# CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI 

Petition No. 349/2010

Coram: Dr. Pramod Deo, Chairperson<br>Shri S. Jayaraman, Member<br>Shri M. Deena Dayalan, Member

## Date of Hearing: 12.7.2011 Date of Order: 16.5.2012

In the matter of:
Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999, and Central Electricity Regulatory Commission(Terms and Conditions of Tariff) Regulations 2009, for (i) 765 kV S/C Bina-Gwalior Line II along with associated bays (ii) 400 kV D/C DamohBhopal Ckt I, (iii) 400kV D/C Damoh-Bhopal Ckt II, (iv) 400 kv, 50 MVAR Bus Reactor at Gwalior S/S,(v) 400 kV D/C Birsinghpur-Damoh transmission line along with associated bays under WRSS-II, Set D Scheme of Western Region for tariff block 1.4.2009 to 31.3.2014 period

## And

In the matter of:

Power Grid Corporation of India Limited, Gurgaon
......Petitioner

Vs

1. Madhya Pradesh Power Trading Company Ltd., Jabalpur
2. Maharashtra State Electricity Distribution Co. Ltd., Mumbai
3. Gujarat Urja Vikas Nigam Ltd. Vadodara
4. Electricity Department, Govt. of Goa, Panaji
5. Electricity Department, Administration of Daman and Diu
6. Electricity Department, Administration of Dadra and Nagar Haveli, Silvassa
7. Chattisgarh State Electricity Board, Raipur
8. Madhya Pradesh Audyogik Kendra Vikas Nigam Ltd., Indore ...Respondents

## The following were present:

1. Shri S.S. Raju, PGCIL
2. Shri M M Mondal, PGCIL
3. Shri Rajeev Gupta, PGCIL

## ORDER

This petition has been filed for determination of transmission tariff for assets (i) 765 kV S/C Bina-Gwalior Line II along with associated bays, (ii) 400 kV D/C Damoh-Bhopal Ckt I, (iii) 400kV D/C Damoh-Bhopal Ckt II, (iv) 400 kV, 50 MVAR Bus Reactor at Gwalior Sub-station, (v) 400 kV D/C Birsinghpur-Damoh Transmission Line along with associated bays under WRSS-II, Set D Scheme of Western Region (hereinafter referred to as "the transmission assets") for the period from 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 regulations").
2. The administrative approval and expenditure sanction to the transmission project was accorded by the Ministry of Power, Government of India, vide their letter No. 12/7/2004-PG dated 24.7.2006 at an estimated cost of ₹522123 lakh including IDC of ₹38042 lakh (based on 4th quarter, 2005 price level) consisting of (i) ₹358140 lakh (including IDC of ₹25062 lakh) for PGCIL portion and (ii) ₹163983 lakh (including IDC of ₹12980 lakh) for IPTC's portion.

3．The transmission assets for which tariff is being awarded in this order have been combined as under：－

| S．No． | Details | Date of <br> commercial <br> operation | Referred to <br> as |
| :--- | :--- | :--- | :--- |
| （a） | （i） 765 kV S／C Bina Gwalior Line II <br> along with associated bays | 1.3 .2010 | Asset 1 |
| （b） | （i） 765 kV S／C Bina Gwalior Line II <br> along with associated bays and <br> （ii） 400 kV D／C Damoh Bhopal Ckt I | 1.6 .2010 <br> （Notional） | Combined <br> Asset 2 |
| （c） | （i） $765 \mathrm{kV} \mathrm{S/C} \mathrm{Bina} \mathrm{Gwalior} \mathrm{Line} \mathrm{II}$ <br> along with associated bays， <br> （ii）400 kV D／C Damoh Bhopal Ckt I <br> and， <br> （iii）400kV D／C Damoh Bhopal Ckt II | 1.7 .2010 <br> （Notional） | Combined <br> Asset 3 |
| （d） | （i）765 kV S／C Bina Gwalior Line II <br> along with associated bays， <br> （ii）400 kV D／C Damoh Bhopal Ckt I， <br> （iii）400kV D／C Damoh Bhopal Ckt II <br> and， <br> （iv）400 kv，50 MVAR Bus Reactor at <br> Gwalior Sub－station | （Notional） | Asset 4 |
| （e） | （i） 765 kV S／C Bina Gwalior Line II <br> along with associated bays，（ii）400 kV <br> D／C Damoh Bhopal Ckt I，（iii）400kV <br> D／C Damoh Bhopal Ckt II，（iv）400 kv， <br> 50 MVAR Bus Reactor at Gwalior Sub－ <br> station and，（v）400 kV D／C Birsinghpur <br> Damoh Transmission Line alongwith <br> associated bays | 1.3 .2011 <br> asotional） | Combined <br> Asset 5 |

4．The transmission tariff for the following period has been allowed for the transmission assets covered in the instant petition：－

| S．No． | Asset | Duration |
| :---: | :--- | :--- |
| （a） | Asset 1 | 1.3 .2010 to 31．5．2010 |
| （b） | Combined Asset 2 | 1.6 .2010 to 30．6．2010 |
| （c） | Combined Asset 3 | 1.7 .2010 to 31．8．2010 |
| （d） | Combined Asset 4 | 1.9 .2010 to 28．2．2011 |
| （e） | Combined Asset 5 | 1.3 .2011 to 31．3．2014 |

5. Details of the transmission charges claimed by the petitioner are as under:

|  | (₹ in lakh) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Asset 1 |  | Combined | Combined | Combined |
|  | $\begin{gathered} \hline 2009-10 \\ \text { (Pro- } \\ \text { rata) } \end{gathered}$ | 2010-11 | 2010-11 | 2010-11 | 2010-11 |
| Depreciation | 119.41 | 1489.23 | 1848.58 | 1887.4 | 7 1502.35 |
| Interest on Loan | 69.71 | 823.57 | 837.07 | 802.68 | ( 644.20 |
| Return on equity | 118.59 | 1478.79 | 1835.48 | 1873.92 | 2 1491.57 |
| Interest on Working Capital | 7.37 | 91.21 | 107.70 | 113.00 | ( 91.20 |
| O \& M Expenses | 19.19 | 243.51 | 362.82 | 455.4 | 1 386.52 |
| Total | 334.27 | 4126.31 | 4991.65 | 5132.48 | 48115.84 |
|  |  |  |  | (₹ in | lakh) |
|  | Com | bined Asset |  |  |  |
|  |  | 2010-11 <br> (Pro-rata) | 2011-12 | 2012-13 | 2013-14 |
| Depreciation |  | 308.47 | 3837.56 | 3878.57 | 3887.07 |
| Interest on Loan |  | 114.44 | 1352.57 | 1243.57 | 111.24 |
| Return on equity |  | 306.26 | 3809.77 | 3850.49 | 3858.94 |
| Interest on Working Capital |  | 18.70 | 232.26 | 234.72 | 235.57 |
| O \& M Expenses |  | 86.31 | 1094.86 | 1157.60 | 1223.55 |
| Total |  | 834.18 | 10327.02 | 10364.95 | 9316.37 |

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

|  |  |  | (₹ in lakh) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Asset 1 |  | Combined | Combined | Combined |
|  | $\begin{gathered} \hline 2009-10 \\ \text { (Pro-rata) } \end{gathered}$ | 2010-11 | 2010-11 | 2010-11 | 2010-11 |
| Maintenance Spares | 34.54 | 36.53 | 65.31 | 91.08 | 99.39 |
| O \& M expenses | 19.19 | 20.29 | 36.28 | 50.60 | 55.22 |
| Receivables | 668.54 | 687.72 | 998.33 | 1140.55 | 1175.95 |
| Total | 722.27 | 744.54 | 1099.92 | 1282.23 | 292.35 |
| Interest | 7.37 | 91.21 | 10.77 | 113.00 | 31.49 |
| Rate of Interest | 12.25\% | 12.25\% | 11.75\% | 11.75\% | 11.75\% |
|  |  |  |  |  | lakh) |
|  | Comb | ned Asset 5 |  |  |  |
|  |  | $\begin{gathered} \hline 2010-11 \\ \text { (Pro-rata) } \end{gathered}$ | 2011-12 | 2012-13 | 2013-14 |
| Maintenance Spares |  | 155.35 | 164.23 | 173.64 | 183.53 |
| O \& M expenses |  | 86.31 | 91.24 | 96.47 | 101.96 |
| Receivables |  | 1668.36 | 1721.17 | 1727.49 | 1719.40 |
| Total |  | 1910.02 | 1976.64 | 1997.60 | 2004.89 |
| Interest |  | 26.00 | 48.43 | 48.96 | 49.37 |
| Rate of Interest |  | 11.75\% | 11.75\% | 11.75\% | 11.75\% |

7. 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. None of the respondents have filed any reply to the petition.
8. Having heard the representatives of the petitioner and perused the material on records, we proceed to dispose of the petition.

## CAPITAL COST

9. As regards the capital cost, Regulation 7 (1) of the 2009 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."
10. Details of the apportioned approved cost, as on date of commercial operation and projected additional capital expenditure to be incurred on the assets covered under this petition is given overleaf:-

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| Name of Asset | Asset-1 | Asset-2 | Asset-3 | Asset-4 | Asset-5 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Apportioned approved cost | 33928.08 | 18209.27 | 5066.56 | 1154.61 | 24689.69 | 83048.21 |
| Expenditure upto commercial operation | 26616.44 | 13301.31 | 5359.96 | 835.97 | 20054.97 |  |
| $\begin{aligned} & \text { Commissioning to } \\ & 31.3 .2010 \end{aligned}$ | 1037.96 | - | - | - | - |  |
| 1.4.2010 to  <br> 31.5 .2010  | 21.56 | - | - | - | - |  |
| 1.6 .2010 to <br> 30.6 .2010  <br> 1.7 .2010  | 26.06 | - | - | - | - |  |
| 1.7.2010 31.8.2010 to | 91.68 | 22.92 | 22.92 | - | - |  |
| 1.9 .2010 to <br> 30.11 .2010  | 456.78 | 138.29 | 117.91 | 21.20 | - |  |
| 1.12 .2010 to <br> 31.3 .2011  | 491.36 | 817.07 | 401.06 | 397.57 | 1797.27 |  |
| 1.4.2011 to <br> 31.3 .2012  | 320.00 | 107.50 | 97.50 | 40.20 | 666.00 |  |
| 1.4.2012 to <br> 31.3 .2013  | 97.00 | 55.00 | 55.00 | 0.00 | 115.00 |  |
| 1.4.2013 31.3.2014 to | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |  |
| TOTAL | 29158.84 | 14442.09 | 6054.35 | 1294.94 | 22633.23 | 83048.21 |

11. During the hearing on 12.7.2011 the petitioner was directed to explain cost escalation of ₹ 2576 lakh under the head "conductor". The petitioner in its affidavit dated 1.9.2011 has submitted that the cost of conductor increased as total quantity of ACSR Bersimis conductor got increased from 2862 km (estimated quantity of $4^{\text {th }}$ quarter 2005) to 2935 km ( $1^{\text {st }}$ quarter 2010) which includes O\&M spares quantity. Apart from the above, cost also increased due to variation between awarded and estimated rates and increase in entry tax from ₹ 73.21 lakh to ₹ 460.00 lakh. The justification for increase in cost of the conductor is not in order. Hence, the cost is being restricted to the Feasibility Report cost plus the increase in entry tax by ₹ 386.79 lakh.
12. The petitioner was also directed to explain the contradiction in increase in cost of ₹ 294 lakh under the head "hardware fittings" whereas there is a reduction under the head "Erection, stringing \& civil works including
foundation" by ₹ 1740 lakh in anticipated completion cost from the Feasibility Report cost.
13. Regarding this contradiction, the petitioner has submitted in its affidavit of 1.9.2011 that the quantity of suspension towers has decreased from estimated (FR) quantity of 551 nos. to 509 nos. and tension towers increased from 112 nos. to 118 nos. even though the line length has marginally decreased from FR. Accordingly, the respective hardware items (like single suspension "V" fittings suspension "I" pilot fitting, single suspension "V" pilot fitting, quad tension fittings) were increased. Besides above, rates for various hardware fitting items as per award also increased from FR as given below:

| S. <br> No. | Items |  | Rates as per FR <br> (per set) | Rates as per Actual <br> award (per set) |
| :--- | :--- | :--- | :--- | :--- |
| 1 | Single Suspension "V" Fittings | Set | 22,242 | 30,000 |
| 2 | Single Suspension "I" Pilot <br> Fittings | Set | 27,741 | 32,762 |
| 3 | Single Tension Fittings | Set | 19,783 |  |
| 4 | Single Suspension "V" pilot <br> Fittings | Set | 11,930 | 15,616 |
| 5 | Double "I" Suspension Fittings | Set | 19,609 | 26,493 |
| 6 | Double "V" Suspension <br> Fittings | Set | 41,660 | 50,258 |
| 7 | Quadruple Tension Fittings | Set | 54,788 | 64,099 |

14. PGCIL in the aforementioned affidavit informed that the cost of hardware fitting got increased by ₹ 294 lakh. Further, there is decrease in cost of erection, stringing \& civil works including foundation. This is mainly because quantities pertaining to various erection activities got decreased due to reduction in line length. The cost has been decreased based on the actual soil strata encountered and also because the quantities of wet foundation and Submerged Fissured Rock (SFR) foundation got decreased whereas dry rock
and dry fissured rock (DFR) foundations got increased. The explanation submitted by the petitioner is in order, and hence the claim made by the petitioner is being allowed.
15. It is observed that there has been some delay in commissioning of some of the elements of the above transmission assets as indicated below:-

| $\begin{aligned} & \text { SL } \\ & \text { No } \end{aligned}$ | Name of Asset | Schedule as per FR | Date of commercial operation | Delay |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 765 kV S/C Bina-Gwalior Line II | July 2010 | 1.3.2010 | Within Schedule |
| 2 | 400 kV Damoh Bhopal Ckt I |  | 1.6.2010 | Within Schedule |
| 3 | 400 kV damoh Bhopal Ckt II |  | 1.7.2010 | Within Schedule |
| 4 | 50 MVAR Bus Reactor at Gwalior S/S |  | 1.9.2010 | Two months delay |
| 5 | Birsinghpur-Damoh TL |  | 1.3.2011 | Eight months delay |

16. The petitioner has attributed the delay in commissioning of Asset 4 to non-availability of the SCADA personnel of GE Canada for commissioning of Bus Reactor at Gwalior Sub-station. As regards Asset 5, the petitioner has submitted that considerable time was taken in obtaining environment and forest clearance despite rigorous follow up.
17. The reasons adduced by the petitioner to justify time over-run are examined hereunder:-
(a) During the hearing on 12.7.2011, the Commission directed the petitioner to furnish the detailed reasons for delay in commissioning of 50 MVAR Bus Reactor at Gwalior sub-station. The petitioner, vide affidavit dated 1.9.2011, has submitted that the Bus Reactor protection system along with associated panels was supplied by M/s Siemens

India Limited and the integration of Bus bar reactor bays, alarms was to be done by M/s Siemens in association with M/s GE, Canada. Delay of one month in commissioning of Bus reactor at Gwalior sub-station was due to non-availability of SCADA personnel of GE Canada, which was not within the control of PGCIL.
(b) We are not impressed with the reasons given by the petitioner for delay. Non-availability of technical personnel is a contractual issue between the petitioner and the supplier and the petitioner should settle the issue as per the contract. There is no justification for condoning the delay and consequently passing on the burden of cost to the beneficiaries.
(c) As regards the delay in commissioning of Asset-5 (400 kV D/C Birsinghpur-Damoh Transmission Line), it has been submitted, vide affidavit dated 1.9.2011, that although the final forest clearance was given by Ministry of Environment \& Forests, Government of India, on 19.5.2009, the Forest Department of Madhya Pradesh issued order for permission to lay the transmission line within 46 m belt inside forest area for cutting the trees on 11.6.2009. The petitioner made payment against tree cutting on 4.9.2009 based on the demand note dated 29.6.2009 raised by Umaria forest circle (comprising Pali, Chandia, Nourozabad and Umaria). However, tree cutting work could not be carried out from June, 2009 to September, 2009 due to onset of monsoon season. Thereafter, CCF- Shahdol, vide letters dated 1.10.2009 and 23.2.2010, instructed PGCIL to undertake marking of
the trees in association with forest officials. The same was executed accordingly. The permission for cutting the trees was accorded in March, 2010 in Chandia, Umaria and Nourazabad divisions and work was completed in April, 2010 except in Pali Division (2.8 km stretch), where tree cutting was held up for want of approval. Due to incessant rains in July and August, 2010, tree cutting could not be started. Finally, it started in September, 2010 and was completed in October, 2010.
(d) We are not convinced about the reasons adduced for the delay. Onset of monsoon and incessant rain cannot be held as justifying factors for condoning delay. The petitioner made the payment against tree cutting on 4.9.2009 though the demand note was raised by the forest department on 29.6.2009. Further, it is not clear why PGCIL waited till 23.2.2010 to undertake marking of the trees, when CCF, Shahdol had vide letter dated 1.10.2009 instructed them to undertake marking in association with forest officials. Besides, no documentary evidence has been submitted to support that timely approval was sought in respect of 2.8 km of forest stretch in Pali Division. Thus, we hold that there is no justification for condoning the delay in this case either.
(e) CEA granted permission for charging both the lines including associated bays on 31.10.2010. The petitioner made the system ready for Ckt-3 and informed the same to SGTPS (MPGENCO) on the same day. However, the line could not be charged due to system constraint on account of Deepavali festival.
(f) It is the petitioner's responsibility to coordinate with the State authorities for charging the line. The submissions of the petitioner alleging system constraint for not charging the line have not been substantiated by any documentary evidence. On the contrary, there is documentary evidence to indicate that the petitioner has not completed the technical and commercial requirements of installing ABT meters in due time.
18. In view of the foregoing, we reject the request of the petitioner for condonation of delay. Accordingly, the IEDC and IDC claimed by the petitioner are disallowed to the extent indicated in the following table:-
(₹ in lakh)

| Combined Asset 4 |  |  |
| :--- | ---: | ---: |
| Details of IDC and IEDC as per Auditor's certificate dated 11.11.2010 |  |  |
| Details of IDC disallowed for 2 months |  |  |
| From Date of Investment Approval to 31.3.2010 | IEDC | IDC |
| From 01.4.2010-31.8.2010 | 11.90 | 30.46 |
| Total IDC and IEDC Claimed | 1.08 | 3.14 |
| Combined Asset 5 |  |  |
| From July 2010 to August 2010 (for 2 months) | 0.43 | 1.26 |
| Total disallowed IDC (for 2 months) | $\mathbf{0 . 4 3}$ | $\mathbf{1 . 2 6}$ |
| Details of IDC and IEDC as per CA Certificate dated 11.11.2010 |  |  |
| From Date of Investment Approval to 31.3.2010 | IEDC | IDC |
| From 1.4.2010-30.9.2010 | 282.38 | 722.21 |
| From 1.10.2010-30.11.2010 | 6.26 | 58.82 |
| Total IDC and IEDC claimed | $\mathbf{3 0 9 . 3 9}$ | $\mathbf{8 0 0 . 6 1}$ |
| Details of IDC disallowed for 8 months |  |  |
| IEDC | IDC |  |
| From April 2010 to September 2010 (for 6 months) | 20.26 | 58.82 |
| From October 2010 to November 2010 (for 2 months) | 6.75 | 19.61 |
| Total disallowed IDC (for 8 months) | $\mathbf{2 7 . 0 1}$ | $\mathbf{7 8 . 4 3}$ |

## TREATMENT OF INITIAL SPARES

19. Regulation 8 of the 2009 regulations provides that Initial spares shall be capitalised as a percentage of the original project, subject to following ceiling norms:

| Transmission line | $0.75 \%$ |
| :--- | :--- |
| Transmission Sub-station | $2.5 \%$ |
| Series compensation devices \& HVDC Station | $3.5 \%$ |

20. As per the Auditor's certificate submitted, it is seen that the petitioner has claimed initial spares of $₹ 307.23$ lakh pertaining to Sub-Station and ₹ 35.48 lakh for the Transmission Line. While Initial spares for Transmission Line are within the limit of Clause 8 of 2009 regulations, it is seen that the initial spares for Sub-Station are in excess of the prescribed norms as seen from the following:-

| Assets | Notional DOCO | Elements | Rate of initial spares as per Clause 8 of 2009 regulations | Expenditure pertaining to transmission line upto cut-off date | Initial spares claimed by petitioner | Initial spares as per 2009 regulations | Difference |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 | 2 | 3 | 4 | $\begin{gathered} 5= \\ {[(3)-(4)]^{*}(2)} \\ {[100 \%-(2)]} \end{gathered}$ | 6=(4)-(5) |
| Asset-1 | 1.3.2010 | TL | 0.75\% | 28273.21 | 35.48 | 213.38 | -177.90 |
|  |  | S/S (PLCC) | 2.50\% | 885.63 | 77.95 | 20.71 | 57.24 |
| CombinedAsset-2 | 1.6.2010 | TL | 0.75\% | 12967.88 | 0.00 | 97.99 | -97.99 |
|  |  | S/S (PLCC) | 2.50\% | 1474.19 | 64.00 | 36.16 | 27.84 |
| Combined Asset-3 | 1.7.2010 | TL | 0.75\% | 4580.16 | 0.00 | 34.61 | -34.61 |
|  |  | S/S (PLCC) | 2.50\% | 1474.19 | 64.00 | 36.16 | 27.84 |
| Combined Asset-4 | 1.9.2010 | TL | 0.75\% | 0.00 | 0.00 | 0.00 | 0.00 |
|  |  | S/S (PLCC) | 2.50\% | 1293.25 | *32.19 | 32.33 | -0.15 |
| $\begin{gathered} \hline \text { Combined } \\ \text { Asset-5 } \\ \hline \end{gathered}$ | 1.3.2011 | TL | 0.75\% | 19146.66 | 0.00 | 144.69 | -144.69 |
|  |  | S/S (PLCC) | 2.50\% | 3381.14 | **69.09 | 84.92 | -15.84 |


| Particulars | Ceiling limit <br> as per clause <br> $\mathbf{8}$ of 2009 <br> regulations | Cost as on <br> cut- off date | Apportioned <br> initial spares <br> claimed | Initial <br> spares <br> worked out | Excess initial <br> spares claimed |
| ---: | ---: | ---: | ---: | ---: | ---: |
| TL | $0.75 \%$ | 64967.91 | 35.48 | 490.67 | -455.19 |
| $\mathrm{~S} / \mathrm{S}$ | $2.50 \%$ | 8508.40 | 307.23 | 210.29 | 96.94 |

Note: In respect of Asset 4 and Asset 5, initial spares claimed by the petitioner have been modified based on the deduction made in IEDC and IDC.
21. Based on the above, cost of excess Initial Spares amounting to ₹ 96.94 lakh in Sub-Station (including PLCC) has been deducted from the Capital Cost of Asset-5 (Combined Assets 1 to 5) for the purpose of tariff calculation. Accordingly, the following capital cost have been considered for the purpose of computation of capital cost in this order:-


[^0]22. As shown in the above table, capital cost of ₹ 26616.44 lakh for Asset1, ₹ 40977.27 lakh for Combined Asset-2, ₹ 46363.29 lakh for Combined Asset-3, ₹. 47335.09 lakh for Combined Asset-4 and ₹ 67921.84 lakh for Combined Asset-5 are considered for tariff calculation after adjustment of IDC and IEDC in Combined Asset - 4 \& 5 and Initial Spares in Combined Asset-5.

## ADDITIONAL CAPITAL EXPENDITURE

23. With regard to additional capital expenditure, clause 9(1) of the 2009 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) $X X X$
(iii) $X X X$
(iv) $X X X$
(v) $X X X$ "
24. The 2009 regulations further defines cut-off date as under:-
"cut-off date means $31^{\text {st }}$ march of the year closing after 2 years of the year of commercial operation of the project, and incase of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be $31^{\text {st }}$ March of the year closing after 3 years of the year of commercial operation".

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25. The Additional Capital Expenditure claimed for the above Assets falls within the cut-off date. Hence, the same has been considered for the purpose of tariff calculation.

## DEBT- EQUITY RATIO

## 26. Regulation 12 of the 2009 regulations provides that,-

" (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."
27. Details of debt-equity in respect of the transmission assets as on the date of commercial operation are given overleaf:-

| Asset 1 | Financial Package as on date of commercial operation |  |
| :---: | :---: | :---: |
|  | Amount ( $₹$ in lakh) | \% |
| Debt | 18632.15 | 70.00 |
| Equity | 7984.29 | 30.00 |
| Total | 26616.44 | 100.00 |
| Combined Asset 2 | Admitted as on date of commercial operation |  |
|  | Amount ( $₹$ in lakh) | \% |
| Debt | 28684.73 | 70.00 |
| Equity | 12292.54 | 30.00 |
| Total | 40977.27 | 100.00 |
| Combined Asset 3 | Admitted as on date of commercial operation |  |
|  | Amount ( $₹$ in lakh) | \% |
| Debt | 32454.95 | 70.00 |
| Equity | 13908.34 | 30.00 |
| Total | 46363.29 | 100.00 |
| Combined Asset 4 | Admitted as on date of commercial operation |  |
|  | Amount (₹ in lakh) | \% |
| Debt | 33135.21 | 70.00 |
| Equity | 14199.89 | 30.00 |
| Total | 47335.09 | 100.00 |
| Combined Asset 5 | Admitted as on date of commercial operation |  |
|  | Amount (₹ in lakh) | \% |
| Debt | 47545.93 | 70.00 |
| Equity | 20375.91 | 30.00 |
| Total | 67921.84 | 100.00 |

28. Details of the debt-equity in respect of the additional capital expenditure is as under:-

| Combined <br> Asset-5 | Normative |  |
| :--- | ---: | ---: |
| $\mathbf{2 0 1 0 - 1 1}$ | Amount (₹ in lakh) | $\%$ |
| Debt | 2733.02 | 70.00 |
| Equity | 1171.30 | 30.00 |
| Total | $\mathbf{3 9 0 4 . 3 2}$ | $\mathbf{1 0 0 . 0 0}$ |


|  | Normative |  |
| :--- | ---: | ---: |
| 2011-12 | Amount (₹ in lakh) | $\%$ |
| Debt | 861.84 | 70.00 |
| Equity | 369.36 | 30.00 |
| Total | $\mathbf{1 2 3 1 . 2 0}$ | $\mathbf{1 0 0 . 0 0}$ |

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| $\mathbf{2 0 1 2 - 1 3}$ | Amount (₹ in lakh) | $\%$ |
| :--- | ---: | ---: |
| Debt | 225.40 | 70.00 |
| Equity | 96.60 | 30.00 |
| Total | $\mathbf{3 2 2 . 0 0}$ | $\mathbf{1 0 0 . 0 0}$ |

29. Debt equity ratio of the assets as on 31.3.2014 is as follows:-

| Combined <br> Asset-5 | As on 31.03.2014 |  |
| :--- | ---: | ---: |
| 2009-10 | Amount (₹ in lakh) | $\%$ |
| Debt | 51366.20 | $70.00 \%$ |
| Equity | 22013.17 | $30.00 \%$ |
| Total | $\mathbf{7 3 3 7 9 . 3 6}$ | $\mathbf{1 0 0 . 0 0 \%}$ |

## RETURN ON EQUITY

30. Regulation 15 of the 2009 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 financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".
31. The petitioner has computed return on equity on pre- tax basis on 11.33\% MAT in accordance with the tax rate applicable for 2008-09 and has claimed return on equity @ 17.481\%.
32. Based on the above, additional return on equity claimed by the petitioner has not been allowed. Accordingly, the following return on equity has been allowed:-

|  |  |  |  | (₹ in lakh) |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | :---: | :---: |
|  | Asset 1 |  | Combined <br> Asset 2 | Combined <br> Asset 3 | Combined <br> Asset 4 |  |  |
|  | $\mathbf{2 0 0 9 - 1 0}$ <br> (Pro-rata) | $\mathbf{2 0 1 0 - 1 1}$ | $\mathbf{2 0 1 0 - 1 1}$ | $\mathbf{2 0 1 0 - 1 1}$ | $\mathbf{2 0 1 0 - 1 1}$ |  |  |
| Opening Equity | 7984.29 | 8295.68 | 12292.54 | 13908.34 | 14199.89 |  |  |
| Addition due to Additional <br> Capital Expenditure | 311.39 | 326.23 | 613.25 | 767.99 | 852.37 |  |  |
| Closing Equity | 8295.68 | 8621.91 | 12905.78 | 14676.34 | 15052.25 |  |  |
| Average Equity | 8139.98 | 8458.79 | 12599.16 | 14292.34 | 14626.07 |  |  |
| Return on Equity (Base Rate ) | $15.50 \%$ | $15.50 \%$ | $15.50 \%$ | $15.50 \%$ | $15.50 \%$ |  |  |
| Tax rate for the year 2008-09 <br> (MAT) | $11.33 \%$ | $11.33 \%$ | $11.33 \%$ | $11.33 \%$ | $11.33 \%$ |  |  |
| Rate of Return on Equity (Pre <br> Tax) | $17.481 \%$ | $17.481 \%$ | $17.481 \%$ | $17.481 \%$ | $17.481 \%$ |  |  |
| Return on Equity (Pre Tax) | $\mathbf{1 1 8 . 5 8}$ | $\mathbf{1 4 7 8 . 6 8}$ | $\mathbf{1 8 3 5 . 3 8}$ | $\mathbf{1 8 7 3 . 8 3}$ | $\mathbf{1 4 9 1 . 4 6}$ |  |  |

(₹ in lakh)

| Combined Asset 5 |  |  |  | $\mathbf{2 0 1 3 - 1 4}$ |
| :--- | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 0 1 0 - 1 1}$ <br> (Pro-rata) | $\mathbf{2 0 1 1 - 1 2}$ | $\mathbf{2 0 1 2 - 1 3}$ | $\mathbf{2 0 1 5} \mathbf{l}$ |
| Opening Equity | 20375.91 | 21547.21 | 21916.57 | 22013.17 |
| Addition due to Additional Capital <br> Expenditure | 1171.30 | 369.36 | 96.60 | 0.00 |
| Closing Equity | 21547.21 | 21916.57 | 22013.17 | 22013.17 |
| Average Equity | 20961.56 | 21731.89 | 21964.87 | 22013.17 |
| Return on Equity (Base Rate ) | $15.50 \%$ | $15.50 \%$ | $15.50 \%$ | $15.50 \%$ |
| Tax rate for the year 2008-09 (MAT) | $11.33 \%$ | $11.33 \%$ | $11.33 \%$ | $11.33 \%$ |
| Rate of Return on Equity (Pre Tax ) | $17.481 \%$ | $17.481 \%$ | $17.481 \%$ | $17.481 \%$ |
| Return on Equity (Pre Tax) | $\mathbf{3 0 5 . 3 6}$ | $\mathbf{3 7 9 8 . 9 5}$ | $\mathbf{3 8 3 9 . 6 8}$ | $\mathbf{3 8 4 8 . 1 2}$ |

## INTEREST ON LOAN

## 33. Regulation 16 of the 2009 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."
34. In these calculations, interest on loan has been worked out as detailed below:
(a) Gross amount of loan, repayment of instalments and rate of interest on actual loan have been considered as per the petition to work out the weighted average rate of interest;
(b) Tariff is worked out considering normative loan and normative repayments. Depreciation allowed has been taken as normative repayment for the tariff period 2009-14.
(c) For loans with floating interest rates, rates of interest as on 1.4.2009/ date of commercial operation, whichever is later, have been considered.
(d) Repayment for IBRD III, IBRD IV and IBRD IV ADDL loans have been calculated as per the supporting documents attached with the petition.
(e) Weighted average rate of interest on actual loan worked out as above has been applied on the notional average loan during the year to arrive at the interest on loan.
35. When the assets are being combined for tariff purpose, petitioner has considered different value of interest rates corresponding to IBRD- III and IV loans as on notional date of commercial operation for the earlier asset while clubbing it with next asset. We have not made any change in the interest rates while clubbing the assets. This is one of the reasons for difference in interest on loan as claimed by the petitioner and as that worked out.
36. Detailed calculation of the weighted average rate of interest has been given in Annexure 1 to 5 to this order.
37. Details of the interest on loan worked on the above basis is as under:-
(₹ in lakh)

|  | Asset 1 |  | Combined <br> Asset 2 | Combined <br> Asset 3 <br> $\mathbf{2 0 1 0 - 1 1}$ | Combined <br> Asset 4 |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 0 0 9 - 1 0}$ <br> (Pro-rata) | $\mathbf{2 0 1 0 - 1 1}$ |  |  |  |
| Gross Normative Loan | 18632.15 | 19358.72 | 28684.73 | 32454.95 | 33135.21 |
| Cumulative Repayment upto <br> Previous Year | 0.00 | 119.41 | 367.62 | 552.48 | 867.06 |
| Net Loan-Opening | 18632.15 | 19239.31 | 28317.11 | 31902.47 | 32268.15 |
| Addition due to Additional <br> Capitalisation | 726.57 | 761.21 | 1430.91 | 1791.98 | 1988.85 |
| Repayment during the year | 119.41 | 1489.23 | 1848.58 | 1887.47 | 1502.30 |
| Net Loan-Closing | 19239.31 | 18511.28 | 27899.43 | 31806.98 | 32754.71 |
| Average Loan | 18935.73 | 18875.30 | 28108.27 | 31854.72 | 32511.43 |
| Weighted Average Rate of <br> Interest on Loan | $4.4181 \%$ | $4.3634 \%$ | $3.5367 \%$ | $3.3271 \%$ | $3.3013 \%$ |
| Interest | $\mathbf{6 9 . 7 2}$ | $\mathbf{8 2 3 . 6 0}$ | $\mathbf{8 2 8 . 4 3}$ | $\mathbf{7 9 4 . 8 9}$ | $\mathbf{6 2 6 . 0 9}$ |

(₹ in lakh)

| Combined Asset 5 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 2010-11 \\ & \text { (Pro-rata) } \end{aligned}$ | 2011-12 | 2012-13 | 2013-14 |
| Gross Normative Loan | 47545.93 | 50278.96 | 51140.80 | 51366.20 |
| Cumulative Repayment upto Previous Year | 2154.74 | 2462.31 | 6289.09 | 10156.88 |
| Net Loan-Opening | 45391.19 | 47816.65 | 44851.70 | 41209.31 |
| Addition due to Additional Capitalisation | 2733.02 | 861.84 | 225.40 | 0.00 |
| Repayment during the year | 307.57 | 3826.78 | 3867.79 | 3876.29 |
| Net Loan-Closing | 47816.65 | 44851.70 | 41209.31 | 37333.02 |
| Average Loan | 46603.92 | 46334.17 | 43030.51 | 39271.17 |
| Weighted Average Rate of Interest on Loan | 2.8589\% | 2.8605\% | 2.8320\% | 2.7727\% |
| Interest | 111.03 | 1325.40 | 1218.62 | 1088.86 |

## DEPRECIATION

38. Regulation 17 of the 2009 regulations provides for computation of depreciation in the following manner, namely:-
"17. (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.
$x X x X$
$x x x x$
(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."
39. In these calculations too, depreciation has been worked out on the basis of capital expenditure as on date of commercial operation
40. Details of the depreciation worked out are as under:-


## OPERATION \& MAINTENANCE EXPENSES

41. Clause ( g ) of regulation 19 of the 2009 regulations prescribes the norms for operation and maintenance expenses based on the type of substation and line. Norms prescribed in respect of the elements covered in the instant petition are as under:-

| Element | $\mathbf{2 0 0 9 - 1 0}$ | $\mathbf{2 0 1 0 - 1 1}$ | $\mathbf{2 0 1 1 - 1 2}$ | 2012-13 | 2013-14 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 400 kV D/C, twin conductor, <br> transmission line <br> (₹ lakh per km) | 0.627 | 0.663 | 0.701 | 0.741 | 0.783 |
| 400 kV S/C, twin conductor, <br> transmission line <br> (₹ lakh per km) | 0.358 | 0.378 | 0.400 | 0.423 | 0.447 |
| $765 \mathrm{kV} \mathrm{S/C}, \mathrm{quad}. \mathrm{Conductor}$, <br> transmission line <br> (₹ lakh per km) | 0.537 | 0.568 | 0.600 | 0.635 | 0.671 |
| 400 kV, bays (₹ lakh per bay) | 52.40 | 55.40 | 58.57 | 61.92 | 65.46 |

42. Based on the above norms, the petitioner has calculated the following operation and maintenance expenses which is allowed:-
(₹ in lakh)
Asset-1

| Element <br> (Date of commercial operation <br> $\mathbf{1 . 3 . 2 0 1 0}$ ) | 2009-10 <br> (Pro-rata for one <br> month) | 2010-11 <br> (Pro-rata for two months; <br> April - May, 2011) |
| :--- | :---: | :---: |
| $233.652 \mathrm{~km}, 765 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor T/Line | 10.46 | 22.12 |
| 2 nos. 400 kV bays | 8.73 | 18.47 |
| Total O\&M expenses | 19.19 | 40.59 |

Combined Asset-2
(₹ in lakh)

| $\|c\|$Element <br> (Notional date of commercial <br> operation: 1.6.2010) | 2010-11 (Pro-rata for one month, June, 2010) |
| :--- | :---: |
| $214.471 \mathrm{~km}(1.66+212.811), 400$ <br> kV S/C twin conductor, T/Line | 6.75 |
| $233.652 \mathrm{~km}, 765 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor T/Line (S/C on S/C <br> tower) | 11.06 |
| 4 nos. 400 kV bay | 18.47 |
| Total O\&M expenses of <br> combined Asset-2 | $\mathbf{3 6 . 2 8}$ |


| Element <br> (Notional date of commercial <br> operation: $\mathbf{1 . 7 . 2 0 1 0})$ 2010-11 (Pro-rata for two months; July-August, <br> 2010) <br> $212.811 \mathrm{~km}, 400 \mathrm{kV} \mathrm{D/C} twin$, <br> conductor, T/L 23.52 <br> $2.649 \mathrm{Km}, 400 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor, T/Line 0.17 <br> $233.652 \mathrm{~km}, 765 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor T/Line 22.12 <br> 6 nos. 400 kV bay 55.40 <br> Total O\&M expenses <br> (Combined Asset-3) $\mathbf{1 0 1 . 2 0}$ l |
| :--- | :---: |

Combined Asset-4
(₹ in lakh)

| Element <br> (Notional date of commercial <br> operation: 1.9.2010) | 2010-11 (Pro-rata for Six months; September, <br> 2010 to February, 2011) |
| :--- | :---: |
| $212.811 \mathrm{~km}, 400 \mathrm{kV} \mathrm{D/C} twin$, <br> conductor, T/L | 70.54 |
| $2.649 \mathrm{Km}, 400 \mathrm{kV} \mathrm{S/C} twin$, <br> conductor, T/Line | 0.50 |
| $233.652 \mathrm{~km}, 765 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor T/Line | 66.36 |
| 7 nos. 400 kV bay | 193.90 |
| Total O\&M expenses <br> (Combined Asset-4) | $\mathbf{3 3 1 . 3 0}$ |

## Combined Asset-5

(₹ in lakh)

| (Notional date of commercial <br> operation: 1.3.2011) | 2010-11 (Pro-rata <br> for one month; <br> March, 2011) | $\mathbf{2 0 1 1 - 1 2}$ | $\mathbf{2 0 1 2 - 1 3}$ | $\mathbf{2 0 1 3 - 1 4}$ |
| :--- | :---: | :---: | :---: | :---: |
| $441.285(228.474+212.811) \mathrm{km}$, <br> 400 kV D/C, twin conductor, T/L | 24.38 | 309.34 | 326.99 | 345.53 |
| $2.649 \mathrm{Km}, 400 \mathrm{kV} \mathrm{S/C} twin$, <br> conductor, T/Line | 0.08 | 1.06 | 1.12 | 1.18 |
| $233.652 \mathrm{~km}, 765 \mathrm{kV} \mathrm{S/C} quad$, <br> conductor T/Line | 11.06 | 140.19 | 148.37 | 156.78 |
| 11 nos. 400 kV bay | 50.78 | 644.27 | 681.12 | 720.06 |
| Total O\&M expenses <br> (Combined Asset-5) | $\mathbf{8 6 . 3 1}$ | $\mathbf{1 0 9 4 . 8 6}$ | $\mathbf{1 1 5 7 . 6 0}$ | $\mathbf{1 2 2 3 . 5 5}$ |

43. 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. 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 would 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 $50 \%$.
44. It is clarified that, if any application for revision in the norms for O\&M expenditure is filed in future, it will be dealt with in accordance with law.

## INTEREST ON WORKING CAPITAL

45. As per the 2009 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 regulations, receivables will be equivalent to two months of fixed cost. The petitioner has claimed receivables on the basis of 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months annual transmission charges.

## (ii) Maintenance spares

Regulation 18(1) (c) (ii) of the 2009 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 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

In these calculations, the SBI PLR as on 1.4.2009 and 1.4.2010 have been considered as the rate of interest on working capital for Asset-1 and Combined Asset-2 respectively, whereas in view of the CERC (Terms \& Conditions of Tariff) (Second Amendment) Regulations, 2011 dated 21.6.2011, interest rate of $11.00 \%$ (SBI Base Rate $7.50 \%$ as on 1.7.2010 plus 350 bps ) has been considered for calculating interest on working capital for Combined Asset-3, Combined Asset-4 and Combined Asset-5.
46. Necessary computations in support of interest on working capital are appended hereunder:-

|  | Asset 1 |  |  | Combined <br> Asset 2 | Combined <br> Asset 3 |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | 2009-10 <br> (Pro- <br> rata) | $\mathbf{2 0 1 0 - 1 1}$ | Combined <br> 2010-11 |  |  |
| $\mathbf{2 0 1 0 - 1 1}$ | $\mathbf{2 0 1 0 - 1 1}$ |  |  |  |  |
| Maintenance Spares | 34.54 | 36.53 | 65.31 | 91.08 | 99.39 |
| O \& M expenses | 19.19 | 20.29 | 36.28 | 50.60 | 55.22 |
| Receivables | 668.55 | 687.70 | 996.55 | 1137.13 | 1168.94 |
| Total | 722.28 | 744.52 | 1098.14 | 1278.82 | 1323.55 |
| Rate of interest | $12.25 \%$ | $12.25 \%$ | $\mathbf{1 1 . 7 5 \%}$ | $\mathbf{1 1 . 0 0 \%}$ | $\mathbf{1 1 . 0 0 \%}$ |
| Interest | $\mathbf{7 . 3 7}$ | $\mathbf{9 1 . 2 0}$ | $\mathbf{1 0 7 . 5 3}$ | $\mathbf{1 0 5 . 5 0}$ | $\mathbf{8 4 . 9 3}$ |

(₹ in lakh)

| For the specified period |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | Asset 1 |  | Combined <br> Asset 2 | Combined <br> Asset 3 | Combined <br> Asset 4 |
|  | March 2010 | April 2010 <br> to May 2010 | June 2010 | July 2010 to <br> August 2010 | September <br> 2010 to <br> February <br> 2011 |
| Maintenance Spares | 34.54 | 6.09 | 6.53 | 15.18 | 85.19 |
| O \& M expenses | 19.19 | 3.38 | 3.63 | 8.43 | 47.33 |
| Receivables | 668.55 | 114.62 | 99.65 | 189.52 | 1001.95 |
| Total | 722.28 | 124.09 | 109.81 | 213.14 | 1134.47 |
| Rate of interest | $12.25 \%$ | $12.25 \%$ | $11.75 \%$ | $11.00 \%$ | $11.00 \%$ |
| Interest | $\mathbf{7 . 3 7}$ | $\mathbf{1 5 . 2 0}$ | $\mathbf{1 0 . 7 5}$ | $\mathbf{1 7 . 5 8}$ | $\mathbf{7 2 . 8 0}$ |

(₹ in lakh)

| Combined Asset 5 |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 0 1 0 - 1 1}$ <br> (Pro-rata) | $\mathbf{2 0 1 1 - 1 2}$ |  | $\mathbf{2 0 1 2 - 1 3}$ |
| $\mathbf{2 0 1 3 - 1 4}$ |  |  |  |  |
| Maintenance Spares | 155.36 | 164.23 | 173.64 | 183.53 |
| O \& M expenses | 86.31 | 91.24 | 96.47 | 101.96 |
| Receivables | 1655.32 | 1710.37 | 1717.04 | 1709.38 |
| Total | 1896.99 | 1965.84 | 1987.15 | 1994.87 |
| Rate of interest | $11.00 \%$ | $11.00 \%$ | $11.00 \%$ | $11.00 \%$ |
| Interest | $\mathbf{1 7 . 3 9}$ | $\mathbf{2 1 6 . 2 4}$ | $\mathbf{2 1 8 . 5 9}$ | $\mathbf{2 1 9 . 4 4}$ |

## TRANSMISSION CHARGES

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

|  | Asset 1 |  |  | Combined | Combined | Combined |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { 2009-10 } \\ \text { (Pro-rata) } \end{gathered}$ | 2010-11 | $\begin{aligned} & \hline \text { April } 2010 \\ & \text { to May } \\ & 2010 \\ & \hline \end{aligned}$ | 2010-11 | 2010-11 | 2010-11 |
| Depreciation | 119.41 | 1489.23 | 248.21 | 1848.58 | 1887.47 | 1502.30 |
| Interest on Loan | 69.72 | 823.60 | 137.27 | 828.43 | 794.89 | 626.09 |
| Return on Equity | 118.58 | 1478.68 | 246.45 | 1835.38 | 1873.83 | 1491.46 |
| Interest on Working Capital | 7.37 | 91.20 | 15.20 | 107.53 | 105.50 | 84.93 |
| O \& M Expenses | 19.19 | 243.51 | 40.59 | 362.82 | 455.41 | 386.52 |
| Total | 334.27 | 4126.22 | 687.70 | 4982.74 | 5117.10 | 4091.29 |

(₹ in lakh)

|  | Asset 1 |  | Combined <br> Asset 2 | Combined <br> Asset 3 | Combined <br> Asset 4 |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 0 0 9 - 1 0}$ | April 2010 to <br> May 2010 | Jun 2010 | Jul 2010 <br> to Aug <br> 2010 | Sep 2010 <br> to Feb <br> 2011 |
| Depreciation | 119.41 | 248.21 | 184.86 | 314.58 | 1287.68 |
| Interest on Loan | 69.72 | 137.27 | 82.84 | 132.48 | 536.65 |
| Return on Equity | 118.58 | 246.45 | 183.54 | 312.31 | 1278.39 |
| Interest on Working Capital | 7.37 | 15.20 | 10.75 | 17.58 | 72.80 |
| O \& M Expenses | 19.19 | 40.59 | 36.28 | 101.20 | 331.30 |
| Total | $\mathbf{3 3 4 . 2 7}$ | $\mathbf{6 8 7 . 7 0}$ | $\mathbf{4 9 8 . 2 7}$ | $\mathbf{8 5 2 . 8 5}$ | $\mathbf{3 5 0 6 . 8 2}$ |

(₹ in lakh)

| Combined Asset 5 |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 0 1 0 - 1 1}$ <br> (Pro-rata) | $\mathbf{2 0 1 1 - 1 2}$ | $\mathbf{2 0 1 2 - 1 3}$ | $\mathbf{2 0 1 3 - 1 4}$ |
| Depreciation | 307.57 | 3826.78 | 3867.79 | 3876.29 |
| Interest on Loan | 111.03 | 1325.40 | 1218.62 | 1088.86 |
| Return on Equity | 305.36 | 3798.95 | 3839.68 | 3848.12 |
| Interest on Working Capital | 17.39 | 216.24 | 218.59 | 219.44 |
| O \& M Expenses | 86.31 | 1094.86 | 1157.60 | 1223.55 |
| Total | $\mathbf{8 2 7 . 6 6}$ | $\mathbf{1 0 2 6 2 . 2 4}$ | $\mathbf{1 0 3 0 2 . 2 7}$ | $\mathbf{1 0 2 5 6 . 2 5}$ |

## FILING FEE AND THE PUBLICATION EXPENSES

48. The petitioner has sought approval for the reimbursement of fee paid by it for filing the petition. In accordance with the Commission's decision in order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee from the beneficiaries.
49. Accordingly, expenses incurred by the petitioner on petition filing fees and publication of notices in connection with the present petition shall be directly recovered from the beneficiary on pro-rata basis.

## SERVICE TAX

50. The petitioner has made a specific prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if the exemption granted to it is withdrawn and transmission of
power is made a taxable service. We consider the prayer pre-mature and accordingly it is rejected.

## LICENCE FEE

48. The petitioner has further submitted that in O \& M norms for the period 2009-14, the cost associated with license fees had not been captured and therefore licence fee be allowed to be recovered separately from the respondents.
49. As regards the prayer for reimbursement of licence fee, it is clarified that the same shall be dealt with in accordance with our order dated 25.10.2011 in Petition No.21/2011 and 22/2011.

## SHARING OF TRANSMISSION CHARGES

50. The transmission charges allowed shall be recovered on monthly basis in accordance with Regulation 23 and shared by the beneficiaries in accordance with Regulation 33 of the 2009 regulations upto 30.6.2011. With effect from 1.7.2011, the billing collection and disbursement of the transmission charges shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010.
51. This order disposes of Petition No. 349/2010.
(M. Deena Dayalan) Member
(S. Jayaraman)

Member
(Dr. Pramod Deo) Chairperson



Order in Petition No. 349-2010

Annexure 2


| 4 | Bond XXVIII |  |
| :---: | :---: | :---: |
|  | Gross loan opening | 4000.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 4000.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 4000.00 |
|  | Average Loan | 4000.00 |
|  | Rate of Interest | 9.330\% |
|  | Interest | 373.20 |
|  | Rep Schedule | 12 Annual Installments from 15.12.2012 |
|  |  |  |
| 5 | IBRD IV (Asset-1) |  |
|  | Gross loan opening | 7263.30 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 7263.30 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 7263.30 |
|  | Average Loan | 7263.30 |
|  | Rate of Interest | 1.69\% |
|  | Interest | 122.75 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 6 | Bond XXIV |  |
|  | Gross loan opening | 300.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 300.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 25.00 |
|  | Net Loan-Closing | 275.00 |
|  | Average Loan | 287.50 |
|  | Rate of Interest | 9.95\% |
|  | Interest | 28.61 |
|  | Rep Schedule | 12 Annual instalments from 26.03.2011 |
|  |  |  |
| 7 | IBRD III (Asset-2) |  |
|  | Gross loan opening | 4711.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 4711.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 4711.00 |
|  | Average Loan | 4711.00 |
|  | Rate of Interest | 1.820\% |
|  | Interest | 85.74 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |
|  |  |  |


| $\mathbf{8}$ | IBRD IV ADDL (Asset-2) |  |
| :--- | :--- | :---: |
|  | Gross loan opening | $\mathbf{8 3 1 . 4 9}$ |
|  | Cumulative Repayment upto |  |
| DOCO/previous year |  |  |$\quad \mathbf{0 . 0 0} 10831.49$


\left.| CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN |  |
| :--- | :--- | :---: |
| (₹ in lakh) |  |$\right]$


|  |  |  |
| :---: | :---: | :---: |
| 4 | Bond XXVIII |  |
|  | Gross loan opening | 4000.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 4000.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 4000.00 |
|  | Average Loan | 4000.00 |
|  | Rate of Interest | 9.33\% |
|  | Interest | 373.20 |
|  | Rep Schedule | 12 Annual instalments from 15.12.2012 |
|  |  |  |
| 5 | IBRD IV (Asset-1) |  |
|  | Gross loan opening | 7263.30 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 7263.30 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 7263.30 |
|  | Average Loan | 7263.30 |
|  | Rate of Interest | 1.69\% |
|  | Interest | 122.75 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 6 | Bond XXIV |  |
|  | Gross loan opening | 300.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 300.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 25.00 |
|  | Net Loan-Closing | 275.00 |
|  | Average Loan | 287.50 |
|  | Rate of Interest | 9.95\% |
|  | Interest | 28.61 |
|  | Rep Schedule | 12 Annual instalments from 26.03.2011 |


|  |  |  |
| :--- | :--- | :---: |
| $\mathbf{7}$ | IBRD III (Asset-2) | $\mathbf{4 7 1 1 . 0 0}$ |
|  | Gross loan opening | $\mathbf{0 . 0 0}$ |
|  | Cumulative Repayment upto <br> DOCO/previous year | 4711.00 |
|  | Net Loan-Opening | 0.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 4711.00 |
|  | Net Loan-Closing | 4711.00 |
|  | Average Loan | $1.82 \%$ |
|  | Rate of Interest | 85.74 |
|  | Interest | $\mathbf{8 0}$ |
|  | Rep Schedule | $\mathbf{8 3 1 . 4 9}$ |
|  |  | $\mathbf{0 . 0 0}$ |
| $\mathbf{8}$ | IBRD IV ADDL (Asset-2) | 831.49 |
|  | Gross loan opening | 0.00 |
|  | Cumulative Repayment upto | 0.00 |
|  | DOCO/previous year |  |


| 10 | IBRD III (Asset-3) |  |
| :---: | :---: | :---: |
|  | Gross loan opening | 472.60 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 472.60 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 472.60 |
|  | Average Loan | 472.60 |
|  | Rate of Interest | 1.82\% |
|  | Interest | 8.60 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |
|  |  |  |
| 11 | IBRD IV ADDL (Asset-3) |  |
|  | Gross loan opening | 2097.87 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 2097.87 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 2097.87 |
|  | Average Loan | 2097.87 |
|  | Rate of Interest | 1.63\% |
|  | Interest | 34.20 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |
|  |  |  |
| 12 | IBRD IV (Asset-3) |  |
|  | Gross loan opening | 1181.50 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 1181.50 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 1181.50 |
|  | Average Loan | 1181.50 |
|  | Rate of Interest | 1.86\% |
|  | Interest | 21.98 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
|  | Total Loan |  |
|  | Gross loan opening | 32421.74 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 32421.74 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 25.00 |
|  | Net Loan-Closing | 32396.74 |
|  | Average Loan | 32409.24 |
|  | Rate of Interest | 3.3271\% |
|  | Interest | 1078.30 |


| CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN |  |
| :--- | :--- | :---: |
| (₹ in lakh) |  |$|$


| 4 | Bond XXVIII |  |
| :---: | :---: | :---: |
|  | Gross loan opening | 4000.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 4000.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 4000.00 |
|  | Average Loan | 4000.00 |
|  | Rate of Interest | 9.330\% |
|  | Interest | 373.20 |
|  | Rep Schedule | 12 Annual instalments from 15.12.2012 |
|  |  |  |
| 5 | IBRD IV (Asset-1) |  |
|  | Gross loan opening | 7263.30 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 7263.30 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 7263.30 |
|  | Average Loan | 7263.30 |
|  | Rate of Interest | 1.69\% |
|  | Interest | 122.75 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 6 | Bond XXIV |  |
|  | Gross loan opening | 300.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 300.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 25.00 |
|  | Net Loan-Closing | 275.00 |
|  | Average Loan | 287.50 |
|  | Rate of Interest | 9.95\% |
|  | Interest | 28.61 |
|  | Rep Schedule | 12 Annual instalments from 26.03.2011 |
|  |  |  |
| 7 | IBRD III (Asset-2) |  |
|  | Gross loan opening | 4711.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 4711.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 4711.00 |
|  | Average Loan | 4711.00 |
|  | Rate of Interest | 1.820\% |
|  | Interest | 85.74 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |


|  |  |  |
| :---: | :---: | :---: |
| 8 | IBRD IV ADDL (Asset-2) |  |
|  | Gross loan opening | 831.49 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 831.49 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 831.49 |
|  | Average Loan | 831.49 |
|  | Rate of Interest | 1.63\% |
|  | Interest | 13.55 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |
|  |  |  |
| 9 | IBRD IV (Asset-2) |  |
|  | Gross loan opening | 3768.80 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 3768.80 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 3768.80 |
|  | Average Loan | 3768.80 |
|  | Rate of Interest | 1.86\% |
|  | Interest | 70.10 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 10 | IBRD III (Asset-3) |  |
|  | Gross loan opening | 472.60 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 472.60 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 472.60 |
|  | Average Loan | 472.60 |
|  | Rate of Interest | 1.82\% |
|  | Interest | 8.60 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |
|  |  |  |


| 11 | IBRD IV ADDL (Asset-3) |  |
| :---: | :---: | :---: |
|  | Gross loan opening | 2097.87 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 2097.87 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 2097.87 |
|  | Average Loan | 2097.87 |
|  | Rate of Interest | 1.63\% |
|  | Interest | 34.20 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |
|  |  |  |
| 12 | IBRD IV (Asset-3) |  |
|  | Gross loan opening | 1181.50 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 1181.50 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 1181.50 |
|  | Average Loan | 1181.50 |
|  | Rate of Interest | 1.86\% |
|  | Interest | 21.98 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 13 | IBRD III (Asset-4) |  |
|  | Gross loan opening | 237.20 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 237.20 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 237.20 |
|  | Average Loan | 237.20 |
|  | Rate of Interest | 1.82\% |
|  | Interest | 4.32 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |
|  |  |  |
| 14 | IBRD IV ADDL (Asset-4) |  |
|  | Gross loan opening | 158.45 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 158.45 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 158.45 |
|  | Average Loan | 158.45 |
|  | Rate of Interest | 1.96\% |
|  | Interest | 3.11 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |


|  |  |  |
| :---: | :---: | :---: |
| 15 | IBRD IV (Asset-4) |  |
|  | Gross loan opening | 189.76 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 189.76 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 189.76 |
|  | Average Loan | 189.76 |
|  | Rate of Interest | 1.86\% |
|  | Interest | 3.53 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |
|  |  |  |
| 16 |  |  |
|  | Gross loan opening | 0.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 0.00 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 0.00 |
|  | Net Loan-Closing | 0.00 |
|  | Average Loan | 0.00 |
|  | Rate of Interest |  |
|  | Interest | 0.00 |
|  | Rep Schedule |  |
|  |  |  |
|  | Total Loan |  |
|  | Gross loan opening | 33007.15 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 |
|  | Net Loan-Opening | 33007.15 |
|  | Additions during the year | 0.00 |
|  | Repayment during the year | 25.00 |
|  | Net Loan-Closing | 32982.15 |
|  | Average Loan | 32994.65 |
|  | Rate of Interest | 3.3013\% |
|  | Interest | 1089.25 |

Annexure 5

| CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | ( $₹$ in lakh) |
|  | Details of Loan | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| 1 | IBRD III (Asset-1) |  |  |  |  |
|  | Gross loan opening | 796.62 | 796.62 | 796.62 | 796.62 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 38.77 | 79.22 |
|  | Net Loan-Opening | 796.62 | 796.62 | 757.85 | 717.40 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 38.77 | 40.46 | 42.21 |
|  | Net Loan-Closing | 796.62 | 757.85 | 717.40 | 675.19 |
|  | Average Loan | 796.62 | 777.24 | 737.63 | 696.29 |
|  | Rate of Interest | 2.04\% | 2.04\% | 2.04\% | 2.04\% |
|  | Interest | 16.25 | 15.86 | 15.05 | 14.20 |
|  | Rep Schedule | 30 half-yearly | allments from 15. | 9.2011 |  |
|  |  |  |  |  |  |
| 2 | IBRD IV ADDL (Asset-1) |  |  |  |  |
|  | Gross loan opening | 4498.56 | 4498.56 | 4498.56 | 4498.56 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 76.03 |
|  | Net Loan-Opening | 4498.56 | 4498.56 | 4498.56 | 4422.53 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 76.03 | 153.40 |
|  | Net Loan-Closing | 4498.56 | 4498.56 | 4422.53 | 4269.13 |
|  | Average Loan | 4498.56 | 4498.56 | 4460.55 | 4345.83 |
|  | Rate of Interest | 1.63\% | 1.63\% | 1.63\% | 1.63\% |
|  | Interest | 73.33 | 73.33 | 72.71 | 70.84 |
|  | Rep Schedule | 52 half-yearly | allments from 01. | 2.2013 |  |
|  |  |  |  |  |  |
| 3 | Bond XXIX |  |  |  |  |
|  | Gross loan opening | 2500.00 | 2500.00 | 2500.00 | 2500.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 208.33 |
|  | Net Loan-Opening | 2500.00 | 2500.00 | 2500.00 | 2291.67 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 208.33 | 208.33 |
|  | Net Loan-Closing | 2500.00 | 2500.00 | 2291.67 | 2083.33 |
|  | Average Loan | 2500.00 | 2500.00 | 2395.83 | 2187.50 |
|  | Rate of Interest | 9.20\% | 9.20\% | 9.20\% | 9.20\% |
|  | Interest | 230.00 | 230.00 | 220.42 | 201.25 |
|  | Rep Schedule | 12 Annual inst | ents from 12.3.20 |  |  |


| 4 | Bond XXVIII |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross loan opening | 4000.00 | 4000.00 | 4000.00 | 4000.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 333.33 |
|  | Net Loan-Opening | 4000.00 | 4000.00 | 4000.00 | 3666.67 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 333.33 | 333.33 |
|  | Net Loan-Closing | 4000.00 | 4000.00 | 3666.67 | 3333.33 |
|  | Average Loan | 4000.00 | 4000.00 | 3833.33 | 3500.00 |
|  | Rate of Interest | 9.33\% | 9.330\% | 9.330\% | 9.330\% |
|  | Interest | 373.20 | 373.20 | 357.65 | 326.55 |
|  | Rep Schedule | 12 Annual ins | from 15.12. |  |  |
|  |  |  |  |  |  |
| 5 | IBRD IV (Asset-1) |  |  |  |  |
|  | Gross loan opening | 7263.30 | 7263.30 | 7263.30 | 7263.30 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Net Loan-Opening | 7263.30 | 7263.30 | 7263.30 | 7263.30 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 0.00 | 160.76 |
|  | Net Loan-Closing | 7263.30 | 7263.30 | 7263.30 | 7102.54 |
|  | Average Loan | 7263.30 | 7263.30 | 7263.30 | 7182.92 |
|  | Rate of Interest | 1.69\% | 1.69\% | 1.69\% | 1.69\% |
|  | Interest | 122.75 | 122.75 | 122.75 | 121.39 |
|  | Rep Schedule | 30 half-yearly | nts from 15 | 2013 |  |
|  |  |  |  |  |  |
| 6 | Bond XXIV |  |  |  |  |
|  | Gross loan opening | 300.00 | 300.00 | 300.00 | 300.00 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 25.00 | 50.00 | 75.00 |
|  | Net Loan-Opening | 300.00 | 275.00 | 250.00 | 225.00 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 25.00 | 25.00 | 25.00 | 25.00 |
|  | Net Loan-Closing | 275.00 | 250.00 | 225.00 | 200.00 |
|  | Average Loan | 287.50 | 262.50 | 237.50 | 212.50 |
|  | Rate of Interest | 9.95\% | 9.95\% | 9.95\% | 9.95\% |
|  | Interest | 28.61 | 26.12 | 23.63 | 21.14 |
|  | Rep Schedule | 12 Annual instalments from 26.03.2011 |  |  |  |
|  |  |  |  |  |  |


| 7 | IBRD III (Asset-2) |  |  | 4711.00 | 4711.00 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross loan opening | 4711.00 | 4711.00 |  |  |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 229.25 | 468.51 |
|  | Net Loan-Opening | 4711.00 | 4711.00 | 4481.75 | 4242.49 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 229.25 | 239.26 | 249.62 |
|  | Net Loan-Closing | 4711.00 | 4481.75 | 4242.49 | 3992.87 |
|  | Average Loan | 4711.00 | 4596.38 | 4362.12 | 4117.68 |
|  | Rate of Interest | 1.82\% | 1.820\% | 1.820\% | 1.820\% |
|  | Interest | 85.74 | 83.65 | 79.39 | 74.94 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |  |  |  |
|  |  |  |  |  |  |
| 8 | IBRD IV ADDL (Asset-2) |  |  |  |  |
|  | Gross loan opening | 831.49 | 831.49 | 831.49 | 831.49 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 14.05 |
|  | Net Loan-Opening | 831.49 | 831.49 | 831.49 | 817.44 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 14.05 | 28.35 |
|  | Net Loan-Closing | 831.49 | 831.49 | 817.44 | 789.09 |
|  | Average Loan | 831.49 | 831.49 | 824.47 | 803.26 |
|  | Rate of Interest | 1.63\% | 1.63\% | 1.63\% | 1.63\% |
|  | Interest | 13.55 | 13.55 | 13.44 | 13.09 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |  |  |  |
|  |  |  |  |  |  |
| 9 | IBRD IV (Asset-2) |  |  |  |  |
|  | Gross loan opening | 3768.80 | 3768.80 | 3768.80 | 3768.80 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Net Loan-Opening | 3768.80 | 3768.80 | 3768.80 | 3768.80 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 0.00 | 83.42 |
|  | Net Loan-Closing | 3768.80 | 3768.80 | 3768.80 | 3685.38 |
|  | Average Loan | 3768.80 | 3768.80 | 3768.80 | 3727.09 |
|  | Rate of Interest | 1.86\% | 1.86\% | 1.86\% | 1.86\% |
|  | Interest | 70.10 | 70.10 | 70.10 | 69.32 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |  |  |  |
|  |  |  |  |  |  |


| 10 | IBRD III (Asset-3) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross loan opening | 472.60 | 472.60 | 472.60 | 472.60 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 23.00 | 47.00 |
|  | Net Loan-Opening | 472.60 | 472.60 | 449.60 | 425.60 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 23.00 | 24.00 | 25.04 |
|  | Net Loan-Closing | 472.60 | 449.60 | 425.60 | 400.56 |
|  | Average Loan | 472.60 | 461.10 | 437.60 | 413.08 |
|  | Rate of Interest | 1.82\% | 1.82\% | 1.82\% | 1.82\% |
|  | Interest | 8.60 | 8.39 | 7.96 | 7.52 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |  |  |  |
|  |  |  |  |  |  |
| 11 | IBRD IV ADDL (Asset-3) |  |  |  |  |
|  | Gross loan opening | 2097.87 | 2097.87 | 2097.87 | 2097.87 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 35.45 |
|  | Net Loan-Opening | 2097.87 | 2097.87 | 2097.87 | 2062.42 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 35.45 | 71.54 |
|  | Net Loan-Closing | 2097.87 | 2097.87 | 2062.42 | 1990.88 |
|  | Average Loan | 2097.87 | 2097.87 | 2080.14 | 2026.65 |
|  | Rate of Interest | 1.63\% | 1.63\% | 1.63\% | 1.63\% |
|  | Interest | 34.20 | 34.20 | 33.91 | 33.03 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |  |  |  |
|  |  |  |  |  |  |
| 12 | IBRD IV (Asset-3) |  |  |  |  |
|  | Gross loan opening | 1181.50 | 1181.50 | 1181.50 | 1181.50 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Net Loan-Opening | 1181.50 | 1181.50 | 1181.50 | 1181.50 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 0.00 | 26.15 |
|  | Net Loan-Closing | 1181.50 | 1181.50 | 1181.50 | 1155.35 |
|  | Average Loan | 1181.50 | 1181.50 | 1181.50 | 1168.42 |
|  | Rate of Interest | 1.86\% | 1.86\% | 1.86\% | 1.86\% |
|  | Interest | 21.98 | 21.98 | 21.98 | 21.73 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |  |  |  |
|  |  |  |  |  |  |


| 13 | IBRD III (Asset-4) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross loan opening | 237.20 | 237.20 | 237.20 | 237.20 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 11.54 | 23.59 |
|  | Net Loan-Opening | 237.20 | 237.20 | 225.66 | 213.61 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 11.54 | 12.05 | 12.57 |
|  | Net Loan-Closing | 237.20 | 225.66 | 213.61 | 201.04 |
|  | Average Loan | 237.20 | 231.43 | 219.63 | 207.33 |
|  | Rate of Interest | 1.82\% | 1.82\% | 1.82\% | 1.82\% |
|  | Interest | 4.32 | 4.21 | 4.00 | 3.77 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |  |  |  |
|  |  |  |  |  |  |
| 14 | IBRD IV ADDL (Asset-4) |  |  |  |  |
|  | Gross loan opening | 158.45 | 158.45 | 158.45 | 158.45 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 2.68 |
|  | Net Loan-Opening | 158.45 | 158.45 | 158.45 | 155.77 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 2.68 | 5.40 |
|  | Net Loan-Closing | 158.45 | 158.45 | 155.77 | 150.37 |
|  | Average Loan | 158.45 | 158.45 | 157.11 | 153.07 |
|  | Rate of Interest | 1.96\% | 1.96\% | 1.96\% | 1.96\% |
|  | Interest | 3.11 | 3.11 | 3.08 | 3.00 |
|  | Rep Schedule | 52 half-yearly installments from 01.02.2013 |  |  |  |
|  |  |  |  |  |  |
| 15 | IBRD IV (Asset-4) |  |  |  |  |
|  | Gross loan opening | 189.76 | 189.76 | 189.76 | 189.76 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Net Loan-Opening | 189.76 | 189.76 | 189.76 | 189.76 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 0.00 | 4.20 |
|  | Net Loan-Closing | 189.76 | 189.76 | 189.76 | 185.56 |
|  | Average Loan | 189.76 | 189.76 | 189.76 | 187.66 |
|  | Rate of Interest | 1.86\% | 1.86\% | 1.86\% | 1.86\% |
|  | Interest | 3.53 | 3.53 | 3.53 | 3.49 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |  |  |  |
|  |  |  |  |  |  |


| 16 | IBRD III (Asset-5) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross loan opening | 3913.13 | 3913.13 | 3913.13 | 3913.13 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 190.42 | 389.16 |
|  | Net Loan-Opening | 3913.13 | 3913.13 | 3722.71 | 3523.97 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 190.42 | 198.74 | 207.35 |
|  | Net Loan-Closing | 3913.13 | 3722.71 | 3523.97 | 3316.63 |
|  | Average Loan | 3913.13 | 3817.92 | 3623.34 | 3420.30 |
|  | Rate of Interest | 1.82\% | 1.82\% | 1.82\% | 1.82\% |
|  | Interest | 71.22 | 69.49 | 65.94 | 62.25 |
|  | Rep Schedule | 30 half-yearly installments from 15.09.2011 |  |  |  |
|  |  |  |  |  |  |
| 17 | IBRD IV (Asset-5) |  |  |  |  |
|  | Gross loan opening | 10540.80 | 10540.80 | 10540.80 | 10540.80 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Net Loan-Opening | 10540.80 | 10540.80 | 10540.80 | 10540.80 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 0.00 | 0.00 | 0.00 | 233.30 |
|  | Net Loan-Closing | 10540.80 | 10540.80 | 10540.80 | 10307.50 |
|  | Average Loan | 10540.80 | 10540.80 | 10540.80 | 10424.15 |
|  | Rate of Interest | 1.86\% | 1.86\% | 1.86\% | 1.86\% |
|  | Interest | 196.06 | 196.06 | 196.06 | 193.89 |
|  | Rep Schedule | 30 half-yearly installments from 15.11.2013 |  |  |  |
|  |  |  |  |  |  |
|  | Total Loan |  |  |  |  |
|  | Gross loan opening | 47461.09 | 47461.09 | 47461.09 | 47461.09 |
|  | Cumulative Repayment upto DOCO/previous year | 0.00 | 25.00 | 542.98 | 1752.36 |
|  | Net Loan-Opening | 47461.09 | 47436.09 | 46918.11 | 45708.73 |
|  | Additions during the year | 0.00 | 0.00 | 0.00 | 0.00 |
|  | Repayment during the year | 25.00 | 517.98 | 1209.38 | 1869.99 |
|  | Net Loan-Closing | 47436.09 | 46918.11 | 45708.73 | 43838.74 |
|  | Average Loan | 47448.59 | 47177.10 | 46313.42 | 44773.74 |
|  | Rate of Interest | 2.8589\% | 2.8605\% | 2.8320\% | 2.7727\% |
|  | Interest | 1356.53 | 1349.51 | 1311.59 | 1241.42 |


[^0]:    *IDC \& IEDC ** Initial spares adjustment

