

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 244/TT/2014**

**Coram:**

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

**Date of Hearing : 14.03.2016  
Date of Order : 26.04.2016**

**In the matter of:**

Determination of transmission tariff of **Asset I:** 4 x 500 MVA, 765/400 kV ICT-2 with one spare unit at Jabalpur 765/400 KV PS, **Asset II:** 3 x 80 MVAR, 765 KV Line Reactor to be used as Bus Reactor at Jabalpur PS for Dharamjaygarh ckt.#1, **Asset III:** 765 KV, 3 x 110 MVAR, Bus Reactor-1 at Dharamjaygarh Sub-station along with associated bays and LILO of 765 KV S/C Ranchi-WR Pooling Station (near Sipat) transmission line at Dharamjaygarh, **Asset-IV:** 765, 3 x 110 MVAR Bus Reactor-2 at Dharamjaygarh Sub-station along with associated bays, **Asset V:** 765 KV D/C Jharsuguda Pooling Station-Dharamjaygarh (near Korba) Line under "Transmission System for Phase-I Generation Projects in Orissa (Part-B)" in Western Region for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

**And in the matter of:**

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

.....**Petitioner**

**Versus**

1. Madhya Pradesh Power Management Company Ltd.  
Shakti Bhawan, Rampur, Jabalpur-482008
2. Maharashtra State Electricity Distribution Co. Ltd.  
Prakashgad, 4<sup>th</sup> Floor, Andheri(East), Mumbai-400052



3. Gujarat Urja Vikas Nigam Ltd.  
Sardar Patel Vidyut Bhawan,  
Race Course Road  
Vadodara- 390007
4. Electricity Department  
Government of Goa,  
Vidyut Bhawan, Panaji- 403001
5. Electricity Department  
Administration of Daman & Diu,  
Daman- 396210
6. Electricity Department  
Administration of Dadar Nagar Haveli,  
U.T., Silvassa- 396230
7. Chhattisgarh State Electricity Board  
P.O Sunder Nagar, Dangania, Raipur  
Chhatisgaarh-492013
8. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd.  
3/54, Press Complex, Agra-Bombay Road  
Indore-452008...

.....Respondents

The following were present:-

For Petitioner: Shri Piyush Awasthi, PGCIL  
Shri. Mohd. Mohsin, PGCIL  
Shri Pankaj Sharma, PGCIL  
Shri A. M. Pavgi, PGCIL  
Shri P.V. Nath, PGCIL  
Smt. Archana Kumari, PGCIL  
Shri Amit Yadav, PGCIL  
Shri S.S. Raju, PGCIL  
Shri Rakesh Prasad, PGCIL  
Shri Jasbir Singh, PGCIL  
Shri Aryaman Saxena, PGCIL  
Shri M.M. Mondal, PGCIL

For Respondent: None



## ORDER

The present petition has been preferred by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of transmission tariff under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for 4 x 500 MVA, 765/400 KV ICT-2 with one spare unit at Jabalpur 765/400 KV PS (short as “**Asset I**”), 3 x 80 MVAR, 765 KV Line Reactor to be used as Bus Reactor at Jabalpur PS for Dharamjaygarh ckt.#1 (short as “**Asset II**”), 765 KV, 3 x 110 MVAR, Bus Reactor-1 at Dharamjaygarh Sub-station along with associated bays and LILO of 765 KV S/C Ranchi-WR Pooling Station (near Sipat) transmission line at Dharamjaygarh (short as “**Asset III.**”), 765, 3 x 110 MVAR Bus Reactor-2 at Dharamjaygarh Sub-station along with associated bays (short as “**Asset-IV**”), 765 KV D/C Jharsuguda Pooling Station-Dharamjaygarh (near Korba) (short as “**Asset V**”) Line under “Transmission System for Phase-I Generation Projects in Orissa (Part-B)” in Western Region(hereinafter referred as “transmission asset”) based on actual capital expenditure from COD to 31.3.2014.

2. The respondents are distribution licensees or electricity departments or power procurement companies of States, who are procuring transmission service from the petitioner, mainly beneficiaries of Western Region.

3. The petitioner has served the petition on the respondents and notice of this application has been published in the newspaper in accordance with the

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Section 64 of Electricity Act, 2003 ("the Act"). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

4. The brief facts of the case are as follows:-

(a) The investment approval for the project was accorded by Board of Directors of the petitioner company vide its memorandum no. C/CP/Orissa Ph-I IPPs (Part-B) dated 15.12.2010 at an estimated cost of ₹274319 lakh including IDC of ₹18092 lakh. Subsequently, the approval was revised vide memorandum no. C/CP/RCE- Orissa Ph-I IPPs (Part-B) dated 11.3.2016 at an estimated cost of ₹338471 lakh including IDC of ₹32182 lakh.

(b) The scope of work covered under the project is as follows:-

**Transmission line**

- 765 kV D/C Dharamjaygarh-Jabalpur Pooling Station line.
- 765 kV D/C Jharsuguda Pooling Station-Dharamjaygarh line.
- LILO of 765 kV S/C Ranchi-WR Pooling near Sipat line at Dharamjaygarh.
- 400 kV D/C (Quad) Jabalpur Pooling Station-Jabalpur line.

**Substations:**

- Jabalpur PS 765/400 kV new Sub-station.
- Dharamjaygarh 765 kV new Sub-station.
- Extension of 400 kV Jabalpur Sub-station.

5. The petitioner has claimed the following transmission charges vide affidavit dated 12.4.2016:-



(₹ in lakh)

Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	267.83	314.04	322.28	328.94	328.94
Interest on Loan	292.03	322.69	306.92	287.15	257.95
Return on equity	298.42	351.60	360.82	368.29	368.29
Interest on Working Capital	27.75	31.01	31.32	31.48	31.10
O & M Expenses	144.72	149.52	154.49	159.62	164.91
<b>Total</b>	<b>1030.75</b>	<b>1168.86</b>	<b>1175.83</b>	<b>1175.48</b>	<b>1151.19</b>

(₹ in lakh)

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	98.88	111.44	118.68	121.34	121.34
Interest on Loan	106.00	111.89	110.68	103.63	93.16
Return on equity	110.17	124.76	132.87	135.85	135.85
Interest on Working Capital	11.92	12.83	13.32	13.45	13.38
O & M Expenses	84.42	87.22	90.12	93.11	96.20
<b>Total</b>	<b>411.39</b>	<b>448.14</b>	<b>465.67</b>	<b>467.38</b>	<b>459.93</b>

(₹ in lakh)

Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	620.76	754.33	833.43	875.38	875.38
Interest on Loan	704.61	825.14	878.23	873.56	803.82
Return on equity	843.35	1019.85	1128.39	1186.95	1186.95
Interest on Working Capital	64.21	74.60	80.63	83.34	82.26
O & M Expenses	258.76	267.35	276.23	285.40	294.87
<b>Total</b>	<b>2491.69</b>	<b>2941.27</b>	<b>3196.91</b>	<b>3304.63</b>	<b>3243.28</b>

(₹ in lakh)

Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	93.19	114.27	128.43	132.90	132.90
Interest on Loan	97.76	114.11	121.30	115.90	104.72
Return on equity	105.19	130.96	147.90	153.16	153.16
Interest on Working Capital	11.26	13.09	14.13	14.40	14.31
O & M Expenses	80.43	87.22	90.12	93.11	96.20
<b>Total</b>	<b>387.83</b>	<b>459.65</b>	<b>501.88</b>	<b>509.47</b>	<b>501.29</b>



(₹ in lakh)

Particulars (Asset-V a)	2014-15 (pro-rata)
Depreciation	17.84
Interest on Loan	17.67
Return on equity	20.09
Interest on Working Capital	1.36
O & M Expenses	1.48
<b>Total</b>	<b>58.43</b>

(₹ in lakh)

Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	2690.07	4189.84	4313.91	4379.55	4379.55
Interest on Loan	2507.56	3741.66	3661.47	3441.09	3084.02
Return on equity	3025.71	4736.96	4878.73	4953.68	4953.68
Interest on Working Capital	207.66	319.95	325.16	324.30	317.09
O & M Expenses	332.51	513.20	530.19	547.84	566.04
<b>Total</b>	<b>8763.51</b>	<b>13501.61</b>	<b>13709.46</b>	<b>13646.46</b>	<b>13300.38</b>

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

(₹ in lakh)

Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	21.71	22.43	23.17	23.94	24.74
O & M expenses	12.06	12.46	12.87	13.30	13.74
Receivables	171.79	194.81	195.97	195.91	191.87
Total	205.56	229.70	232.01	233.15	230.35
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>27.75</b>	<b>31.01</b>	<b>31.32</b>	<b>31.48</b>	<b>31.10</b>

(₹ in lakh)

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.66	13.08	13.52	13.97	14.43
O & M expenses	7.04	7.27	7.51	7.76	8.02
Receivables	68.57	74.69	77.61	77.90	76.66
Total	88.27	95.04	98.64	99.63	99.11
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>11.92</b>	<b>12.83</b>	<b>13.32</b>	<b>13.45</b>	<b>13.38</b>



(₹ in lakh)

Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	38.81	40.10	41.43	42.81	44.23
O & M expenses	21.56	22.28	23.02	23.78	24.57
Receivables	415.28	490.21	532.82	550.77	540.55
Total	475.65	552.59	597.27	617.36	609.35
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>64.21</b>	<b>74.60</b>	<b>80.63</b>	<b>83.34</b>	<b>82.26</b>

(₹ in lakh)

Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.66	13.08	13.52	13.97	14.43
O & M expenses	7.04	7.27	7.51	7.76	8.02
Receivables	67.84	76.61	83.65	84.91	83.55
Total	87.54	96.96	104.68	106.64	106.00
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>11.26</b>	<b>13.09</b>	<b>14.13</b>	<b>14.40</b>	<b>14.31</b>

(₹ in lakh)

Particulars (Asset-V a)	2014-15 (pro-rata)
Maintenance Spares	41.30
O & M expenses	22.95
Receivables	1812.46
Total	1876.71
Rate of Interest (%)	13.50%
<b>Interest</b>	<b>1.36</b>

(₹ in lakh)

Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	74.51	76.98	79.53	82.18	84.91
O & M expenses	41.40	42.77	44.18	45.65	47.17
Receivables	2182.07	2250.27	2284.91	2274.41	2216.73
Total	2297.98	2370.02	2408.62	2402.24	2348.81
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>207.66</b>	<b>319.95</b>	<b>325.16</b>	<b>324.30</b>	<b>317.09</b>

### **Commercial Operation Date (COD)**

7. The petitioner has claimed the date of the commercial operation for Assets-I, II, III, IV, Va and Vb as 1.4.2014, 1.4.2014, 1.4.2014, 18.4.2014, 30.7.2014 and



31.7.2014 respectively. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-

**“4. Date of Commercial Operation:** The date of commercial operation of a generating station or unit or block thereof or a transmission system or element thereof shall be determined as under:

xxx

(3) Date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:

xxx”

8. The petitioner has submitted the approval of CEA for energisation of the Asset-I, Asset-II and Asset-III in accordance with Regulation 43 of CEA (Measures relating to Safety and Electric Supply), Regulations, 2010. The petitioner has also submitted RLDC certificate issued by WRLDC, POSOCO vide letter dated 12.4.2016 in support of the claim of commercial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations indicating completion of successful trial operation for Asset-IV, Asset-Va and Asset-Vb. The petitioner has not submitted the RLDC certificate in case of Assets-I, II and III, though they were commissioned on 1.4.2014. As Assets-I, II and III were commissioned on 1.4.2014, 2014 Tariff Regulations are applicable in case of these assets. As such, it is mandatory for the petitioner to submit a certificate from the Regional Load Despatch Centre as provided under Regulation 5(2) of the 2014 Tariff Regulations. The date of commercial operation of Assets-I, II and III is provisionally approved as 1.4.2014 and the petitioner is directed to submit





the certificate issued by Regional Load Despatch Centre as provided under Regulation 5(2) of the 2014 Tariff Regulations at the time of truing up.

9. Accordingly, the commercial operation date of the transmission asset has been considered as under:-

- a) The COD of the Asset-I, Asset-II and Asset-III have been provisionally considered as 1.4.2014;
- b) The COD of Asset-IV is declared as 18.4.2014;
- c) The COD of Asset-Va and Asset-Vb is declared as 30.7.2014 and 31.7.2014 respectively. The petitioner has combined Asset-Va with Asset-Vb w.e.f. 31.7.2014 i.e. the COD of Asset-Vb.

10. The petitioner submitted that Asset-V has been split into two parts for the tariff purpose based on the date of commissioning i.e. Asset Va on 30.7.2014 and Asset-Vb on 31.7.2014. It is observed that the petitioner has not placed any documents on record to show that the splitting of asset has been discussed with the beneficiaries and that the beneficiaries have been apprised about the segregated tariff of the assets. We are of the considered view that the petitioner should notify the beneficiaries about such changes. The splitting of the instant asset on the basis of date of commercial operation is allowed in the instant case, however, the petitioner is directed to follow a practice to inform the beneficiaries about such splitting of assets.

### **Capital Cost**



11. The petitioner has submitted revised the capital cost as on COD vide affidavit dated 12.4.2016 along with the revised tariff forms. The petitioner has also submitted the Auditor's Certificate certifying the capital cost claimed.

12. Regulation 9 (1), 9(2) and 10 (1) of the 2014 Tariff Regulations with regard to capital cost of the project provides as follows:-

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

(2) The Capital Cost of a new project shall include the following:

- a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- b) Interest during construction and financing charges, on the loans (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 funds deployed;
- c) Increase in cost in contract packages as approved by the Commission;
- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

**“10. Prudence Check of Capital Expenditure:** The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

(1) In case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Commission from time to time: Provided that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff.”



### **Time Over-run**

13. As per the investment approval, the commissioning schedule of the project was 36 months from the date of investment approval. The investment approval was accorded on 15.12.2010 and the schedule date of commercial operation was 15.12.2013. The COD for Asset-I, II, III, IV, Va and Vb is 1.4.2014, 1.4.2014, 1.4.2014, 18.4.2014, 30.7.2014 and 31.7.2014 respectively, therefore, there is time over-run of 3 months and 17 days in case of Asset-I, Asset-II and Asset-III. There is time over-run of 4 months and 4 days in case of Asset-IV. Further, there is time over-run of 7 months and 16 days in case of Asset-Va and 7 months and 17 days in case of Asset-Vb. The reasons submitted by the petitioner for delay have been analyzed as set forth in subsequent paragraphs.

### **Asset-I**

#### **Delay in delivery of consignments**

14. The prime reason for delay for Asset-I is due to withholding of the Consignments with heavy loads at mid-way till completion of the survey. The chronology of events submitted by the petitioner is as below:-

(a) ICTs were dispatched in the month of August, 2013 from Vadodara.

(b) As per directive of Ministry of Road transport & Highways, survey of several structures like bridges, tunnels etc. on national Highway was going on to ascertain load carrying capacity. Consignments with heavy loads were with held mid way till completion of the survey.



(c) Authorities refused to allow the movement of consignment (ICTs) via Karjan, therefore the bank had to be diverted to an alternate route via Vadodara-Dahod-Jhabua-Indore-Bhopal-Jabalpur.

(d) After considerable travel on this route i.e. up to Dahod, it was learnt that the road ahead has got damaged due to heavy rain. Hence, in the month of October, 2013, ICT bank again came back to the works in Vadodara.

(e) Meanwhile clearance for the movement of heavy vehicle was granted by ministry on 30.9.2013, to reach Jabalpur finally in March 2014.

15. The circular of Ministry of Road Transport & Highways for further streamlining the process of grant of permission for movement of over weight and over dimensional consignments (OWCs/ODCs) was issued on 16.9.2013. It was brought into the notice of Ministry of Road Transport & Highways that several consignments are withheld in want of survey report of critical structures like bridges, tunnels etc. on the National Highways. The Ministry in order to prevent delay in grant of permission for movement of OWCs/ODCs on the National Highway, decided on 30.9.2013 that the implementation of circular dated 16.9.2013 be kept in abeyance until completion of survey and examination by the Ministry. Further, the survey work e.t.c are time bound job and the concerned transportation agency should have made aware themselves about these details. The petitioner's transportation agency should have taken care to coordinate with authority before taking the alternate route. Further, it is observed that before



taking the alternate route, the petitioner has not done the proper analysis of the road condition which was got damaged due to rain. It is also not clear that why the ICT bank came back to works in Vadodara in October, 2013 from Dahod. As per the documents paced on record by the petitioner, it is evident that there was a restriction by Government instrumentality on movement of heavy load vehicle due to survey work. However, it is observed that if due care has been taken by the transportation agency, the further delay could have been avoided. We are of the view that the delay due to restriction imposed by the Government instrumentality is to be condoned. The delay on account of taking alternate route was due to improper planning and co-ordination by the transportation agency and therefore we are not fully convinced with the reasons given by the petitioner for time-over run of two months. Accordingly, the delay of 2 months for taking alternate route, transportation back to manufacturer site etc is disallowed and balance time of 1 months and 17 days for Asset-I is condoned.

### **Asset-II**

#### **Line Reactor commissioned as bus reactor**

16. The petitioner submitted that commissioning of the Asset-II got delayed due to non-approval of forest proposal, hence, the line reactors have been commissioned as bus reactors as interim contingency arrangement. To maintain the voltage profile at Jabalpur PS, line reactor for Jabalpur-Dharamjaigarh at Jabalpur has been charged as Bus reactor as per the in-principle approval from CEA for commissioning of 765 kV, 240 MVAR Line Reactors as Bus Reactor in Western Region. The petitioner has also submitted the CEA in-principle approval



letter. We observe that the delay is on account of uncontrollable factor and therefore we condone the entire time over-run of 3 months and 17 days for Asset-II.

### **Asset-III & Asset-IV**

#### **Delay due to non availability of energisation source**

17. The petitioner has submitted that Dharamjaigarh Sub-station (near Korba) is a Green-field Sub-station which required at least one energisation source for its charging. For this Sub-station, the option for voltage source were either through LILO of 765 kV Ranchi-Sipat T/L under DVC, or 765kV D/C Jharsuguda-Dharamjaigarh transmission line or 765 kV Dharamjaigarh-Jabalpur transmission line. However all the above transmission lines (including 765 kV Ranchi-Sipat S/C under DVC /RB project) were passing through considerable forest area and the first line to be energized was 765 kV S/C Ranchi Sipat only on 31.03.2014. Accordingly along with the the 765 kV Ranch-Sipat line under DVC, the instant element, namely LILO of 765 kV Ranch-Sipat transmission line and 765 kV Bus Reactor also got charged on 31.3.2014, and taken under regular operation w.e.f. 1.4.2014. In addition to this, delay of 17 days in the commissioning of the Asset-IV is mainly due to phased manner charging of various elements one by one, as the charging of all elements in one go is normally to be avoided and the Reactor was taken into service once the system got established after charging of previous elements. From the petitioners submission, it is observed that petitioner has not done proper planning and coordinateion. The petitioner should have envisaged this situation and must have raised this issue with some appropriate authority or in Standing Committee meeting or Regional Power Committee meeting. It is noticed that the petitioner's effort to make some alternate arrangement for energisation is



missing. Accordingly, we are not impressed to condone the entire time over-run of 3 months and 17 days for Asset-I and 4 months and 4 days for Asset-IV.

### **Asset-Va & Asset-Vb**

#### **Rerouting due to encountering of Coal Blocks:**

18. The petitioner submitted that immediately after Investment approval contract was awarded for construction of this Transmission Line within a month's time i.e. on 18.1.2011 and construction activities were taken on top priority on most feasible route. However, during construction phase, Ministry of Coal intimated that the instant line under consideration was passing through Gare Palma Coal block and was required to be rerouted. A first communication in this regard was received from Secretary Coal dated 8.5.2012. Subsequently a detailed exercise with Coal Ministry/ CMPDI/ with help of CEA was carried out. After various rounds of discussion and survey and field inspection another route was finalized in association with Coal ministry /CMPDI/CEA. Accordingly, in August, 2012, in principle decision for alternate route was worked out.

#### **Forest Approval for Ministry of Environment and Forest**

19. Further, after change of route to avoid the coal blocks/forest areas, the detailed survey of forest was again carried out and forest proposal was prepared with following major milestones:-

- Finalization of diverted Route with resurvey : August, 2012
- Forest Involvement : 130.792 Ha
- Forest Range involved (3 Nos.) : Korba, Raigarh and



	Dharamjaygarh
• Proposal Submitted by POWERGRID to DFO :	18.9.2012
• Forest proposal forwarded to CF, Bilaspur :	8.1.2013
• Stage-I Approval by MoEF :	19.8.2013
• Demand note received from DFO, Raigarh :	3.10.2013
• Stage I compliance submitted to DFO, Raigarh :	19.10.2013
• Stage –II approval :	15.1.2014
• Final Approval from State Govt :	13.3.2014
• Forest Area Tree Cutting Permission by Forest :	16.6.2014

20. After receiving of final approval for tree cutting on 16.6.2014 in forest area, tree cutting works were taken up along with mobilization of resources. It is observed that after receiving the first communication from Secretary Coal regarding the rerouting on 8.5.2012, the in principle decision for alternate route was worked out in Aug, 2012 i.e. it took around 4 months. Further, it is observed that forest proposal was submitted on 18.9.2012 and the sage-II was received on 15.1.2014 i.e. after a period of 16 months and then there is further delay in tree cutting permission in forest area. From the above submissions of the petitioner it is evident that delay is mainly on account of rerouting and delay in forest approval which is uncontrollable and cannot be attributable to the petitioner, therefore we condone the complete time over-run of 7 months and 16 days for Asset-Va and 7 months and 17 days for Asset-Vb.

### **Cost over-run**

21. The details of apportioned approved cost, capital cost as on date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred for the instant asset covered in the petition are as under:-





(₹ in lakh)

Asset	Approved cost as per FR	Approved cost as per RCE	Capital cost claimed as on COD	Additional capitalization			Total estimated completion cost claimed
				2014-15	2015-16	2016-17	
Asset-I	7183.74	6592.42	4226.89	1691.16	59.36	252.58	6299.99
Asset-II	4593.08	2998.15	1753.78	269.99	173.55	100.81	2298.13
Asset-III	30893.68	21475.58	12623.62	3782.87	1690.85	1981.43	20078.77
Asset-IV	3557.59	2857.18	1811.39	206.25	395.27	178.03	2590.94
Asset-V a	65905.02	72000.08	61581.51	3901.88	2052.56	2374.46	69910.41
Asset V b		14302.05	13190.80	326.75	208.17	161.24	13886.96

22. Further, the petitioner has submitted that cost variation in case of Asset-V is due to increase in tower weight from 26873 MT to 31104 MT mainly on account of variation in tower unit weight after detailed design, increase in angle towers. Further, there was increase in entry tax in Chattisgarh from 1% to 5%. The petitioner has submitted that variation is also on account of actual award rate obtained. It is observed that the petitioner has exceeded the approved apportioned cost. The petitioner has submitted the RCE vide affidavit dated 11.3.2016. The estimated completion cost is within the revised approved apportioned cost. We have considered the reasons submitted for cost variation and taking into consideration the revised apportioned approved cost, the cost over-run in case of the instant assets is allowed.

### **Treatment of Initial spares**



23. Regulation 13(d) of the 2014 Tariff Regulations provides that initial spares shall be capitalised as a percentage of plant and machinery cost upto cut-off date, subject to following ceiling norms:-

- “(a) Coal-based/lignite-fired thermal generating stations - 4.0%  
 (b) Gas Turbine/Combined Cycle thermal generating stations - 4.0%  
 (c) Hydro generating stations including pumped storage hydro generating station. - 4.0%  
 (d) Transmission system  
 (i) Transmission line - 1.00%  
 (ii) Transmission Sub-station (Green Field) - 4.00%  
 (iii) Transmission Sub-station (Brown Field) - 6.00%  
 (iv) Series Compensation devices and HVDC Station - 4.00%  
 (v) Gas Insulated Sub-station (GIS) - 5.00%  
 (vi) Communication system - 3.5%”

24. The petitioner has claimed initial spares of 1.64%, 1.41% and 3.19% against Sub-station for Asset-I, Asset-II and Asset-III which is within the ceiling limit specified in the 2014 Tariff Regulations. The petitioner has also claimed initial spares of 1.07% and 0.96% against transmission line for Asset-Va and Asset-Vb. It is observed that the petitioner has claimed excess initial spares for Asset-Va in accordance to ceiling limit specified in the 2014 Tariff Regulations. Further, the petitioner has not claimed any initial spares for Asset-IV.

25. The excess initial spares for Asset-Va has been worked out as under:-

(₹ in lakh)

Description	Particulars	Capital cost as on cut off date	Initial Spares claimed	Ceiling limit as per 2014 Tariff Regulations	Initial spares worked out	Excess initial spares claimed
		(a)	(b)	(c)	(d)=((a-b)*c)/(100-c)%	(e)=(b)- (d)
Asset-Va	Transmission line	54309.25	582.51	1.00%	542.69	39.82

## IDC and IEDC



26. In response to Commission's query regarding the amount of IDC discharged upto SCOD and from SCOD to actual COD, the petitioner submitted the details of IDC discharged during 2014-15 i.e. after COD. We have adjusted the amount of IDC discharged during 2014-15 from the capital cost as on COD and has considered it as part of additional capitalization during 2014-15. Further, we have also disallowed the IDC and IEDC for Asset-I, Asset-III and Asset-IV on account of time over-run not condoned.

27. Accordingly, the details of the capital cost considered as on the date of COD are as follows:-

(₹ in lakh)					
Particulars	Asset-I	Asset-II	Asset-III	Asset-IV	Asset-V a
Capital Cost as on COD as per Auditor Certificate	4226.89	1753.78	12623.62	1811.39	61581.51
Less:- IDC and IEDC disallowed	23.75	0.00	79.71	14.52	0
Less:- IDC discharged during 2014-15 (after COD)	0	32.28	359.42	75.69	0
Less:- Excess Initial Spares	0.00	0.00	0.00	0.00	39.82
Capital cost as on COD considered for tariff computation	4203.14	1721.50	12184.49	1721.18	61541.69

28. The COD of Asset-Va is 30.7.2014 and is combined with Asset-Vb w.e.f. 31.7.2014 that is the COD of Asset-Vb. The tariff for Asset-Va is only for one day. The capital cost as on COD considered for for Asset-Vb is shown in table below:-

Asset	Add:-Capital	Add:-	Add:-Capital	Less:-IDC	Total
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	cost as on COD considered for tariff computation for Asset-Va	Additional Capitalization for one day i.e. from 30.7.2014 to 31.7.2014	Cost as on COD as per Auditor Certificate for Asset-Vb	discharged during 2014-15 (after COD)	
Capital cost as on COD considered for tariff computation for Asset-Vb	61541.69	15.93	13190.8	99.23	74649.19

### **Additional Capital Expenditure**

29. The petitioner has projected additional capitalization for the years 2014-15, 2015-16 and 2016-17 towards balance and retention payment under Regulation 14(1)(i) of 2014 Tariff Regulations. It is observed that total estimated completion cost including the additional capitalization is within the approved apportioned cost for all the assets shown below. Accordingly, additional capitalization proposed by the petitioner is allowed under Regulation 14(1)(i) of 2014 Tariff Regulations. Further, the IDC discharged during 2014-15 has also been considered as additional capitalization for 2014-15. The total estimated completion cost including the additional capitalization allowed for all the assets is shown in table below:-

<b>Cost as per revised Investment Approval is ₹6592.42 lakh</b>								
Particulars (Asset-I)	Capital cost as on 1.4.2014	Additional capitalisation projected					Total additional capitalisation	Total capital cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19		
Approved	4203.14	1691.16	59.36	252.58	0.00	0.00	2003.10	6206.24



<b>Cost as per revised Investment Approval is ₹2998.15 lakh</b>								
Particulars (Asset-II)	Capital cost as on 1.4.2014	Additional capitalisation projected					Total additional capitalisation	Total capital cost including additional capitalisation as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19		
Approved	1721.50	302.27	173.55	100.81	0.00	0.00	576.63	2298.13

<b>Cost as per revised Investment Approval is ₹21475.58 lakh</b>								
Particulars (Asset-III)	Capital cost as on 1.4.2014	Additional capitalisation projected					Total additional capitalisation	Total capital cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19		
Approved	12184.49	4142.29	1690.85	1981.43	0.00	0.00	7814.57	19999.06

<b>Cost as per revised Investment Approval is ₹ 2857.18 lakh</b>								
Particulars (Asset-IV)	Capital cost as on 18.4.2014	Additional capitalisation projected					Total additional capitalisation	Total capital cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19		
Approved	1721.18	281.94	395.27	178.03	0.00	0.00	855.24	2576.42

<b>Cost as per revised Investment Approval is ₹ 72000.08 lakh</b>					
Particulars (Asset-V a)	Capital cost as on 30.7.2014	Additional capitalisation projected		Total additional capitalisation	Total capital cost as on 31.7.2014
		2014-15			
Approved	61541.69	15.93		15.93	61557.62

<b>Cost as per revised Investment Approval is ₹86302.13 lakh</b>								
Particulars (Asset-V b)	Capital cost as on 31.7.2014	Additional capitalisation projected					Total additional capitalisation	Total capital cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19		
Approved	74649.19	4311.93	2260.73	2535.70	0.00	0.00	9108.36	83757.55

### **Debt:Equity Ratio**



30. Regulation 19 (1) of the 2014 Tariff Regulations specifies as under:-

**“19. Debt-Equity Ratio:** (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.”

31. The petitioner has considered debt:equity ratio as 70:30 as on COD. We have considered debt:equity ratio of 70:30 as on COD and for additional capitalization during 2014-15, 2015-16 and 2016-17. The details of the debt:equity as on the date of COD and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Asset-I	As on 1.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	2942.20	70.00	1402.17	70.00	4344.37	70.00
Equity	1260.94	30.00	600.93	30.00	1861.87	30.00
<b>Total</b>	<b>4203.14</b>	<b>100.00</b>	<b>2003.10</b>	<b>100.00</b>	<b>6206.24</b>	<b>100.00</b>

(₹ in lakh)

Asset-II	As on 1.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	1205.05	70.00	403.64	70.00	1608.69	70.00
Equity	516.45	30.00	172.99	30.00	689.44	30.00
<b>Total</b>	<b>1721.50</b>	<b>100.00</b>	<b>576.63</b>	<b>100.00</b>	<b>2298.13</b>	<b>100.00</b>

(₹ in lakh)



Asset-III	As on 1.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	8529.14	70.00	5470.20	70.00	13999.34	70.00
Equity	3655.35	30.00	2344.37	30.00	5999.72	30.00
<b>Total</b>	<b>12184.49</b>	<b>100.00</b>	<b>7814.57</b>	<b>100.00</b>	<b>19999.06</b>	<b>100.00</b>

(₹ in lakh)

Asset-IV	As on 18.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	1204.83	70.00	598.67	70.00	1803.50	70.00
Equity	516.35	30.00	256.57	30.00	772.93	30.00
<b>Total</b>	<b>1721.18</b>	<b>100.00</b>	<b>855.24</b>	<b>100.00</b>	<b>2576.42</b>	<b>100.00</b>

(₹ in lakh)

Asset-V a	As on 30.7.2014		Additional capitalization during 2014-19		As on 31.7.2014	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	43079.19	70.00	11.15	70.00	43090.33	70.00
Equity	18462.51	30.00	4.78	30.00	18467.29	30.00
<b>Total</b>	<b>61541.69</b>	<b>100.00</b>	<b>15.93</b>	<b>100.00</b>	<b>61557.62</b>	<b>100.00</b>

(₹ in lakh)

Asset-V b	As on 31.7.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	52254.43	70.00	6375.85	70.00	58630.29	70.00
Equity	22394.76	30.00	2732.51	30.00	25127.27	30.00
<b>Total</b>	<b>74649.19</b>	<b>100.00</b>	<b>9108.36</b>	<b>100.00</b>	<b>83757.55</b>	<b>100.00</b>

### Interest on Loan ("IOL")

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

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



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

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

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

33. We have considered the weighted average rate of IOL on the basis of rate prevailing as on 1.4.2014. Further, the petitioner has prayed to allow it to bill and adjust impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period, if any from the respondents. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The petitioner’s prayer to bill and adjust the impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period from the respondents will be considered at the time of truing up. The details of weighted average rate of interest are placed at **Annexure** and the IOL has been worked out as follows:-

	(₹ in lakh)				
<b>(Asset-I)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	2942.20	4126.01	4167.56	4344.37	4344.37
Cumulative Repayment upto COD/previous year	0.00	266.57	579.36	900.38	1228.07
Net Loan-Opening	2942.20	3859.44	3588.20	3443.99	3116.30
Additions during the year	1183.81	41.55	176.81	0.00	0.00
Repayment during the year	266.57	312.79	321.02	327.69	327.69
Net Loan-Closing	3859.44	3588.20	3443.99	3116.30	2788.61
Average Loan	3400.82	3723.82	3516.09	3280.14	2952.45
Rate of Interest (%)	8.5470	8.6315	8.6959	8.7217	8.7044
<b>Interest</b>	<b>290.67</b>	<b>321.42</b>	<b>305.76</b>	<b>286.08</b>	<b>256.99</b>





(₹ in lakh)

(Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	1205.05	1416.64	1538.12	1608.69	1608.69
Cumulative Repayment upto COD/previous year	0.00	98.88	210.31	328.99	450.33
Net Loan-Opening	1205.05	1317.76	1327.81	1279.70	1158.36
Additions during the year	211.59	121.49	70.57	0.00	0.00
Repayment during the year	98.88	111.44	118.68	121.34	121.34
Net Loan-Closing	1317.76	1327.81	1279.70	1158.36	1037.02
Average Loan	1261.41	1322.79	1303.76	1219.03	1097.69
Rate of Interest (%)	8.4037	8.4591	8.4892	8.5009	8.4872
<b>Interest</b>	<b>106.01</b>	<b>111.90</b>	<b>110.68</b>	<b>103.63</b>	<b>93.16</b>

(₹ in lakh)

(Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	8529.14	11428.74	12612.34	13999.34	13999.34
Cumulative Repayment upto COD/previous year	0.00	617.35	1368.27	2198.29	3070.26
Net Loan-Opening	8529.14	10811.40	11244.06	11801.05	10929.08
Additions during the year	2899.60	1183.60	1387.00	0.00	0.00
Repayment during the year	617.35	750.93	830.02	871.96	871.96
Net Loan-Closing	10811.40	11244.06	11801.05	10929.08	10057.12
Average Loan	9670.27	11027.73	11522.55	11365.06	10493.10
Rate of Interest (%)	7.2458	7.4482	7.5907	7.6568	7.6310
<b>Interest</b>	<b>700.69</b>	<b>821.37</b>	<b>874.64</b>	<b>870.20</b>	<b>800.73</b>

(₹ in lakh)

(Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross loan opening	1204.83	1402.19	1678.87	1803.50	1803.50
Cumulative Repayment upto COD/previous year	0.00	92.53	206.04	333.70	465.84
Net Loan-Opening	1204.83	1309.66	1472.84	1469.80	1337.66
Additions during the year	197.36	276.69	124.62	0.00	0.00
Repayment during the year	92.53	113.51	127.66	132.14	132.14
Net Loan-Closing	1309.66	1472.84	1469.80	1337.66	1205.52
Average Loan	1257.24	1391.25	1471.32	1403.73	1271.59
Rate of Interest (%)	8.0973%	8.1488%	8.1975%	8.2121%	8.1914%
<b>Interest</b>	<b>97.06</b>	<b>113.37</b>	<b>120.61</b>	<b>115.28</b>	<b>104.16</b>



(₹ in lakh)	
<b>(Asset-V a)</b>	2014-15 (pro-rata)
Gross loan opening	43079.19
Cumulative Repayment upto COD/previous year	0.00
Net Loan-Opening	43079.19
Additions during the year	11.15
Repayment during the year	8.80
Net Loan-Closing	43081.53
Average Loan	43080.36
Rate of Interest (%)	7.3994%
<b>Interest</b>	<b>8.73</b>

(₹ in lakh)					
<b>(Asset-V b)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross loan opening	52254.43	55272.79	56855.30	58630.29	58630.29
Cumulative Repayment upto COD/previous year	0.00	2685.49	6873.25	11185.08	15562.55
Net Loan-Opening	52254.43	52587.30	49982.05	47445.21	43067.74
Additions during the year	3018.35	1582.51	1774.99	0.00	0.00
Repayment during the year	2685.49	4187.77	4311.83	4377.47	4377.47
Net Loan-Closing	52587.30	49982.05	47445.21	43067.74	38690.27
Average Loan	52420.87	51284.67	48713.63	45256.47	40879.00
Rate of Interest (%)	7.1437	7.2927	7.5133	7.6004	7.5413
<b>Interest</b>	<b>2503.37</b>	<b>3740.01</b>	<b>3659.98</b>	<b>3439.69</b>	<b>3082.82</b>

### Return on Equity("ROE")

34. Clause (1)& (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify as under:-

**"24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.



(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:  
xxx”

**“25. Tax on Return on Equity:**

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

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

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

35. The petitioner has claimed ROE at the rate of 19.610% for 2014-15 and at the rate of 19.705% for 2015-16 to 2018-19 after grossing up the ROE of 15.5% with MAT rate of 20.96% for 2014-15 and 21.34% for 2015-16 to 2018-19. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

36. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including



interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.

37. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted tax was paid at MAT rate during 2013-14. Accordingly, the MAT rate during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the instant transmission asset is given below:-

(₹ in lakh)					
<b>(Asset-I)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	1260.94	1768.29	1786.10	1861.87	1861.87
Addition to Equity during the year	507.35	17.81	75.77	0.00	0.00
Closing Equity	1768.29	1786.10	1861.87	1861.87	1861.87
Average Equity	1514.62	1777.19	1823.98	1861.87	1861.87
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	<b>297.02</b>	<b>348.51</b>	<b>357.68</b>	<b>365.11</b>	<b>365.11</b>

(₹ in lakh)					
<b>(Asset-II)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	516.45	607.13	659.20	689.44	689.44
Addition to Equity during the year	90.68	52.07	30.24	0.00	0.00
Closing Equity	607.13	659.20	689.44	689.44	689.44
Average Equity	561.79	633.16	674.32	689.44	689.44
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961



<b>(Asset-II)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	<b>110.17</b>	<b>124.16</b>	<b>132.23</b>	<b>135.20</b>	<b>135.20</b>

(₹ in lakh)

<b>(Asset-III)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	3655.35	4898.03	5405.29	5999.72	5999.72
Addition to Equity during the year	1242.69	507.26	594.43	0.00	0.00
Closing Equity	4898.03	5405.29	5999.72	5999.72	5999.72
Average Equity	4276.69	5151.66	5702.50	5999.72	5999.72
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	<b>838.66</b>	<b>1010.24</b>	<b>1118.26</b>	<b>1176.54</b>	<b>1176.54</b>

(₹ in lakh)

<b>(Asset-IV)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	516.35	600.94	719.52	772.93	772.93
Addition to Equity during the year	84.58	118.58	53.41	0.00	0.00
Closing Equity	600.94	719.52	772.93	772.93	772.93
Average Equity	558.65	660.23	746.22	772.93	772.93
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	<b>104.45</b>	<b>129.47</b>	<b>146.33</b>	<b>151.57</b>	<b>151.57</b>

(₹ in lakh)

<b>(Asset-V a)</b>	2014-15 (pro-rata)
Opening Equity	18462.51
Addition to Equity during the year	4.78
Closing Equity	18467.29
Average Equity	18464.90
Return on Equity (Base Rate) (%)	15.50
MAT rate for the year (%)	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610
<b>Return on Equity (Pre Tax)</b>	<b>9.92</b>



<b>(Asset-V b)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	22394.76	23688.34	24366.56	25127.27	25127.27
Addition to Equity during the year	1293.58	678.22	760.71	0.00	0.00
Closing Equity	23688.34	24366.56	25127.27	25127.27	25127.27
Average Equity	23041.55	24027.45	24746.91	25127.27	25127.27
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
<b>Return on Equity (Pre Tax)</b>	<b>3020.55</b>	<b>4711.78</b>	<b>4852.87</b>	<b>4927.46</b>	<b>4927.46</b>

### **Depreciation**

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

#### **"27. Depreciation:**

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis”

“(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:



Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.”

39. Clause (67) of Regulation 3 of the 2014 Tariff Regulations defines useful life as follows:-

“(67) ‘**Useful life**’ in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:

- (a) Coal/Lignite based thermal generating station 25 years
- (b) Gas/Liquid fuel based thermal generating station 25 years
- (c) AC and DC sub-station 25 years
- (d) Gas Insulated Substation (GIS) 25 years
- (d) Hydro generating station including pumpedStorage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years”

40. The petitioner has computed depreciation considering capital expenditure claimed as on COD and additional capitalization.

41. We have considered the submissions of the petitioner and have computed depreciation considering capital expenditure and additional capitalization approved in this order. The weighted average useful life of the asset has been considered as 25 years, 25 years, 26 years, 25 years, 34 years and 34 years for Asset-I, Asset-II, Asset-III, Asset-IV, Asset-Va and Asset-Vb respectively in accordance with the above regulation. The details of the depreciation allowed are given hereunder:-



(₹ in lakh)

<b>(Asset-I)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	4203.14	5894.30	5953.66	6206.24	6206.24
Additional Capitalisation	1691.16	59.36	252.58	0.00	0.00
Gross block at the end of the year	5894.30	5953.66	6206.24	6206.24	6206.24
Average gross block	5048.72	5923.98	6079.95	6206.24	6206.24
Rate of Depreciation (%)	5.280	5.280	5.280	5.280	5.280
Depreciable Value	4543.85	5331.58	5471.95	5585.61	5585.61
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	4543.85	5065.01	4892.59	4685.23	4357.54
<b>Depreciation</b>	<b>266.57</b>	<b>312.79</b>	<b>321.02</b>	<b>327.69</b>	<b>327.69</b>

(₹ in lakh)

<b>(Asset-II)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	1721.50	2023.77	2197.32	2298.13	2298.13
Additional Capitalisation	302.27	173.55	100.81	0.00	0.00
Gross block at the end of the year	2023.77	2197.32	2298.13	2298.13	2298.13
Average gross block	1872.64	2110.55	2247.73	2298.13	2298.13
Rate of Depreciation (%)	5.280	5.280	5.280	5.280	5.280
Depreciable Value	1685.37	1899.49	2022.95	2068.32	2068.32
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	1685.37	1800.62	1812.64	1739.33	1617.98
<b>Depreciation</b>	<b>98.88</b>	<b>111.44</b>	<b>118.68</b>	<b>121.34</b>	<b>121.34</b>

(₹ in lakh)

<b>(Asset-III)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	12184.49	16326.78	18017.63	19999.06	19999.06
Additional Capitalisation	4142.29	1690.85	1981.43	0.00	0.00
Gross block at the end of the year	16326.78	18017.63	19999.06	19999.06	19999.06
Average gross block	14255.63	17172.20	19008.34	19999.06	19999.06
Rate of Depreciation (%)	4.331	4.373	4.367	4.360	4.360
Depreciable Value	11355.34	13959.95	15610.85	16501.67	16501.67
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	26	25	24	23	22





<b>(Asset-III)</b>	2014-15	2015-16	2016-17	2017-18	2018-19
Remaining Depreciable Value	11355.34	13342.60	14242.57	14303.38	13431.42
<b>Depreciation</b>	617.35	750.93	830.02	871.96	871.96

(₹ in lakh)

<b>(Asset-IV)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross block	1721.18	2003.12	2398.39	2576.42	2576.42
Additional Capitalisation	281.94	395.27	178.03	0.00	0.00
Gross block at the end of the year	2003.12	2398.39	2576.42	2576.42	2576.42
Average gross block	1862.15	2200.76	2487.41	2576.42	2576.42
Rate of Depreciation (%)	5.212	5.158	5.132	5.129	5.129
Depreciable Value	1675.94	1980.68	2238.67	2318.78	2318.78
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	1675.94	1888.15	2032.63	1985.08	1852.94
<b>Depreciation</b>	<b>92.53</b>	<b>113.51</b>	<b>127.66</b>	<b>132.14</b>	<b>132.14</b>

(₹ in lakh)

<b>(Asset-V a)</b>	2014-15 (pro-rata)
Opening Gross block	61541.69
Additional Capitalisation	15.93
Gross block at the end of the year	61557.62
Average gross block	61549.66
Rate of Depreciation (%)	5.221
Depreciable Value	55394.69
Elapsed Life of the assets at beginning of the year	0
Weighted Balance Useful life of the assets	34
Remaining Depreciable Value	55394.69
<b>Depreciation</b>	<b>8.80</b>

(₹ in lakh)

<b>(Asset-V b)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross block	74649.19	78961.12	81221.84	83757.54	83757.54
Additional Capitalisation	4311.93	2260.72	2535.70	0.00	0.00
Gross block at the end of	78961.12	81221.84	83757.54	83757.54	83757.54



<b>(Asset-V b)</b>	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
the year					
Average gross block	76805.16	80091.48	82489.69	83757.54	83757.54
Rate of Depreciation (%)	5.230	5.229	5.227	5.226	5.226
Depreciable Value	69124.64	72082.34	74240.72	75381.79	75381.79
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	34	33	32	31	30
Remaining Depreciable Value	69124.64	69396.85	67367.47	64196.71	59819.24
<b>Depreciation</b>	<b>2685.49</b>	<b>4187.77</b>	<b>4311.83</b>	<b>4377.47</b>	<b>4377.47</b>

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

42. The petitioner has computed normative O&M Expenses as per Regulation 29(4)(a) of the 2014 Tariff Regulations. Accordingly, the petitioner’s entitlement to O&M expenses have been worked out as given hereunder:-

Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
765 kV	84.42	87.22	90.12	93.11	96.2
400 kV	60.30	62.30	64.37	66.51	68.71
<b>Bays</b>					
765 kV	1	1	1	1	1
400 kV	1	1	1	1	1
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	<b>144.72</b>	<b>149.52</b>	<b>154.49</b>	<b>159.62</b>	<b>164.91</b>

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
765 kV	84.42	87.22	90.12	93.11	96.2
<b>Bays</b>					
765 kV	1	1	1	1	1
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	<b>84.42</b>	<b>87.22</b>	<b>90.12</b>	<b>93.11</b>	<b>96.2</b>

Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for line</b>					



<b>Norms (₹ lakh/km)</b>					
Double Circuit (Twin and triple conductors)	0.606	0.627	0.647	0.669	0.691
<b>Asset (Kms)</b>					
LILO of 765 kV S/C Ranchi-WR Pooling station (Sipat) Line	9.077	9.077	9.077	9.077	9.077
<b>Total O&amp;M expense (line) (₹ lakh)</b>	5.50	5.69	5.87	6.07	6.27
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
765 kV	84.42	87.22	90.12	93.11	96.2
<b>Bays</b>					
765 kV	3	3	3	3	3
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	253.26	261.66	270.36	279.33	288.60
<b>Total O&amp;M expense (line &amp; Bay) (₹ lakh)</b>	258.76	267.35	276.23	285.40	294.87

Particulars (Asset-IV)	2014-15 (Pro rata)	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for Bays</b>					
<b>Norm (₹ lakh/Bay)</b>					
765 kV	84.42	87.22	90.12	93.11	96.2
<b>Bays</b>					
765 kV	1	1	1	1	1
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	80.49	87.22	90.12	93.11	96.2

Particulars (Asset-V a)	2014-15 (Pro rata)
<b>O&amp;M Expenses for line</b>	
<b>Norms (₹ lakh/km)</b>	
Double Circuit (Bundled conductor with four or more sub-conductors)	1.062
<b>Asset (Kms)</b>	
765 kV D/C Jharsuguda PS- Dharmjaygarh TL	149.789
<b>Total O&amp;M expense (line) (₹ lakh)</b>	159.076
<b>O&amp;M Expenses for Bays</b>	
<b>Norm (₹ lakh/Bay)</b>	
765 kV	84.42
<b>Bays</b>	
765 kV	2
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	168.84
<b>Total O&amp;M expense (line &amp; Bay) (₹ lakh)</b>	0.90



Particulars (Asset-V b)	2014-15 (Pro rata)	2015-16	2016-17	2017-18	2018-19
<b>O&amp;M Expenses for line Norms (₹ lakh/km)</b>					
Double Circuit (Bundled conductor with four or more sub-conductors)	1.062	1.097	1.133	1.171	1.210
<b>Asset (Kms)</b>					
765 kV D/C Jharsuguda PS- Dharmjaygarh TL	149.789	149.789	149.789	149.789	149.789
<b>Total O&amp;M expense (line) (₹ lakh)</b>	<b>159.076</b>	<b>164.319</b>	<b>169.711</b>	<b>175.403</b>	<b>181.245</b>
<b>O&amp;M Expenses for Bays Norm (₹ lakh/Bay)</b>					
765 kV	84.42	87.22	90.12	93.11	96.2
<b>Bays</b>					
765 kV	4	4	4	4	4
<b>Total O&amp;M expense (Bay) (₹ lakh)</b>	<b>337.68</b>	<b>348.88</b>	<b>360.48</b>	<b>372.44</b>	<b>384.80</b>
<b>Total O&amp;M expense (line &amp; Bay) (₹ lakh)</b>	<b>332.08</b>	<b>513.20</b>	<b>530.19</b>	<b>547.84</b>	<b>566.04</b>

43. The petitioner has submitted that norms for O&M Expenses for the tariff period 2014-19 have been arrived on the basis of normalized actual O&M Expenses during the period 2008-13. The petitioner has further submitted that the wage revision of the employees of the petitioner is due during the 2014-19 tariff period and actual impact of wage hike, which will be effective at a future date, has not been factored in fixation of the normative O&M rate specified for the tariff period 2014-19. The petitioner has prayed to be allowed to approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase.



44. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

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

45. As per 2014 Tariff Regulations the components of the working capital and the interest thereon are discussed hereinafter:-

#### **(i) Receivables**

As per Regulation 28(1) (c) (i) of the 2014 Tariff Regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the 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 transmission charges.

#### **(ii) Maintenance Spares**

Regulation 28 (1) (c) (ii) of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses from 1.4.2014. The petitioner has claimed maintenance spares for the instant asset and value of maintenance spares has accordingly been worked out as 15% of O&M Expenses.



### **(iii) O & M Expenses**

Regulation 28 (1) (c) (iii) of the 2014 Tariff Regulations provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O & M Expenses for the instant asset and value of O & M Expenses has accordingly been worked out by considering 1 month O&M Expenses.

### **(iv) Rate of interest on working capital**

Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later. Further, the Bank Rate' means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points).

46. Computations in support of interest on working capital allowed are as follows:-

	<b>(₹ in lakh)</b>				
Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	21.71	22.43	23.17	23.94	24.74
O & M expenses	12.06	12.46	12.87	13.30	13.74
Receivables	171.11	193.85	195.02	194.98	190.95



Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Total	204.87	228.74	231.07	232.22	229.43
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>27.66</b>	<b>30.88</b>	<b>31.19</b>	<b>31.35</b>	<b>30.97</b>

(₹ in lakh)

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.66	13.08	13.52	13.97	14.43
O & M expenses	7.04	7.27	7.51	7.76	8.02
Receivables	68.56	74.59	77.50	77.79	76.54
Total	88.26	94.94	98.53	99.51	98.99
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>11.92</b>	<b>12.82</b>	<b>13.30</b>	<b>13.43</b>	<b>13.36</b>

(₹ in lakh)

Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	38.81	40.10	41.43	42.81	44.23
O & M expenses	21.56	22.28	23.02	23.78	24.57
Receivables	413.23	487.35	529.90	547.84	537.66
Total	473.61	549.73	594.35	614.44	606.47
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>63.94</b>	<b>74.21</b>	<b>80.24</b>	<b>82.95</b>	<b>81.87</b>

(₹ in lakh)

Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.07	13.08	13.52	13.97	14.43
O & M expenses	6.71	7.27	7.51	7.76	8.02
Receivables	64.29	76.10	83.13	84.40	83.05
Total	83.07	96.45	104.16	106.13	105.50
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>11.21</b>	<b>13.02</b>	<b>14.06</b>	<b>14.33</b>	<b>14.24</b>

(₹ in lakh)

Particulars (Asset-V a)	2014-15 (pro-rata)
Maintenance Spares	0.13
O & M expenses	0.07
Receivables	4.84
Total	5.05
Rate of Interest (%)	13.50%
<b>Interest</b>	<b>0.68</b>



(₹ in lakh)

Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	49.81	76.98	79.53	82.18	84.91
O & M expenses	27.67	42.77	44.18	45.65	47.17
Receivables	1458.13	2245.34	2279.89	2269.35	2211.70
Total	1535.62	2365.09	2403.60	2397.18	2343.78
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>207.31</b>	<b>319.29</b>	<b>324.49</b>	<b>323.62</b>	<b>316.41</b>

### Annual Transmission Charges

47. The detailed computation of the various components of the annual fixed charges for the transmission asset for the tariff period 2014-19 is summarised below:-

(₹ in lakh)

Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Gross Opening Block	4203.14	5894.30	5953.66	6206.24	6206.24
Additional Capitalisation	1691.16	59.36	252.58	0.00	0.00
Gross Closing Block	5894.30	5953.66	6206.24	6206.24	6206.24
Average Gross Block	5048.72	5923.98	6079.95	6206.24	6206.24
<b>Depreciation</b>					
Rate of Depreciation (%)	5.280	5.280	5.280	5.280	5.280
Depreciable Value	4543.85	5331.58	5471.95	5585.61	5585.61
Elapsed Life (Beginning of the year)	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	4543.85	5065.01	4892.59	4685.23	4357.54
Depreciation	266.57	312.79	321.02	327.69	327.69
<b>Interest on Loan</b>					
Gross Normative Loan	2942.20	4126.01	4167.56	4344.37	4344.37
Cumulative Repayment upto Previous Year	0.00	266.57	579.36	900.38	1228.07
Net Loan-Opening	2942.20	3859.44	3588.20	3443.99	3116.30
Addition due to Additional	1183.81	41.55	176.81	0.00	0.00





Particulars (Asset-I)	2014-15	2015-16	2016-17	2017-18	2018-19
Capitalisation					
Repayment during the year	266.57	312.79	321.02	327.69	327.69
Net Loan-Closing	3859.44	3588.20	3443.99	3116.30	2788.61
Average Loan	3400.82	3723.82	3516.09	3280.14	2952.45
Weighted Average Rate of Interest on Loan (%)	8.5470	8.6315	8.6959	8.7217	8.7044
Interest	290.67	321.42	305.76	286.08	256.99
<b>Return on Equity</b>					
Opening Equity	1260.94	1768.29	1786.10	1861.87	1861.87
Addition due to Additional Capitalisation	507.35	17.81	75.77	0.00	0.00
Closing Equity	1768.29	1786.10	1861.87	1861.87	1861.87
Average Equity	1514.62	1777.19	1823.98	1861.87	1861.87
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax ) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	297.02	348.51	357.68	365.11	365.11
<b>Interest on Working Capital</b>					
Maintenance Spares	21.71	22.43	23.17	23.94	24.74
O & M expenses	12.06	12.46	12.87	13.30	13.74
Receivables	171.11	193.85	195.02	194.98	190.95
Total	204.87	228.74	231.07	232.22	229.43
Interest	27.66	30.88	31.19	31.35	30.97
<b>Annual Transmission Charges</b>					
Depreciation	266.57	312.79	321.02	327.69	327.69
Interest on Loan	290.67	321.42	305.76	286.08	256.99
Return on Equity	297.02	348.51	357.68	365.11	365.11
Interest on Working Capital	27.66	30.88	31.19	31.35	30.97
O & M Expenses	144.72	149.52	154.49	159.62	164.91
<b>Total</b>	<b>1026.63</b>	<b>1163.11</b>	<b>1170.14</b>	<b>1169.86</b>	<b>1145.68</b>

(₹ in lakh)

Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Gross Opening Block	1721.50	2023.77	2197.32	2298.13	2298.13



Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Additional Capitalisation	302.27	173.55	100.81	0.00	0.00
Gross Closing Block	2023.77	2197.32	2298.13	2298.13	2298.13
Average Gross Block	1872.64	2110.55	2247.73	2298.13	2298.13
<b>Depreciation</b>					
Rate of Depreciation (%)	5.280	5.280	5.280	5.280	5.280
Depreciable Value	1685.37	1899.49	2022.95	2068.32	2068.32
Elapsed Life (Beginning of the year)	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	1685.37	1800.62	1812.64	1739.33	1617.98
Depreciation	98.88	111.44	118.68	121.34	121.34
<b>Interest on Loan</b>					
Gross Normative Loan	1205.05	1416.64	1538.12	1608.69	1608.69
Cumulative Repayment upto Previous Year	0.00	98.88	210.31	328.99	450.33
Net Loan-Opening	1205.05	1317.76	1327.81	1279.70	1158.36
Addition due to Additional Capitalisation	211.59	121.49	70.57	0.00	0.00
Repayment during the year	98.88	111.44	118.68	121.34	121.34
Net Loan-Closing	1317.76	1327.81	1279.70	1158.36	1037.02
Average Loan	1261.41	1322.79	1303.76	1219.03	1097.69
Weighted Average Rate of Interest on Loan (%)	8.4037	8.4591	8.4892	8.5009	8.4872
Interest	106.01	111.90	110.68	103.63	93.16
<b>Return on Equity</b>					
Opening Equity	516.45	607.13	659.20	689.44	689.44
Addition due to Additional Capitalisation	90.68	52.07	30.24	0.00	0.00
Closing Equity	607.13	659.20	689.44	689.44	689.44
Average Equity	561.79	633.16	674.32	689.44	689.44
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.96	20.96	20.96	20.96	20.96
Rate of Return on Equity (Pre Tax ) (%)	19.61	19.61	19.61	19.61	19.61
Return on Equity (Pre Tax)	110.17	124.16	132.23	135.20	135.20
<b>Interest on Working Capital</b>					



Particulars (Asset-II)	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.66	13.08	13.52	13.97	14.43
O & M expenses	7.04	7.27	7.51	7.76	8.02
Receivables	68.56	74.59	77.50	77.79	76.54
Total	88.26	94.94	98.53	99.51	98.99
Interest	11.92	12.82	13.30	13.43	13.36
<b>Annual Transmission Charges</b>					
Depreciation	98.88	111.44	118.68	121.34	121.34
Interest on Loan	106.01	111.90	110.68	103.63	93.16
Return on Equity	110.17	124.16	132.23	135.20	135.20
Interest on Working Capital	11.92	12.82	13.30	13.43	13.36
O & M Expenses	84.42	87.22	90.12	93.11	96.20
<b>Total</b>	<b>411.38</b>	<b>447.53</b>	<b>465.01</b>	<b>466.71</b>	<b>459.27</b>

(₹ in lakh)

Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Gross Opening Block	12184.49	16326.78	18017.63	19999.06	19999.06
Additional Capitalisation	4142.29	1690.85	1981.43	0.00	0.00
Gross Closing Block	16326.78	18017.63	19999.06	19999.06	19999.06
Average Gross Block	14255.63	17172.20	19008.34	19999.06	19999.06
<b>Depreciation</b>					
Rate of Depreciation (%)	4.331	4.373	4.367	4.360	4.360
Depreciable Value	11355.34	13959.95	15610.85	16501.67	16501.67
Elapsed Life (Beginning of the year)	0	1	2	3	4
Weighted Balance Useful life of the assets	26	25	24	23	22
Remaining Depreciable Value	11355.34	13342.60	14242.57	14303.38	13431.42
Depreciation	617.35	750.93	830.02	871.96	871.96
<b>Interest on Loan</b>					
Gross Normative Loan	8529.14	11428.74	12612.34	13999.34	13999.34
Cumulative Repayment upto Previous Year	0.00	617.35	1368.27	2198.29	3070.26
Net Loan-Opening	8529.14	10811.40	11244.06	11801.05	10929.08
Addition due to Additional Capitalisation	2899.60	1183.60	1387.00	0.00	0.00
Repayment during the year	617.35	750.93	830.02	871.96	871.96



Particulars (Asset-III)	2014-15	2015-16	2016-17	2017-18	2018-19
Net Loan-Closing	10811.40	11244.06	11801.05	10929.08	10057.12
Average Loan	9670.27	11027.73	11522.55	11365.06	10493.10
Weighted Average Rate of Interest on Loan (%)	7.2458	7.4482	7.5907	7.6568	7.6310%
Interest	700.69	821.37	874.64	870.20	800.73
<b>Return on Equity</b>					
Opening Equity	3655.35	4898.03	5405.29	5999.72	5999.72
Addition due to Additional Capitalisation	1242.69	507.26	594.43	0.00	0.00
Closing Equity	4898.03	5405.29	5999.72	5999.72	5999.72
Average Equity	4276.69	5151.66	5702.50	5999.72	5999.72
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax ) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	838.66	1010.24	1118.26	1176.54	1176.54
<b>Interest on Working Capital</b>					
Maintenance Spares	38.81	40.10	41.43	42.81	44.23
O & M expenses	21.56	22.28	23.02	23.78	24.57
Receivables	413.23	487.35	529.90	547.84	537.66
Total	473.61	549.73	594.35	614.44	606.47
Interest	63.94	74.21	80.24	82.95	81.87
<b>Annual Transmission Charges</b>					
Depreciation	617.35	750.93	830.02	871.96	871.96
Interest on Loan	700.69	821.37	874.64	870.20	800.73
Return on Equity	838.66	1010.24	1118.26	1176.54	1176.54
Interest on Working Capital	63.94	74.21	80.24	82.95	81.87
O & M Expenses	258.76	267.35	276.23	285.40	294.87
<b>Total</b>	<b>2479.39</b>	<b>2924.10</b>	<b>3179.39</b>	<b>3287.06</b>	<b>3225.99</b>

(₹ in lakh)

Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Gross Opening Block	1721.18	2003.12	2398.39	2576.42	2576.42
Additional Capitalisation	281.94	395.27	178.03	0.00	0.00



Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Closing Block	2003.12	2398.39	2576.42	2576.42	2576.42
Average Gross Block	1862.15	2200.76	2487.41	2576.42	2576.42
<b>Depreciation</b>					
Rate of Depreciation (%)	5.212	5.158	5.132	5.129	5.129
Depreciable Value	1675.94	1980.68	2238.67	2318.78	2318.78
Elapsed Life (Beginning of the year)	0	1	2	3	4
Weighted Balance Useful life of the assets	25	24	23	22	21
Remaining Depreciable Value	1675.94	1888.15	2032.63	1985.08	1852.94
Depreciation	92.53	113.51	127.66	132.14	132.14
<b>Interest on Loan</b>					
Gross Normative Loan	1204.83	1402.19	1678.87	1803.50	1803.50
Cumulative Repayment upto Previous Year	0.00	92.53	206.04	333.70	465.84
Net Loan-Opening	1204.83	1309.66	1472.84	1469.80	1337.66
Addition due to Additional Capitalisation	197.36	276.69	124.62	0.00	0.00
Repayment during the year	92.53	113.51	127.66	132.14	132.14
Net Loan-Closing	1309.66	1472.84	1469.80	1337.66	1205.52
Average Loan	1257.24	1391.25	1471.32	1403.73	1271.59
Weighted Average Rate of Interest on Loan (%)	8.0973	8.1488	8.1975	8.2121	8.1914
Interest	97.06	113.37	120.61	115.28	104.16
<b>Return on Equity</b>					
Opening Equity	516.35	600.94	719.52	772.93	772.93
Addition due to Additional Capitalisation	84.58	118.58	53.41	0.00	0.00
Closing Equity	600.94	719.52	772.93	772.93	772.93
Average Equity	558.65	660.23	746.22	772.93	772.93
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax ) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	104.45	129.47	146.33	151.57	151.57
<b>Interest on Working Capital</b>					
Maintenance Spares	12.07	13.08	13.52	13.97	14.43



Particulars (Asset-IV)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	6.71	7.27	7.51	7.76	8.02
Receivables	64.29	76.10	83.13	84.40	83.05
Total	83.07	96.45	104.16	106.13	105.50
Interest	11.21	13.02	14.06	14.33	14.24
<b>Annual Transmission Charges</b>					
Depreciation	92.53	113.51	127.66	132.14	132.14
Interest on Loan	97.06	113.37	120.61	115.28	104.16
Return on Equity	104.45	129.47	146.33	151.57	151.57
Interest on Working Capital	11.21	13.02	14.06	14.33	14.24
O & M Expenses	80.49	87.22	90.12	93.11	96.20
<b>Total</b>	<b>385.74</b>	<b>456.59</b>	<b>498.79</b>	<b>506.42</b>	<b>498.31</b>

(₹ in lakh)

Particulars (Asset-V a)	2014-15 (pro-rata)
<b>Gross Block</b>	
Gross Opening Block	61541.69
Additional Capitalisation	15.93
Gross Closing Block	61557.62
Average Gross Block	61549.66
<b>Depreciation</b>	
Rate of Depreciation (%)	5.221
Depreciable Value	55394.69
Elapsed Life (Beginning of the year)	0
Weighted Balance Useful life of the assets	34
Remaining Depreciable Value	55394.69
Depreciation	8.80
<b>Interest on Loan</b>	
Gross Normative Loan	43079.19
Cumulative Repayment upto Previous Year	0.00
Net Loan-Opening	43079.19
Addition due to Additional Capitalisation	11.15
Repayment during the year	8.80



Particulars (Asset-V a)	2014-15 (pro-rata)
Net Loan-Closing	43081.53
Average Loan	43080.36
Weighted Average Rate of Interest on Loan (%)	7.3994
Interest	8.73
<b>Return on Equity</b>	
Opening Equity	18462.51
Addition due to Additional Capitalisation	4.78
Closing Equity	18467.29
Average Equity	18464.90
Return on Equity (Base Rate) (%)	15.50
MAT rate for the year (%)	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610
Return on Equity (Pre Tax)	9.92
<b>Interest on Working Capital</b>	
Maintenance Spares	0.13
O & M expenses	0.07
Receivables	4.84
Total	5.05
Interest	0.68
<b>Annual Transmission Charges</b>	
Depreciation	8.80
Interest on Loan	8.73
Return on Equity	9.92
Interest on Working Capital	0.68
O & M Expenses	0.90
<b>Total</b>	<b>29.04</b>

(₹ in lakh)

Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Gross Opening Block	74649.19	78961.12	81221.84	83757.54	83757.54
Additional Capitalisation	4311.93	2260.72	2535.70	0.00	0.00
Gross Closing Block	78961.12	81221.84	83757.54	83757.54	83757.54



Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Average Gross Block	76805.16	80091.48	82489.69	83757.54	83757.54
<b>Depreciation</b>					
Rate of Depreciation (%)	5.230	5.229	5.227	5.226	5.226
Depreciable Value	69124.64	72082.34	74240.72	75381.79	75381.79
Elapsed Life (Beginning of the year)	0	1	2	3	4
Weighted Balance Useful life of the assets	34	33	32	31	30
Remaining Depreciable Value	69124.64	69396.85	67367.47	64196.71	59819.24
Depreciation	2685.49	4187.77	4311.83	4377.47	4377.47
<b>Interest on Loan</b>					
Gross Normative Loan	52254.43	55272.79	56855.30	58630.29	58630.29
Cumulative Repayment upto Previous Year	0.00	2685.49	6873.25	11185.08	15562.55
Net Loan-Opening	52254.43	52587.30	49982.05	47445.21	43067.74
Addition due to Additional Capitalisation	3018.35	1582.51	1774.99	0.00	0.00
Repayment during the year	2685.49	4187.77	4311.83	4377.47	4377.47
Net Loan-Closing	52587.30	49982.05	47445.21	43067.74	38690.27
Average Loan	52420.87	51284.67	48713.63	45256.47	40879.00
Weighted Average Rate of Interest on Loan (%)	7.1437	7.2927	7.5133	7.6004	7.5413
Interest	2503.37	3740.01	3659.98	3439.69	3082.82
<b>Return on Equity</b>					
Opening Equity	22394.76	23688.34	24366.56	25127.27	25127.27
Addition due to Additional Capitalisation	1293.58	678.22	760.71	0.00	0.00
Closing Equity	23688.34	24366.56	25127.27	25127.27	25127.27
Average Equity	23041.55	24027.45	24746.91	25127.27	25127.27
Return on Equity (Base Rate ) (%)	15.50	15.50	15.50	15.50	15.50
MAT rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax ) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	3020.55	4711.78	4852.87	4927.46	4927.46
<b>Interest on Working Capital</b>					
Maintenance Spares	49.81	76.98	79.53	82.18	84.91
O & M expenses	27.67	42.77	44.18	45.65	47.17





Particulars (Asset-V b)	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Receivables	1458.13	2245.34	2279.89	2269.35	2211.70
Total	1535.62	2365.09	2403.60	2397.18	2343.78
Interest	207.31	319.29	324.49	323.62	316.41
<b>Annual Transmission Charges</b>					
Depreciation	2685.49	4187.77	4311.83	4377.47	4377.47
Interest on Loan	2503.37	3740.01	3659.98	3439.69	3082.82
Return on Equity	3020.55	4711.78	4852.87	4927.46	4927.46
Interest on Working Capital	207.31	319.29	324.49	323.62	316.41
O & M Expenses	332.08	513.20	530.19	547.84	566.04
<b>Total</b>	<b>8748.79</b>	<b>13472.05</b>	<b>13679.35</b>	<b>13616.08</b>	<b>13270.20</b>

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

48. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 42 of the 2009 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 42 of the 2009 Tariff Regulations.

### **Licence Fee**

49. The petitioner has requested to allow the petitioner to bill and recover Licence fee separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee in accordance with Clause (1)(b) of Regulation 42A of the 2009 Tariff Regulations.



### **Service Tax**

50. The petitioner has sought to recover Service Tax on Transmission Charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We are of the view that the petitioner's prayer is premature.

### **Sharing of Transmission Charges**

51. 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.

52. This order disposes of Petition No. 244/TT/2014.

Sd/-

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

Sd/-

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



**ANNEXURE****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO****(₹ in lakh)**

Particulars (Asset-I)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV Loan 1-	8.84%	1365.06	0.00	1365.06
BOND XXXVII Loan 2-	9.25%	20.00	0.00	20.00
BOND XXXVIII Loan 3-	9.25%	5.00	0.00	5.00
BOND XXXIX Loan 4-	9.40%	35.00	0.00	35.00
SBI (21.3.2012)- Loan 5-	10.25%	165.00	0.00	165.00
BOND XL Loan 6-	9.30%	190.00	0.00	190.00
IFC (IFC A LOAN) (31419-00)- Loan 7-60.61	3.23%	21.15	0.00	21.15
IFC (IFC B LOAN) (31419-01)- Loan 8-60.61	2.38%	91.22	0.00	91.22
IFC (ICFF LOAN) (31419-02)- Loan 9-60.61	3.23%	38.43	0.00	38.43
FC BOND (17.01.2013)- Loan 10-60.61	4.10%	168.01	0.00	168.01
BOND XLIII Loan 11-	7.93%	80.00	0.00	80.00
BOND XLIV Loan 12-	8.70%	280.00	0.00	280.00
BOND XLV Loan 13-	9.65%	499.95	0.00	499.95
BOND XLVII- ADDCAP FOR 2014-2015 Add Cap for2014-15	8.93%	0.00	1183.81	1183.81
<b>Total</b>		<b>2958.82</b>	<b>1183.81</b>	<b>4142.63</b>

**(₹ in lakh)**

Particulars (Asset-II)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV Loan 1-	8.84%	528.00	0.00	528.00
BOND XXXVII Loan 2-	9.25%	5.00	0.00	5.00
BOND XXXVIII Loan 3-	9.25%	1.00	0.00	1.00
BOND XXXIX Loan 4-	9.40%	7.50	0.00	7.50
SBI (21.3.2012)- Loan 5-	10.25%	35.00	0.00	35.00
BOND XL Loan 6-	9.30%	42.50	0.00	42.50
IFC (IFC A LOAN) (31419-00)- Loan 7-60.61	3.23%	4.97	0.00	4.97



Particulars (Asset-II)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
IFC (IFC B LOAN) (31419-01)- Loan 8-60.61	2.38%	20.00	0.00	20.00
IFC (ICFF LOAN) (31419-02)- Loan 9-60.61	3.23%	10.00	0.00	10.00
FC BOND (17.01.2013)- Loan 10-60.61	4.10%	36.97	0.00	36.97
BOND XLIII Loan 11-	7.93%	345.00	0.00	345.00
BOND XLIV Loan 12-	8.70%	95.00	0.00	95.00
BOND XLV- ADDCAP FOR 2014-2015 Add Cap Accrual IDC	9.65%	0.00	22.60	22.60
BOND XLV Loan 13-	9.65%	74.10	0.00	74.10
BOND XLVII- ADDCAP FOR 2014-2015 Add Cap for2014-15	8.93%	0.00	188.99	188.99
Total		1205.04	211.59	1416.63

(₹ in lakh)

Particulars (Asset-III)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV Loan 1-	8.84%	575.00	0.00	575.00
BOND XXXVII Loan 2-	9.25%	92.00	0.00	92.00
BOND XXXVIII Loan 3-	9.25%	26.00	0.00	26.00
BOND XXXIX Loan 4-	9.40%	154.00	0.00	154.00
SBI (21.3.2012)- Loan 5-	10.25%	434.00	0.00	434.00
BOND XL Loan 6-	9.30%	643.00	0.00	643.00
IFC (IFC A LOAN) (31419-00)- Loan 7-60.61	3.23%	326.08	0.00	326.08
IFC (IFC B LOAN) (31419-01)- Loan 8-60.61	2.38%	680.65	0.00	680.65
IFC (ICFF LOAN) (31419-02)- Loan 9-60.61	3.23%	284.87	0.00	284.87
FC BOND (17.01.2013)- Loan 10-60.61	4.10%	1076.43	0.00	1076.43
BOND XLIII Loan 11-	7.93%	3500.00	0.00	3500.00
BOND XLV- ADDCAP FOR 2014-2015 Add Cap Accrual IDC	8.70%	0.00	7.08	7.08



Particulars (Asset-III)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XLIV Loan 12-	8.70%	792.92	0.00	792.92
BOND XLVII- ADDCAP FOR 2014-2015 Add Cap Accrual IDC	9.65%	0.00	244.51	244.51
BOND XLVIII- ADDCAP FOR 2014-2015 Add Cap for2014-15	8.20%	0.00	1431.32	1431.32
BOND XLVII- ADDCAP FOR 2014-2015 Add Cap for2014-15	8.15%	0.00	1216.69	1216.69
<b>Total</b>		<b>8584.95</b>	<b>2899.60</b>	<b>11484.55</b>

(₹ in lakh)

Particulars (Asset-IV)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV Loan 1-	8.84%	30.00	0.00	30.00
BOND XXXVII Loan 2-	9.25%	15.00	0.00	15.00
BOND XXXVIII Loan 3-	9.25%	2.00	0.00	2.00
BOND XXXIX Loan 4-	9.40%	11.00	0.00	11.00
SBI (21.3.2012)- Loan 5-	10.25%	50.00	0.00	50.00
BOND XL Loan 6-	9.30%	280.00	0.00	280.00
IFC (IFC A LOAN) (31419-00)- Loan 7-60.61	3.23%	14.97	0.00	14.97
IFC (IFC B LOAN) (31419-01)- Loan 8-60.61	2.38%	30.53	0.00	30.53
IFC (ICFF LOAN) (31419-02)- Loan 9-60.61	3.23%	12.57	0.00	12.57
FC BOND (17.01.2013)- Loan 10-60.61	4.10%	48.49	0.00	48.49
BOND XLIII Loan 11-	7.93%	600.00	0.00	600.00
BOND XLV- ADDCAP FOR 2014-2015 Add Cap Accrual IDC	8.70%	0.00	29.58	29.58
BOND XLIV Loan 12-	8.70%	120.42	0.00	120.42
BOND XLV- ADDCAP FOR 2014-2015 Add Cap Accrual IDC	9.65%	0.00	23.40	23.40
BOND XLIX- ADDCAP FOR 2014-2015 Add Cap for2014-15	8.15%	0.00	144.38	144.38
<b>Total</b>		<b>1214.98</b>	<b>197.36</b>	<b>1412.34</b>



(₹ in lakh)

Particulars (Asset-V a)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV DOCO Loan	8.84%	6355.18	0.00	6355.18
BOND XXXVII DOCO Loan	9.25%	400.00	0.00	400.00
BOND XXXIX DOCO Loan	9.40%	1800.00	0.00	1800.00
SBI (21.3.2012)- DOCO Loan	10.25%	4900.00	0.00	4900.00
BOND XL DOCO Loan	9.30%	9028.00	0.00	9028.00
IFC (IFC B LOAN) (31419-01)- DOCO Loan-60.61	2.38%	5405.86	0.00	5405.86
FC BOND (17.01.2013)- DOCO Loan-60.61	4.10%	9046.01	0.00	9046.01
BOND XLIII DOCO Loan	7.93%	883.00	0.00	883.00
BOND XLV DOCO Loan	9.65%	5289.01	0.00	5289.01
Total		43107.06	0.00	43107.06

(₹ in lakh)

Particulars (Asset-V b)	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXXIV Loan 1-	8.84%	575.00	0.00	575.00
BOND XXXVII Loan 2-	9.25%	92.00	0.00	92.00
BOND XXXIX Loan 4-	9.40%	154.00	0.00	154.00
SBI (21.3.2012)- Loan 5-	10.25%	434.00	0.00	434.00
BOND XL Loan 6-	9.30%	643.00	0.00	643.00
IFC (IFC B LOAN) (31419-01)- Loan 8-60.61	2.38%	680.65	0.00	680.65
FC BOND (17.01.2013)- Loan 10-60.61	4.10%	1076.43	0.00	1076.43
BOND XLIII Loan 11-	7.93%	3500.00	0.00	3500.00
BOND XLIV Loan 12-	8.70%	792.92	0.00	792.92
Total		7948.00	0.00	7948.00



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

(₹ in lakh)

<b>Particulars (Asset-I)</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	2958.82	4142.63	4142.63	4142.63	4142.63
Cumulative Repayment of loan upto previous year	0	113.76	274.8	466.67	667.22
Net Loan Opening	2958.82	4028.87	3867.83	3675.96	3475.41
Additions during the year	1183.81	0	0	0	0
Repayment during the year	113.76	161.04	191.87	200.55	392.53
Net Loan Closing	4028.87	3867.83	3675.96	3475.41	3082.88
Average Loan	3493.85	3948.35	3771.90	3575.69	3279.15
Weighted Average Rate of Interest	8.5470%	8.6315%	8.6959%	8.7217%	8.7044%
Interest	298.62	340.8	328	311.86	285.43

(₹ in lakh)

<b>Particulars (Asset-II)</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	1205.04	1416.63	1416.63	1416.63	1416.63
Cumulative Repayment of loan upto previous year	0	44	98.42	159.56	249.01
Net Loan Opening	1205.04	1372.63	1318.21	1257.07	1167.62
Additions during the year	211.59	0	0	0	0
Repayment during the year	44	54.42	61.14	89.45	136.87
Net Loan Closing	1372.63	1318.21	1257.07	1167.62	1030.75
Average Loan	1288.84	1345.42	1287.64	1212.35	1099.19
Weighted Average Rate of Interest	8.4037%	8.4591%	8.4892%	8.5009%	8.4872%
Interest	108.31	113.81	109.31	103.06	93.29

(₹ in lakh)

<b>Particulars (Asset-III)</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	8584.95	11484.55	11484.55	11484.55	11484.55
Cumulative Repayment of loan upto previous year	0	47.92	443.84	932.78	1454.55
Net Loan Opening	8584.95	11436.63	11040.71	10551.77	10030
Additions during the year	2899.6	0	0	0	0
Repayment during the year	47.92	395.92	488.94	521.77	788.44
Net Loan Closing	11436.63	11040.71	10551.77	10030	9241.56
Average Loan	10010.79	11238.67	10796.24	10290.89	9635.78
Weighted Average Rate of Interest	7.2458%	7.4482%	7.5907%	7.6568%	7.6310%
Interest	725.36	837.08	819.51	787.95	735.31



(₹ in lakh)

Particulars (Asset-IV)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1214.98	1412.34	1412.34	1412.34	1412.34
Cumulative Repayment of loan upto previous year	0	2.5	21.52	68.41	154.75
Net Loan Opening	1214.98	1409.84	1390.82	1343.93	1257.59
Additions during the year	197.36	0	0	0	0
Repayment during the year	2.5	19.02	46.89	86.34	136.34
Net Loan Closing	1409.84	1390.82	1343.93	1257.59	1121.25
Average Loan	1312.41	1400.33	1367.38	1300.76	1189.42
Weighted Average Rate of Interest	8.0973%	8.1488%	8.1975%	8.2121%	8.1914%
Interest	106.27	114.11	112.09	106.82	97.43

(₹ in lakh)

Particulars (Asset-V a)	2014-15
Gross Opening Loan	43107.06
Cumulative Repayment of loan upto previous year	0
Net Loan Opening	43107.06
Additions during the year	0
Repayment during the year	0
Net Loan Closing	43107.06
Average Loan	43107.06
Weighted Average Rate of Interest	7.3994%
Interest	3189.65

(₹ in lakh)

Particulars (Asset-V b)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	52271.15	55300.66	55300.66	55300.66	55300.66
Cumulative Repayment of loan upto previous year	0	529.6	3837.13	8381.78	11421.99
Net Loan Opening	52271.15	54771.06	51463.53	46918.88	43878.67
Additions during the year	3029.51	0	0	0	0
Repayment during the year	529.6	3307.53	4544.65	3040.21	3500.06
Net Loan Closing	54771.06	51463.53	46918.88	43878.67	40378.61
Average Loan	53521.11	53117.30	49191.21	45398.78	42128.64
Weighted Average Rate of Interest	7.1437%	7.2927%	7.5133%	7.6004%	7.5413%
Interest	3823.39	3873.66	3695.86	3450.51	3177.06

