115878.96
Average Gross Block	108392.14	111566.23	114801.59
Rate of Depreciation	5.2810%	5.2817%	5.2826%
Depreciable Value	97552.93	100409.61	103321.43
Remaining Depreciable Value	95894.22	98273.88	95293.12
Depreciation	477.01	5892.59	6064.50

Operation & maintenance expenses

46. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for operation and maintenance expenses based on the type of sub-station and transmission line. Norms prescribed in respect of the elements covered in the instant petition are as given overleaf:-

Element	2009-10	2010-11	2011-12	2012-13	2013-14
D/C twin & triple conductor T/L (₹ lakh/ km)	0.627	0.663	0.701	0.741	0.783
400 kV bays (₹ lakh per bay)	52.40	55.40	58.57	61.92	65.46

47. Based on the above norms, O&M Charges for the assets involved in the petition have been calculated as under:-

(₹ in lakh)

Element Asset-2	2011-12 (pro-rata for 6 month from 1.10.2011 to 31.3.2012)
400kV D/C Bachchau-Ranchodpura TL (date of commercial operation 1.10.2011) (282.856 km D/c Line + 4nos. 400 kV bays)	99.14+117.14=216.28

(₹ in lakh)

Combined Asset-I	2011-12 (pro-rata for 3 months, from 1.12.11 to 29.2.2012)	2012-13	2013-14
192.187+99.468+282.856 (574.511) km , 400 kV D/C, triple conductor T/L	100.68	---	---
8 nos. 400 kV bays	117.14	---	---
Total O&M for Asset-I	217.82	---	---

(₹ in lakh)

Combined Asset-II	2011-12 (pro-rata for 1 month for March, 2012)	2012-13	2013-14
192.187+123.515+99.468+282.856 (698.026) km , 400 kV D/C, triple conductor T/L	40.78	517.24	546.55
8 nos. 400 kV bays.	39.05	495.36	523.68
Total O&M for Asset-II	79.82	1012.60	1070.23
Total O&M for Asset-I & II	297.64	1012.60	1070.23



48. The petitioner has submitted that O & M expenditure for the year 2009-14 had been arrived at on the basis of normalized actual O & M expenses during the period 2003-04 to 2007-08 and by escalating it by 5.72% per annum for arriving at the norms for the years of tariff period. The wage hike of 50% on account of pay revision of the employees of public sector undertaking has also been considered while calculating the O & M charges for the tariff period 2009-14. The petitioner has further submitted that it reserves the right to approach the Commission for suitable revision in the norms for O & M expenditure in case the impact of wage hike with effect from 1.1.2007 is more than 50%.

49. We observe that these issues have been raised by the petitioner in other petitions also. A view is yet to be taken by the Commission on reimbursement of the cost of wage hike. The decision as and when taken will be applicable to the present case also.

Interest on working capital

50. As per the 2009 Tariff Regulations the components of the working capital and the interest thereon are discussed hereunder:-

(i) Receivables

As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables will be equivalent to two months' of fixed cost. The petitioner has claimed the receivables on the basis of 2 months' of annual transmission charges claimed in the petition. In the tariff being

allowed, receivables have been worked out on the basis of 2 months' transmission charges.

(ii) Maintenance spares

Regulation 18(1)(c)(ii) of the 2009 Tariff Regulations provides for maintenance spares @ 15% per annum of the O & M expenses from 1.4.2009. The value of maintenance spares has accordingly been worked out.

(iii) O & M expenses

Regulation 18(1) (c) (iii) of the 2009 Tariff Regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital

As per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 dated 21.6.2010, SBI Base Rate (8.25%) Plus 350 bps as on 1.4.2011 (i.e.11.75%) has been considered as the rate of interest on working capital for the assets covered under the petition.

51. Necessary computations in support of interest on working capital has been given hereunder:-

(₹ in lakh)

2011-12 (Pro-rata)			
	Asset – 1 Pro-rata (2 months)	Asset – 2 Pro-rata (2 months)	Combined Asset – I Pro-rata (3 months)
Maintenance Spares	9.34	21.63	32.67
O & M expenses	5.19	12.02	18.15
Receivables	156.64	396.89	666.09
Total	171.17	430.53	716.92
Rate of Interest	11.75%	11.75%	11.75%
Interest	10.06	25.29	84.24

(₹ in lakh)

Combined Asset -II			
	2011-12 (Pro-rata)	2012-13	2013-14
Maintenance Spares	143.68	151.89	160.53
O & M expenses	79.82	84.38	89.19
Receivables	3231.52	3283.68	3295.29
Total	3,455.02	3,519.95	3,545.01
Rate of Interest	11.75%	11.75%	11.75%
Interest	33.83	413.59	416.54

Transmission charges

52. The transmission charges being allowed for the transmission assets are summarized below:-

(₹ in lakh)

2011-12			
	Asset – 1 (2 Months)	Asset – 2 (2 Months)	Combined Asset – I (3 Months)
Depreciation	137.33	347.95	1173.43
Interest on Loan	155.12	399.73	1355.84
Return on equity	136.26	345.59	1165.23
Interest on Working Capital	10.06	25.29	84.24
O & M Expenses	31.14	72.09	217.82
Total	469.91	1190.66	3996.56

(₹ in lakh)

Combined Asset – II			
	2011-12 (Pro-rata)	2012-13	2013-14
Depreciation	477.01	5892.59	6064.50
Interest on Loan	551.40	6532.44	6199.93
Return on equity	473.70	5850.84	6020.51
Interest on Working Capital	33.83	413.59	416.54
O & M Expenses	79.82	1012.60	1070.23
Total	1615.76	19702.05	19771.71

Filing fee and the publication expenses

52. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. In accordance with the Commission's order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee directly from the beneficiaries on *pro-rata* basis. The petitioner shall also be entitled for reimbursement of the publication expenses in connection with the present petition, directly from the beneficiaries on *pro-rata* basis.

Licence fee

53. The petitioner has submitted that in O&M norms for tariff block 2009-14 the cost associated with license fees had not been captured and the license fee may be allowed to be recovered separately from the respondents.

54. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 42 A (1) (b) of the 2009 Tariff Regulations



Service tax

55. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if it is subjected to such service tax in future. We consider petitioner's prayer premature and accordingly this prayer is rejected.

Sharing of Transmission Charges

56. 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.

57. This order disposes of Petition No. 104/TT/2012.

Sd/-

(M. Deena Dayalan)
Member

Sd/-

(V. S. Verma)
Member



Annexure-1**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹ in lakh)

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXI			
	Gross loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33
	Net Loan-Closing	100.00	100.00	91.67
	Average Loan	100.00	100.00	95.83
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	8.90	8.90	8.53
	Rep Schedule	12 annual installments from 25.02.2014		
2	Bond XXXIII			
	Gross loan opening	9823.00	9823.00	9823.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	9823.00	9823.00	9823.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	9823.00	9823.00	9823.00
	Average Loan	9823.00	9823.00	9823.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	848.71	848.71	848.71
	Rep Schedule	12 annual installments from 08.07.2014		
3	Bond XXXIV			
	Gross loan opening	170.00	170.00	170.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	170.00	170.00	170.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	170.00	170.00	170.00
	Average Loan	170.00	170.00	170.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	15.03	15.03	15.03
	Rep Schedule	12 annual installments from 21.10.2014		
4	Bond XXX			
	Gross loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33
	Net Loan-Closing	100.00	100.00	91.67
	Average Loan	100.00	100.00	95.83
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	8.80	8.80	8.43
	Rep Schedule	12 annual installments from 29.09.2013		



5	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	83.33
	Average Loan	100.00	95.83	87.50
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	9.20	8.82	8.05
	Rep Schedule	12 annual installments from 12.03.2013		
6	Bond XXXII			
	Gross loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33
	Net Loan-Closing	100.00	100.00	91.67
	Average Loan	100.00	100.00	95.83
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	8.84	8.84	8.47
	Rep Schedule	12 annual installments from 29.03.2014		
7	Bond XXXV			
	Gross loan opening	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	200.00	200.00	200.00
	Average Loan	200.00	200.00	200.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	19.28	19.28	19.28
	Rep Schedule	12 annual installments from 31.05.2015		
8	Bond XXXVI			
	Gross loan opening	175.78	175.78	175.78
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	175.78	175.78	175.78
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	175.78	175.78	175.78
	Average Loan	175.78	175.78	175.78
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	16.44	16.44	16.44
	Rep Schedule	15 annual installments from 29.08.2016		
	Bond XXXVII			
	Gross loan opening	0.00	329.90	329.90
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	329.90	329.90



Additions during the year	329.90	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	329.90	329.90	329.90
Average Loan	164.95	329.90	329.90
Rate of Interest	9.25%	9.25%	9.25%
Interest	15.26	30.52	30.52
Rep Schedule	12 annual installments from 26.12.2015		
Total Loan			
Gross loan opening	10768.78	11098.68	11098.68
Cumulative Repayment upto DOCO/previous year	0.00	0.00	8.33
Net Loan-Opening	10768.78	11098.68	11090.35
Additions during the year	329.90	0.00	0.00
Repayment during the year	0.00	8.33	33.33
Net Loan-Closing	11098.68	11090.35	11057.01
Average Loan	10933.73	11094.51	11073.68
Rate of Interest	8.6928%	8.7009%	8.7004%
Interest	950.45	965.32	963.45

Annexure-2**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹in lakh)

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXI			
	Gross loan opening	1500.00	1500.00	1500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1500.00	1500.00	1500.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	125.00
	Net Loan-Closing	1500.00	1500.00	1375.00
	Average Loan	1500.00	1500.00	1437.50
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	133.50	133.50	127.94
	Rep Schedule	12 annual installments from 25.02.2014		
2	Bond XXXIII			
	Gross loan opening	10200.00	10200.00	10200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	10200.00	10200.00	10200.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	10200.00	10200.00	10200.00
	Average Loan	10200.00	10200.00	10200.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	881.28	881.28	881.28
	Rep Schedule	12 annual installments from 08.07.2014		
3	Bond XXXIV			
	Gross loan opening	9591.00	9591.00	9591.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	9591.00	9591.00	9591.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	9591.00	9591.00	9591.00
	Average Loan	9591.00	9591.00	9591.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	847.84	847.84	847.84
	Rep Schedule	12 annual installments from 21.10.2014		
4	Bond XXX			
	Gross loan opening	1500.00	1500.00	1500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1500.00	1500.00	1500.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	125.00
	Net Loan-Closing	1500.00	1500.00	1375.00
	Average Loan	1500.00	1500.00	1437.50
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	132.00	132.00	126.50
	Rep Schedule	12 annual installments from 29.09.2013		



5	Bond XXIX			
	Gross loan opening	1500.00	1500.00	1500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	125.00
	Net Loan-Opening	1500.00	1500.00	1375.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	125.00	125.00
	Net Loan-Closing	1500.00	1375.00	1250.00
	Average Loan	1500.00	1437.50	1312.50
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	138.00	132.25	120.75
	Rep Schedule	12 annual installments from 12.03.2013		
	Bond XXXII			
	Gross loan opening	1500.00	1500.00	1500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1500.00	1500.00	1500.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	125.00
	Net Loan-Closing	1500.00	1500.00	1375.00
	Average Loan	1500.00	1500.00	1437.50
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	132.60	132.60	127.08
	Rep Schedule	12 annual installments from 29.03.2014		
7	Bond XXXV			
	Gross loan opening	1000.00	1000.00	1000.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1000.00	1000.00	1000.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1000.00	1000.00	1000.00
	Average Loan	1000.00	1000.00	1000.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	96.40	96.40	96.40
	Rep Schedule	12 annual installments from 31.05.2015		
8	Bond XXXVI			
	Gross loan opening	491.89	491.89	491.89
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	491.89	491.89	491.89
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	491.89	491.89	491.89
	Average Loan	491.89	491.89	491.89
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	45.99	45.99	45.99
	Rep Schedule	15 annual installments from 29.08.2016		
9	Bond XXXVII			
	Gross loan opening	0.00	975.64	975.64
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	975.64	975.64



Additions during the year	975.64	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	975.64	975.64	975.64
Average Loan	487.82	975.64	975.64
Rate of Interest	9.25%	9.25%	9.25%
Interest	45.12	90.25	90.25
Rep Schedule	12 annual installments from 26.12.2015		
Total Loan			
Gross loan opening	27282.89	28258.53	28258.53
Cumulative Repayment upto DOCO/previous year	0.00	0.00	125.00
Net Loan-Opening	27282.89	28258.53	28133.53
Additions during the year	975.64	0.00	0.00
Repayment during the year	0.00	125.00	500.00
Net Loan-Closing	28258.53	28133.53	27633.53
Average Loan	27770.71	28196.03	27883.53
Rate of Interest	8.8321%	8.8385%	8.8368%
Interest	2452.74	2492.11	2464.03

Annexure -3

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(₹in lakh)

	Details of Loan	2011-12	2012-13	2013-14
1	Bond XXXI			
	Gross loan opening	2600.00	2600.00	2600.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	2600.00	2600.00	2600.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	216.67
	Net Loan-Closing	2600.00	2600.00	2383.33
	Average Loan	2600.00	2600.00	2491.67
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	231.40	231.40	221.76
	Rep Schedule	12 annual installments from 25.02.2014		
2	Bond XXXIII			
	Gross loan opening	25223.00	25223.00	25223.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	25223.00	25223.00	25223.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	25223.00	25223.00	25223.00
	Average Loan	25223.00	25223.00	25223.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	2179.27	2179.27	2179.27
	Rep Schedule	12 annual installments from 08.07.2014		
	Bond XXXIV			
	Gross loan opening	14396.00	14396.00	14396.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	14396.00	14396.00	14396.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	14396.00	14396.00	14396.00
	Average Loan	14396.00	14396.00	14396.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	1272.61	1272.61	1272.61
	Rep Schedule	12 annual installments from 21.10.2014		
4	Bond XXX			
	Gross loan opening	2600.00	2600.00	2600.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	2600.00	2600.00	2600.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	216.67
	Net Loan-Closing	2600.00	2600.00	2383.33
	Average Loan	2600.00	2600.00	2491.67



	Rate of Interest	8.80%	8.80%	8.80%
	Interest	228.80	228.80	219.27
	Rep Schedule	12 annual installments from 29.09.2013		
5	Bond XXIX			
	Gross loan opening	2600.00	2600.00	2600.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	216.67
	Net Loan-Opening	2600.00	2600.00	2383.33
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	216.67	216.67
	Net Loan-Closing	2600.00	2383.33	2166.67
	Average Loan	2600.00	2491.67	2275.00
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	239.20	229.23	209.30
	Rep Schedule	12 annual installments from 12.03.2013		
	Bond XXXII			
	Gross loan opening	3100.00	3100.00	3100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3100.00	3100.00	3100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	258.33
	Net Loan-Closing	3100.00	3100.00	2841.67
	Average Loan	3100.00	3100.00	2970.83
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	274.04	274.04	262.62
	Rep Schedule	12 annual installments from 29.03.2014		
7	Bond XXXV			
	Gross loan opening	6200.00	6200.00	6200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	6200.00	6200.00	6200.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	6200.00	6200.00	6200.00
	Average Loan	6200.00	6200.00	6200.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	597.68	597.68	597.68
	Rep Schedule	12 annual installments from 31.05.2015		
8	Bond XXXVI			
	Gross loan opening	3813.45	3813.45	3813.45
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3813.45	3813.45	3813.45
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	3813.45	3813.45	3813.45
	Average Loan	3813.45	3813.45	3813.45
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	356.56	356.56	356.56
	Rep Schedule	12 annual installments from 29.08.2016		



9	Bond XXXVII(Add cap for 2011-2012)			
	Gross loan opening	0.00	2143.88	2143.88
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	2143.88	2143.88
	Additions during the year	2143.88	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2143.88	2143.88	2143.88
	Average Loan	1071.94	2143.88	2143.88
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	99.15	198.31	198.31
	Rep Schedule	12 annual installments from 26.12.2015		
10	Bond XXXVI (Add cap for 2011-2012)			
	Gross loan opening	0.00	1000.00	1000.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	1000.00	1000.00
	Additions during the year	1000.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1000.00	1000.00	1000.00
	Average Loan	500.00	1000.00	1000.00
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	46.75	93.50	93.50
	Rep Schedule	15 Annual instalments from 29.08.2016		
11	Bond XXXVII			
	Gross loan opening	283.71	283.71	283.71
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	283.71	283.71	283.71
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	23.64
	Net Loan-Closing	283.71	283.71	260.07
	Average Loan	283.71	283.71	271.89
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	26.24	26.24	25.15
	Rep Schedule	12 annual installments from 26.12.2015		
	Total Loan			
	Gross loan opening	60816.16	63960.04	63960.04
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	216.66
	Net Loan-Opening	60816.16	63960.04	63743.38
	Additions during the year	3143.88	0.00	0.00
	Repayment during the year	0.00	216.67	931.98
	Net Loan-Closing	63960.04	63743.38	62811.40
	Average Loan	62388.10	63851.71	63277.39
	Weighted Average Rate of Interest	8.8987%	8.9076%	8.9068%
	Interest	5551.70	5687.64	5636.02



Annexure-4**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹in lakh)

	Details of Loan	2011-2012	2012-2013	2013-2014
1	Bond XXXI			
	Gross loan opening	3100.00	3100.00	3100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3100.00	3100.00	3100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	258.33
	Net Loan-Closing	3100.00	3100.00	2841.67
	Average Loan	3100.00	3100.00	2970.83
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	275.90	275.90	264.40
	Rep Schedule	12 annual installments from 25.02.2014		
2	Bond XXXIII			
	Gross loan opening	29623.00	29623.00	29623.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	29623.00	29623.00	29623.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	29623.00	29623.00	29623.00
	Average Loan	29623.00	29623.00	29623.00
	Rate of Interest	8.64%	8.64%	8.64%
	Interest	2559.43	2559.43	2559.43
	Rep Schedule	12 annual installments from 08.07.2014		
3	Bond XXXIV			
	Gross loan opening	14493.00	14493.00	14493.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	14493.00	14493.00	14493.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	14493.00	14493.00	14493.00
	Average Loan	14493.00	14493.00	14493.00
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	1281.18	1281.18	1281.18
	Rep Schedule	12 annual installments from 21.10.2014		
4	Bond XXX			
	Gross loan opening	3100.00	3100.00	3100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3100.00	3100.00	3100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	258.33
	Net Loan-Closing	3100.00	3100.00	2841.67
	Average Loan	3100.00	3100.00	2970.83



	Rate of Interest	8.80%	8.80%	8.80%
	Interest	272.80	272.80	261.43
	Rep Schedule	12 annual installments from 29.09.2013		
5	Bond XXIX			
	Gross loan opening	3100.00	3100.00	3100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	258.33
	Net Loan-Opening	3100.00	3100.00	2841.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	258.33	258.33
	Net Loan-Closing	3100.00	2841.67	2583.33
	Average Loan	3100.00	2970.83	2712.50
	Rate of Interest	9.20%	9.20%	9.20%
	Interest	285.20	273.32	249.55
	Rep Schedule	12 annual installments from 12.03.2013		
	Bond XXXII			
	Gross loan opening	3185.23	3185.23	3185.23
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3185.23	3185.23	3185.23
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	265.44
	Net Loan-Closing	3185.23	3185.23	2919.79
	Average Loan	3185.23	3185.23	3052.51
	Rate of Interest	8.84%	8.84%	8.84%
	Interest	281.57	281.57	269.84
	Rep Schedule	12 annual installments from 29.03.2014		
7	Bond XXXV			
	Gross loan opening	10200.00	10200.00	10200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	10200.00	10200.00	10200.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	10200.00	10200.00	10200.00
	Average Loan	10200.00	10200.00	10200.00
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	983.28	983.28	983.28
	Rep Schedule	12 annual installments from 31.05.2015		
8	Bond XXXVI			
	Gross loan opening	7312.92	7312.92	7312.92
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	7312.92	7312.92	7312.92
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	7312.92	7312.92	7312.92
	Average Loan	7312.92	7312.92	7312.92
	Rate of Interest	9.35%	9.35%	9.35%
	Interest	683.76	683.76	683.76
	Rep Schedule	12 annual installments from 29.08.2016		



9	Bond XXXVII(Add cap for 2011-2012)			
	Gross loan opening	0.00	1422.54	1422.54
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	1422.54	1422.54
	Additions during the year	1422.54	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1422.54	1422.54	1422.54
	Average Loan	711.27	1422.54	1422.54
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	65.79	131.58	131.58
	Rep Schedule	12 annual installments from 26.12.2015		
10	Bond XXXVII			
	Gross loan opening	1223.90	1223.90	1223.90
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1223.90	1223.90	1223.90
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1223.90	1223.90	1223.90
	Average Loan	1223.90	1223.90	1223.90
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	113.21	113.21	113.21
	Rep Schedule	12 Annual instalments from 26.12.2015		
	Total Loan			
	Gross loan opening	75338.05	76760.59	76760.59
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	258.33
	Net Loan-Opening	75338.05	76760.59	76502.26
	Additions during the year	1422.54	0.00	0.00
	Repayment during the year	0.00	258.33	1040.44
	Net Loan-Closing	76760.59	76502.26	75461.82
	Average Loan	76049.32	76631.43	75982.04
	Weighted Average Rate of Interest	8.9444%	8.9468%	8.9464%
	Interest	6802.12	6856.03	6797.67