

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 105/TT/2014**

**Coram:**

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

**Date of Hearing : 14.03.2016**

**Date of Order : 21.03.2016**

**In the matter of:**

Determination of transmission tariff for Combined assets of Ranchi: (i) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-I Ckt II transmission line along with associated bays at Ranchi (old) and Ranchi (New); (ii) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-II transmission line along with associated bays at Ranchi (old) and Ranchi (New);(iii) 765 / 400 kV 3x500 MVA ICT I at along with associated bays at 765 kV Ranchi (New) Sub-station under Common Scheme for 765 kV Pooling Stations and Network for NR (Common for Sasan UMPP+NKP+Maithon/Koderma/Mejia/Bokaro/Raghunathpur/Durgapur+Import by NR from ER and from NER/SR/WR via ER) and Common scheme for network for WR (Common for NKP+Maithon/Koderma/Mejia/Bokaro/Raghunathpur/Durgapur + Import by WR from ER and from NER/SR/WR via ER) in Western Region for the 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and 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 Limited  
Shakti Bhawan, Rampur  
Jabalpur-482 008
2. Maharashtra State Electricity Distribution Co. Limited  
4<sup>th</sup> Floor, Prakashgad, Plot no. 9,



Andheri (East),  
Mumbai – 400 052

3. Gujarat Urja Vikas Nigam Limited  
Sardar Patel Vidyut Bhawan,  
Race Course Road, Vadodara – 390 007
4. Electricity Department  
Govt. of Goa  
Vidyut Bhawan, Panaji,  
Near Mandvi Hotel, Goa – 403 001
5. Electricity Department  
Administration of Daman & Diu  
Daman – 396 210
6. Electricity Department  
Administration of Dadra Nagar Haveli,  
U.T., Silvassa – 396 230
7. Chhattisgarh State Electricity Board  
P.O. Sunder Nagar, Dangania, Raipur  
Chhattisgarh – 492 013
8. Madhya Pradesh Audyogik Kendra  
Vikas Nigam(Indore) Ltd.  
3/54, Press Complex, Agra-Bombay Road,  
Indore – 452 008

.....**Respondents**

The following were present:-

For Petitioner: 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 filed by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of tariff for Combined assets of Ranchi: (i) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-I Ckt II transmission line along with associated bays at Ranchi (old) and Ranchi (New); (ii) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-II transmission line along with associated bays at Ranchi (old) and Ranchi (New);(iii) 765 / 400 kV 3x500 MVA ICT I at along with associated bays at 765 kV Ranchi (New) Sub-station under Common Scheme for 765 kV Pooling Stations and Network for NR (Common for Sasan UMPP+NKP+Maithon/Koderma/Mejia/Bokaro/Raghunathpur/Durgapur+Import by NR from ER and from NER/SR/WR via ER) and Common scheme for network for WR (Common for NKP+Maithon/Koderma/Mejia/Bokaro/Raghunathpur/Durgapur+Import by WR from ER and from NER/SR/WR via ER) in Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from 1.4.2014 to 31.3.2019.

2. The respondents are 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 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 Memorandum No. C/CP/DVC and



Maithon RB Project dated 29.8.2008 at an estimated cost of ₹707533 lakh, which included IDC of ₹71360 lakh. Further, RCE for the project was accorded by Board of Directors of the petitioner company vide Memorandum No. C/CP/RCE-DVC and Maithon RB Project dated 11.3.2016 at an estimated cost of ₹657054 lakh including IDC of ₹67714 lakh. The revised approved apportioned cost for the instant asset is ₹43092.09 lakh.

(b) The scope of the instant project is as under:-

**Transmission Lines:**

1. Maithon-Gaya 400 kV Quad D/C line alongwith multi-circuit portion in common forest stretch.
2. Gaya – Sasaram 765 kV S/C line
3. Gaya – Balia 765 kV S/C line
4. Balia – Lucknow 765 kV S/C line
5. Ranchi – WR Pooling Station 765 kV S/C line
6. Lucknow 765 / 400 kV new sub-station – Lucknow 400/220 kV existing sub station 400 kV quad D/c line
7. Ranchi 765/400 kV new sub-station – Ranchi 400/220 kV existing sub-station 400 kV Quad 2xD/c line
8. LILO of both circuits of Allahabad- Mainpuri 400 kV D/C line at Fatehpur 765/400 kV sub-station of POWERGRID
9. LILO of Barh-Balia 400 kV Quad D/C line at Patna

**Sub-stations:**

1. Augmentation of Maithon 400/220 kV sub-station
  - a. 2 nos of 400 kV line bays (for terminating Maithon-Gaya D/C line)
  - b. 2 nos of 400 kV line bays (for terminating Mejia-Maithon D/C line)
2. New 765/400 kV sub-station at Gaya
  - c. 3x1500 MVA, 765/400 kV Transformer alongwith associated bays
  - d. 2 nos. of 765 kV line bays (for Gaya-Sasaram & Gaya-Balia 765 kV lines)



- e. 4 nos.of 400 kV line bays (for Maithon-Gaya line & Kodarm-Gaya line)
3. New 765/400 kV sub-station at Sasaram
- f. 2x1500 MVA, 765/400 kV Transformer alongwith associated bays
- g. 2 nos.of 765 kV line bays (for Gaya-Sasaram 765 kV S/C & Sasaram - Fatehpur 765 kV S/c)
- h. 2 nos.of 400 kV bays (for Biharshariff-Sasaram 400 kV quad D/c line)
- \*Note: New 765 / 400 kV sub-station at Sasaram is to be accommodated in the premises of existing Sasaram sub-station.
4. Augmentation of Biharshariff 400/220 kV sub-station
- i. 2 nos of 400 kV bays (for Biharshariff – Sasaram 400 kV Quad D/C line)
5. New 765/400 kV sub-station at Fatehpur
- j. 2x1500 MVA, 765/400 kV Transformer alongwith associated bays
- k. 2 nos.of 765 kV line bays (for Sasaram-Fatehpur & Fatehpur-Agra 765 kV lines)
- l. 4 nos.of 400 kV line bays (for LILO of Allahabad-Mainpuri 400 kV D/c line)
6. Augmentation of 400 kV Agra sub-station to 765 kV
- m. 2x1500 MVA, 765/400 kV transformer alongwith associated bays
- n. 1 nos of 765 kV line bay (for Fatehpur-Agra 765 kV line)
7. Augmentation of 400 kV Balia sub-station to 765 kV
- o. 2x1500 MVA, 765/400 kV transformer alongwith associated bays
- p. 2 nos of 765 kV line bay (for Gaya-Balia & Balia-Lucknow 765 kV lines)
8. New 765/400 kV sub-station at Lucknow
- q. 2x1500 MVA, 765/400 kV transformer alongwith associated bays
- r. 1 nos of 765 kV line bay (for Balia-Lucknow 765 kV line)
- s. 2 nos.of 400 kV bays (for Lucknow 765/400 kV new sub-station – Lucknow 400/220 kV existing sub-station 400 kV quad D/c line)
9. Augmentation of existing Lucknow 400/220 kV sub-station
- t. 2 nos.of 400 kV bays (for Lucknow 765/400 kV new sub-station – Lucknow 400/220 kV existing sub-station 400 kV quad D/c line)



10. New 2x1500 MVA, 765/400 kV sub-station at Ranchi
- u. 1 nos of 765 kV line bays (for Ranchi-WR Pooling 765 kV S/C line)
  - v. 4 nos. of 400 kV bays (for Ranchi 400 kV new sub-station – Ranchi 400/220 kV existing sub-station 400 kV quad 2xD/c line)
11. Augmentation of Ranchi 400/220 kV sub-station
- w. 6 nos. of 400 kV bays (4 nos. for Ranchi 765/400 kV new sub-station – Ranchi 400/220 kV existing sub-station 400 kV quad 2xD/c line and 2 nos. for Raghunathpur TPS – Ranchi line)
12. 765/400 kV WR Pooling sub-station
- x. 1 nos. of 765 kV line bays (for Ranchi – WR Pooling 765 kV S/C line)
13. Augmentation of Patna 400/220 kV sub-station
- y. 4 nos. of 400 kV line bay (for LILO of Barh-Balia 400 kV Quad line)

(c) The date of the commercial operation of the instant transmission asset was 1.4.2014. The petitioner has submitted certificate issued by WRLDC in support of the claim of trial operation for declaring commercial operation. The petitioner has also submitted the single line diagram of the transmission asset.

(d) The petitioner has claimed the following transmission charges for the instant asset:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2052.28	2349.25	2460.91	2460.91	2460.91
Interest on Loan	2485.45	2657.45	2574.74	2345.49	2118.56
Return on Equity	2356.77	2695.11	2822.08	2822.08	2822.08
Interest on Working Capital	193.95	213.70	218.50	214.47	210.54
O&M Expenses	638.11	659.32	681.13	703.83	727.14
<b>Total</b>	<b>7726.55</b>	<b>8574.83</b>	<b>8757.36</b>	<b>8546.78</b>	<b>8339.23</b>



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

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	95.72	98.90	102.17	105.57	109.07
O & M Expenses	53.18	54.94	56.76	58.65	60.60
Receivables	1287.76	1429.14	1459.56	1424.46	1389.87
<b>Total</b>	<b>1436.66</b>	<b>1582.98</b>	<b>1618.49</b>	<b>1588.68</b>	<b>1559.54</b>
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>193.95</b>	<b>213.70</b>	<b>218.50</b>	<b>214.47</b>	<b>210.54</b>

4. The Annual transmission charges for the instant asset was allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the Point of Connection (POC) charges vide order dated 19.6.2014. The petitioner has submitted additional information vide affidavits dated 8.1.2016 and 10.3.2016.

5. The petitioner has served the petition to the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the 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. The hearing in this matter was held on 14.3.2016. None of the respondents have filed their reply. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.



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

6. The petitioner has claimed the date of the commercial operation of the instant transmission asset as 1.4.2014. 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  
xxx”

7. The petitioner has submitted WRLDC Certificate indicating completion of successful trial operation in accordance with Regulation 5 of the 2014 Tariff Regulations. Accordingly, the commercial operation date of the transmission asset has been considered as 1.4.2014 and the tariff is worked out from 1.4.2014 to 31.3.2019.

## **Capital Cost**

8. The petitioner has claimed capital cost of ₹36467.78 lakh as on date of commercial operation i.e. 1.4.2014 vide Auditor certificate dated 8.5.2014. The petitioner has also clarified that the capital cost also includes the cost of initial spares, interest during construction and incidental expenditure during





construction. The petitioner has submitted item wise break up of each element of capital cost in form 5 of the petition. The petitioner's claim of capital cost is as under:-

<b>Cost as per revised Investment Approval is ₹43092.09 lakh</b>							
Admitted capital cost as on COD	Additional capitalization projected					Total additional capitalization	Total capital cost including additional capitalisation as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19		
<b>36467.78</b>	<b>7185.80</b>	<b>4316.53</b>	-	-	-	<b>11502.33</b>	<b>47970.11</b>

9. Regulation 9 (1) and (2) and 10 (1) of the 2014 Tariff Regulations specify 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.”

10. The capital cost of ₹36467.78 lakh as on COD has been considered to work out the tariff subject to prudence check as discussed in subsequent paragraphs.

### **Time over-run**

11. As per the investment approval dated 29.8.2008, the scheme was scheduled to be commissioned within 48 months from the date of investment approval. Accordingly, the schedule completion date works out to 1.9.2012. However, the actual commissioning of the subject asset was 1.4.2014. The petitioner has submitted that there is a delay of 578 days (19 months) in commissioning of subject transmission assets.

12. The petitioner has submitted, vide affidavit dated 10.3.2016, the following reasons for time over-run:-

- a) **Delay in getting forest clearance**-The forest land was involvement in the two transmission lines i.e. (i) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-I Ckt II transmission line along with associated bays at Ranchi (old) and Ranchi (New); (ii) 400 kV D/C (Quad) Ranchi (old)-Ranchi (New)-II transmission line along with associated bays at Ranchi (old) and Ranchi (New); is 13.375 Ha Ranchi-Ranchi (New) Line-I and 12.461 Ha in Ranchi-



Ranchi (New)-II. The proposal for diversion of forest land was submitted on 14.11.2009 to the Nodal Officer, Jharkhand State Forest Department, Ranchi, Jharkhand. The State Government forwarded the proposal for seeking the prior approval of Central Government in accordance with Section 2 of the Forest (Conservation) Act, 1980 for diversion of forest land for construction of subject transmission lines. The Stage-I clearance was issued on 2.3.2012 by Eastern Regional Office, Bhubaneswar, Ministry of Environment & Forest, Government of India. On compliance of all the conditions stipulated in Stage-I clearance, the State Government forwarded a letter to Eastern Regional Office, Bhubaneswar, Ministry of Environment & Forest, Government of India. Central Government granted approval on 5.3.2013 for diversion of forest land for construction of subjected 400 kV D/C transmission lines subject to fulfilment of conditions. Final clearance was issued in November, 2013, i.e. total after 4 years. The petitioner has submitted there was severe ROW issues in the preliminary survey stage itself which did not allow the petitioner to make early submission of forestclearance proposal to concerned authorities. The chronology of events related to forest clearances submitted by the petitioner are as follows:-

Submission of Forest proposal	14-11-2009
Stage I clearance issued by RMoEF, Bhubaneswar	2-3-2012
Stage II clearance issued by RMoEF, Bhubaneswar	5-3-2013
Final Clearance Issued	13-11-2013
Tree Felling order received	9-12-2013

- b) **Delay due to infringement with National Highways-** Section-I & II of Ranchi Ring road was selected as Ranchi bye pass by NHAI and Route alignment of both transmission lines were infringing with the proposed alignment of Ring road around Ranchi. So, works of construction was stopped by district administration with advice to divert route of the



transmission lines. The RCD (Road construction Department), Principal Secretary issued letter advising to stop the construction of line on the approved alignment on 23.2.2012. Later, after lot of persuasion NHAI finally issued NOC for construction of the line maintaining requisite clearances for safety as on 10.10.2013.

- c) **Delay in land acquisition at Ranchi**-Almost 36 months after depositing payment of land to the revenue authority of Government of Jharkhand, the physical possession of land was granted on 12.12.2012.
- d) **Delay due to law and order problem**- The delay due to disturbance caused by Maoist activities was continuous/frequent in nature. The exact period of delay due to these activities could not be quantified although its effect was always in the adverse side in progress of the project. The copy of FIR was launched after havoc caused by Maoists at construction site on 15.1.2011. Letter of Deputy to IG, Police, Ranchi was issued confirming police protection of labour gangs in Ranchi district. The petitioner has submitted that the delay was beyond its control and sought condonation of time over-run.

13. We have considered the submissions of the petitioner. There has been delay of 578 days (about 19 months) in the commissioning of the assets. The petitioner has claimed that the reasons for time over-run were due to delay in approval of forest clearances, delay due to ROW issues, delay in land acquisition at Ranchi and due to law and order problem at Ranchi Sub-station. It is observed that the substantial time was lost on two counts. First, is due to forest clearance where there were severe ROW issues in preliminary survey stage itself due to which forest clearance proposal was delayed. The petitioner has submitted the relevant documents regarding the same. The final clearance was issued on

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13.11.2013 and tree felling order on 9.12.2013, i.e. almost 4 years for obtaining the required clearance. The petitioner has also submitted the relevant documents regarding delay due to infringement of transmission lines with National Highways and delay due to land acquisition at Ranchi. As such, the delay due to forest clearances, ROW, land acquisition for sub-station at Ranchi is beyond the control of the petitioner.

14. The question therefore arises whether under the facts and circumstances of the case, the time over-run shall be attributable to the petitioner. The Hon'ble Appellate Tribunal for Electricity in its judgment dated 27.4.2011 in Appeal No.72/2010 has laid down the principle to be followed to determine the liability for time over-run in three scenarios as under:-

- (a) Due to factors entirely attributable to the project developer;
- (b) Due to the factors beyond the control of project developer; and
- (c) Not covered under (a) and (b).

15. In the first scenario, the additional cost due to time over-run would be entirely borne by the project developer and the LD amount, if any, would be retained by them. In the second scenario, the additional cost due to time over-run shall be capitalized, however, the benefit of LD and the insurance proceeds, if any, to be reduced from the capital cost. In the last scenario, the additional cost due to time over-run including LD and insurance proceeds could be shared between the project developer and the beneficiaries.



16. In the present case, against the delay of 578 days in commissioning of subject asset, the delay was mainly on account of forest clearance approval and ROW as evidenced by the petitioner which is beyond the control of the petitioner and is covered in the second scenario as the events responsible for the delay cannot be attributed to the petitioner. Accordingly, we condone the delay of 578 days.

**Cost over-run**

17. The total estimated completion cost as on 31.3.2019 submitted by the petitioner along with the instant petition is ₹47970.11 lakh which is exceeding the apportioned approved cost of ₹38629.76 lakh which was based on the investment approval. The petitioner has submitted that the cost variation is mainly due to:

- a. The cost increased on account of higher award cost received in competitive bidding.
- b. The variation is due to actual compensation as offered by District authorities & Forest department.
- c. There has been increase in route length over FR Route length in order to minimize the involvement of forest area and also to avoid infringement of route of the line with that of proposed ring road around Ranchi which was not envisaged at FR stage.
- d. Higher cost of land compensation awarded by district administration compared to that of FR provisions.



18. The petitioner vide affidavit dated 11.3.2016 has submitted the Revised Cost Estimate (RCE) approved by Board of the petitioner company. The petitioner has also submitted the revised approved apportioned cost of the subject asset as ₹43092.09 lakh.

19. The petitioner was directed to submit the clarification regarding mismatch between transmission line length in project scope and Form-2. The petitioner, vide affidavit dated 8.1.2016, has submitted that line length considering FR is based on preliminary information about Ranchi city. Ranchi(New)-Ranchi (Old) sub-station are located at opposite ends of the Ranchi city, line connecting the sub-station has to transverse along the periphery of the city boundary. There has been unprecedented growth in the Ranchi city after creation of Jharkhand State, as Ranchi is its capital. So, the line length in NIT was taken as 70 km. However, as per actual execution the final route length of the line has become 77 to 78 km. Thus, approximately 7 to 8 km increase in route length is due to NH and other factor. The petitioner has also submitted the diagram of the transmission lines.

20. The petitioner was directed vide letter dated 29.7.2015 to submit the computation of IDC from date of infusion of debt fund upto SCOD as per Regulation 11(A) of the 2014 Tariff Regulations and from SCOD to actual COD of the asset. Further, the petitioner was directed to submit the details of IEDC during the period of delay in commissioning of the Asset (i.e. SCOD to actual COD). The details submitted by the petitioner is as follows:-



(₹ in lakh)			
Particulars	Upto SCOD	SCOD to Actual COD	Total
IDC	4023.41	1426.86	<b>5450.27</b>
IEDC	358.95	127.3	<b>486.25</b>

21. The petitioner has submitted the statement showing the IDC discharged upto COD wherein it has stated that entire IDC of ₹5450.27 lakh has been discharged up to COD. We have considered the revised apportioned approved cost as per RCE for the computation of tariff.

**Treatment of initial spares:**

22. 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:-

- “(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%”

23. The petitioner has claimed initial spares of ₹214.00 lakh and ₹444.14 lakh for transmission line and sub-station respectively for the subject asset.

24. The petitioner was directed to submit whether entire capital expenditure pertaining to initial spares is included in the cost of respective element upto COD. The petitioner was directed to clarify whether entire liability pertaining to initial spares has been discharged as on COD and submit the year wise details of





discharging the same among sub-station and transmission line. The petitioner vide affidavit dated 8.1.2016 has submitted the liability of initial spares discharged. The details are as given below:-

(₹ in lakh)			
Asset	Transmission Line	Sub-station	Total
Initial Spares upto COD and includes as per Auditor's Certificate	177.27	52.56	<b>229.83</b>
2014-15 Add cap in Auditor's Certificate	-	106.75	<b>106.75</b>
2015-16 Add Cap in Auditor's Certificate	36.73	284.83	<b>321.56</b>
Total	214.00	444.14	<b>658.14</b>

25. The initial spares are calculated considering the percentage of initial spares to the total cost i.e. plant and machinery cost excluding IDC, IEDC, land cost and cost of civil works as per the Auditor's certificate dated 8.5.2014. It is observed that the initial spares for transmission line (0.96%) and sub-station (2.46%) as claimed by the petitioner are within the ceiling limits specified in the 2014 Tariff Regulations.

26. The petitioner has claimed capital cost of ₹36467.78 lakh as on COD in the petition and additional capitalization of ₹7185.80 lakh and ₹4316.53 lakh for the years 2014-15 and 2015-16. We have considered the capital cost of ₹36467.78lakh as on 31.3.2014 (including IDC and IEDC discharged upto COD) for determination of tariff for the 2014-19 tariff period.



### **Additional Capital Expenditure**

27. The petitioner has proposed additional capitalization of ₹7185.80 lakh and ₹4316.53 lakh for the years 2014-15 and 2015-16 respectively towards balance and retention payment under Regulation 14(1)(i) of 2014 Tariff Regulations. It is observed that total estimated completion cost of ₹47970.11 lakh including the additional capitalization of ₹7185.80 lakh and ₹4316.53 lakh is exceeding the approved apportioned cost of ₹43092.09 lakh. Accordingly, total estimated completion cost including additional capitalization for the 2014-19 tariff period is restricted to the revised approved apportioned cost of ₹43092.09 lakh. Additional capitalization of only ₹6624.31 lakh during 2014-15 is allowed under Regulation 14(1)(i) of the 2014 Tariff Regulations.

(₹ in lakh)

<b>Cost as per revised Investment Approval is ₹43092.09 lakh</b>							
Admitted capital cost as on COD	Additional capitalization projected					Total additional capitalization	Total capital cost including additional capitalisation as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19		
<b>36467.78</b>	6624.31	-	-	-	-	<b>6624.31</b>	<b>43092.09</b>

### **Debt:Equity Ratio**

28. 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:

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



- iii. 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.”

29. 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. The details of the debt:equity as on the date of COD, i.e 1.4.2014 and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Asset	As on 1.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	25527.45	70.00	4637.02	70.00	30164.46	70.00
Equity	10940.33	30.00	1987.29	30.00	12927.63	30.00
<b>Total</b>	<b>36467.78</b>	<b>100.00</b>	<b>6624.31</b>	<b>100.00</b>	<b>43092.09</b>	<b>100.00</b>

### **Interest on Loan (“IOL”)**

30. 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.”



31. The petitioner was directed vide affidavit dated 29.7.2015 to submit details of default in case there is any default in the interest payment on any loan mentioned at Form-9C. The petitioner vide affidavit dated 8.1.2016 has submitted that there is no default in the interest payment.

32. 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 the 2014-19 tariff period from the respondents will be considered at the time of trying up. The details of weighted average rate of interest are placed at **Annexure-I** and the IOL has been worked out as follows:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	25527.45	30164.46	30164.46	30164.46	30164.46
Cumulative Repayment upto previous year	0.00	2037.80	4246.43	6455.06	8663.69
Net Loan-Opening	25527.45	28126.67	25918.04	23709.41	21500.77
Additions during the year	4637.02	0.00	0.00	0.00	0.00
Repayment during the year	2037.80	2208.63	2208.63	2208.63	2208.63
Net Loan-Closing	28126.67	25918.04	23709.41	21500.77	19292.14
Average Loan	26827.06	27022.35	24813.72	22605.09	20396.46
Rate of Interest (%)	9.1999	9.2140	9.2130	9.2030	9.2011
<b>Interest</b>	<b>2468.05</b>	<b>2489.85</b>	<b>2286.08</b>	<b>2080.35</b>	<b>1876.69</b>



## **Return on Equity("ROE")**

33. Clause (1)& (2) of Regulation 24 and Clause (2) of Regulation 25(2) 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

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."

34. The petitioner has claimed ROE at the rate of 20.961% after grossing up the ROE of 15.5% with MAT rate as per the above said Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial



year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

35. 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.

36. The petitioner was directed vide affidavit dated 29.7.2015 to submit the working of effective tax on ROE as per Regulation 25 while arriving at the tariff in the petition. The petitioner vide affidavit dated 8.1 2016 has submitted that, as per estimate, the petitioner will be paying income as per MAT for 2014-15. Therefore, grossing up of ROE as prescribed in Regulation 25 of the 2014 Tariff Regulations will be as per illustration given in the Regulation.

37. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with



actual effective 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)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	10940.33	12927.63	12927.63	12927.63	12927.63
Additional Capitalization	1987.29	0.00	0.00	0.00	0.00
Closing Equity	12927.63	12927.63	12927.63	12927.63	12927.63
Average Equity	11933.98	12927.63	12927.63	12927.63	12927.63
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
Tax 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>2340.25</b>	<b>2535.11</b>	<b>2535.11</b>	<b>2535.11</b>	<b>2535.11</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 pumped storage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years”

40. The petitioner has claimed depreciation considering capital expenditure of ₹36467.78 lakh as on 1.4.2014 with additional capitalization of ₹7185.80 lakh and ₹4316.53 lakh for the 2014-19 tariff period.

41. We have computed depreciation considering capital expenditure of ₹36467.78 lakh as on 1.4.2014 and additional capitalization of ₹6624.31 lakh during 2014-15. The weighted average useful life of the asset has been considered as 32 years in accordance with the above regulation. The details of the depreciation allowed are given hereunder:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	36467.78	43092.09	43092.09	43092.09	43092.09
Additional Capitalization	6624.31	0.00	0.00	0.00	0.00
Closing Gross block	43092.09	43092.09	43092.09	43092.09	43092.09
Average Gross block	39779.94	43092.09	43092.09	43092.09	43092.09
Rate of Depreciation (%)	5.123	5.125	5.125	5.125	5.125
Depreciable Value	34752.46	37695.65	37695.65	37695.65	37695.65





Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	32	31	30	29	28
Remaining Depreciable Value	34752.46	35657.85	33449.22	31240.59	29031.96
<b>Depreciation</b>	<b>2037.80</b>	<b>2208.63</b>	<b>2208.63</b>	<b>2208.63</b>	<b>2208.63</b>

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

42. Regulation 29(4)(a) of the 2014 Tariff Regulations specifies the following norms for O&M Expenses:-

Particulars		2014-15	2015-16	2016-17	2017-18	2018-19
Norms as per Regulation	<b>₹ lakh/Bay</b>					
	765 kV Bays	84.42	87.22	90.12	93.11	96.20
	400 kV Bays	60.30	62.30	64.37	66.51	68.71
	<b>₹ lakh/km</b>					
	Single Circuit (Bundled Conductor with four sub-conductors)	0.606	0.627	0.647	0.669	0.691
	Double Circuit (Bundled conductor with four or more sub-conductors)	1.062	1.097	1.133	1.171	1.21
	Multi Circuit (Bundled conductor with four or more sub-conductors)	1.863	1.925	1.989	2.055	2.123
No of Bays (Nos)	765 kV Bays	1	1	1	1	1
	400 kV Bays	7	7	7	7	7
Line Length (km)	Single Circuit (Bundled Conductor with four sub-conductors)	76.404	76.404	76.404	76.404	76.404
	Double Circuit (Bundled conductor with four or more sub-conductors)	78.716	78.716	78.716	78.716	78.716
	Multi Circuit (Bundled conductor with four or more sub-conductors)	0.907	0.907	0.907	0.907	0.907
<b>Total</b>		<b>638.11</b>	<b>659.32</b>	<b>681.13</b>	<b>703.83</b>	<b>727.14</b>



43. The petitioner has claimed O&M Expenses as specified in sub-clause (a) of clause (4) of Regulation 29 of the 2014 Tariff Regulations.

44. The petitioner was directed vide letter dated 29.7.2015 to clarify that in Form-2 of the petition Asset: 400 kV D/C (Quad) Ranchi (Old)-Ranchi (New)-I ckt-II transmission line has been described as single circuit line and total number of sub-station bays mentioned are 7 numbers. The petitioner vide affidavit dated 8.1.2016 has submitted that, there are 8 bays claimed in which 7 nos. are 400 kV and 1 no is 765 kV bay as elaborated below:-

Srl. No.	Name of Asset	Bays at Ranchi New		Bays at Ranchi Old	
1	400 KV D/C (Quad) Ranchi (old) – Ranchi (New)-I Ckt II transmission line along with associated bays at Ranchi (old) and Ranchi (New);		1		1
2	400 KV D/C (Quad) Ranchi (old) – Ranchi (New)-II transmission line along with associated bays at Ranchi (old) and Ranchi (New)		2		2
3	ICT I at Ranchi New 765/400 kV	1	1		
<b>Total</b>		<b>1</b>	<b>4</b>		<b>3</b>

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

Asset	(₹ in lakh)				
	Year				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses	<b>638.11</b>	<b>659.32</b>	<b>681.13</b>	<b>703.83</b>	<b>727.14</b>

46. 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.

47. 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”)**

48. 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).

49. The interest on working capital allowed is shown in the table below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	95.72	98.90	102.17	105.58	109.07
O & M expenses	53.18	54.94	56.76	58.65	60.59
Receivables	1279.51	1349.31	1318.40	1287.31	1256.69
Total	1428.40	1503.15	1477.33	1451.54	1426.35
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
<b>Interest</b>	<b>192.83</b>	<b>202.92</b>	<b>199.44</b>	<b>195.96</b>	<b>192.56</b>

### Annual Transmission Charges

50. 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	2014-15	2015-16	2016-17	2017-18	2018-19
<b>Gross Block</b>					
Opening Gross Block	36467.78	43092.09	43092.09	43092.09	43092.09
Additional Capitalization	6624.31	0.00	0.00	0.00	0.00
Closing Gross Block	43092.09	43092.09	43092.09	43092.09	43092.09
Average Gross Block	39779.94	43092.09	43092.09	43092.09	43092.09
Rate of Depreciation	5.123	5.125	5.125	5.125	5.125
Depreciable Value	34752.46	37695.65	37695.65	37695.65	37695.65
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	32	31	30	29	28
Remaining Depreciable Value	34752.46	35657.85	33449.22	31240.59	29031.96
Depreciation	2037.80	2208.63	2208.63	2208.63	2208.63
<b>Interest on Loan</b>					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	25527.45	30164.46	30164.46	30164.46	30164.46
Cumulative Repayment upto Previous Year	0.00	2037.80	4246.43	6455.06	8663.69
Net Loan-Opening	25527.45	28126.67	25918.04	23709.41	21500.77
Additions	4637.02	0.00	0.00	0.00	0.00
Repayment during the year	2037.80	2208.63	2208.63	2208.63	2208.63
Net Loan-Closing	28126.67	25918.04	23709.41	21500.77	19292.14
Average Loan	26827.06	27022.35	24813.72	22605.09	20396.46
Weighted Average Rate of Interest on Loan (%)	9.1999	9.2140	9.2130	9.2030	9.2011
Interest	2468.05	2489.85	2286.08	2080.35	1876.69
<b>Return on Equity</b>					
Opening Equity	10940.33	12927.63	12927.63	12927.63	12927.63
Additions	1987.29	0.00	0.00	0.00	0.00
Closing Equity	12927.63	12927.63	12927.63	12927.63	12927.63
Average Equity	11933.98	12927.63	12927.63	12927.63	12927.63
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	2340.25	2535.11	2535.11	2535.11	2535.11
<b>Interest on Working Capital</b>					
Maintenance Spares	95.72	98.90	102.17	105.58	109.07
O & M expenses	53.18	54.94	56.76	58.65	60.59
Receivables	1279.51	1349.31	1318.40	1287.31	1256.69
<b>Total</b>	<b>1428.40</b>	<b>1503.15</b>	<b>1477.33</b>	<b>1451.54</b>	<b>1426.35</b>
Interest	192.83	202.92	199.44	195.96	192.56
<b>Annual Transmission Charges</b>					
Depreciation	2037.80	2208.63	2208.63	2208.63	2208.63
Interest on Loan	2468.05	2489.85	2286.08	2080.35	1876.69
Return on Equity	2340.25	2535.11	2535.11	2535.11	2535.11
Interest on Working Capital	192.83	202.92	199.44	195.96	192.56
O & M Expenses	638.11	659.32	681.13	703.83	727.14
<b>Total</b>	<b>7677.04</b>	<b>8095.84</b>	<b>7910.40</b>	<b>7723.88</b>	<b>7540.13</b>



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

51. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

### **Licence Fee and RLDC Fees and Charges**

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

### **Service Tax**

53. 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 of Service Tax is premature.



### **Sharing of Transmission Charges**

54. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 43 of the 2014 Tariff Regulations.

55. This order disposes of Petition No. 105/TT/2014.

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

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





**ANNEXURE-I****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19**

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
BOND XXVIII-LOAN 1-	9.33	1000.00	0.00	1000.00
BOND XXIX-LOAN 2-	9.20	500.00	0.00	500.00
BOND XXX-LOAN 3-	8.80	2000.00	0.00	2000.00
BOND XXXI-LOAN 4-	8.90	200.00	0.00	200.00
BOND XXXIII-LOAN 6-	8.64	3000.00	0.00	3000.00
BOND XXXII-LOAN 5-	8.84	500.00	0.00	500.00
BOND-XXXV-LOAN 6-	8.84	4275.00	0.00	4275.00
BOND-XXXV-LOAN 8-	9.64	500.00	0.00	500.00
BOND XXXVIII-LOAN 9-	9.25	100.00	0.00	100.00
BOND XXXIX-LOAN 10-	9.40	100.00	0.00	100.00
SBI (21.03.2012)	10.25	7964.00	0.00	7964.00
BOND XL-LOAN 12-	9.30	878.00	0.00	878.00
BOND-XLI-LOAN 13-	8.85	1000.00	0.00	1000.00
BOND-XLIII-LOAN 14	7.93	3510.45	0.00	3510.45
<b>Total</b>		<b>25527.45</b>	<b>0.00</b>	<b>25527.45</b>

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	25527.45	25527.45	25527.45	25527.45	25527.45
Cumulative Repayments of Loans upto Previous Year	475.01	1431.27	2429.20	4307.65	6478.64
Net Loans Opening	25052.44	24096.18	23098.25	21219.80	19048.81
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	956.26	997.93	1878.45	2170.99	2170.99
Net Closing Loan	24096.18	23098.25	21219.80	19048.81	16877.82
Average Net Loan	24574.31	23597.22	22159.03	20134.31	17963.32
<b>Rate of Interest on Loan (%)</b>	<b>9.1999</b>	<b>9.2140</b>	<b>9.2130</b>	<b>9.2030</b>	<b>9.2011</b>
Interest on Loan	2260.80	2174.26	2041.51	1852.96	1652.82

