

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 45/TT/2014**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson  
Shri A.S. Bakshi, Member**

**Date of Hearing : 10.09.2015**

**Date of Order : 15.02.2016**

**In the matter of:**

Approval of transmission tariff for Asset-1: 765 kV D/C Champa Pooling Station-Raipur Pooling Station Transmission line with associated bays at Raipur PS (Anticipated COD: 1.3.2014) under Establishment of Pooling Stations at Champa and Raigarh (near Tamnar) for IPP Generation Projects in Chattisgarh (Set "B"/WR1-IPPB) in Western Region for tariff block 2009-14 under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009

**And in the matter of:**

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

.....**Petitioner**

**Vs**

1. Madhya Pradesh Power Management Company Limited,  
Shakti Bhawan, Rampur, Jabalpur-482 008
2. Maharashtra State Electricity Distribution Company Limited,  
Prakashgad, 4th floor,  
Andheri (East), Mumbai-400 052
3. Gujarat Urja Vikas Nigam Limited,  
Sardar Patel Vidyut Bhawan,  
Race Course Road, Vadodara-390 007
4. Electricity Department,  
Government of Goa,  
Vidyut Bhawan, Panaji,  
Near Mandvi Hotel, Goa-403 001



5. Electricity Department,  
Administration of Daman and Diu,  
Daman-396 210
6. Electricity Department,  
Administration of Dadra Nagar Haveli,  
U.T., Silvassa-396 230
7. Chhattisgarh State Electricity Board,  
P.O. Sunder Nagar, Dangania, Raipur,  
Chhattisgarh-492 013
8. Madhya Pradesh Audyogik Kendra,  
Vikas Nigam (Indore) Limited,  
3/54, Press Complex, Agra-Bombay Road  
Indore-452 008

.....Respondents

**For petitioner** : Shri S.K. Venkatesan, PGCIL  
Shri M.M. Mondal, PGCIL  
Shri A.M. Pavgi, PGCIL  
Shri Mohd. Mohsin, PGCIL

**For respondent** : None

### **ORDER**

This petition has been filed by Power Grid Corporation of India Limited (PGCIL) for approval of the transmission charges of 765 kV D/C Champa Pooling Station-Raipur Pooling Station Transmission line with associated bays at Raipur PS (hereinafter referred to as "transmission asset") under Establishment of Pooling Stations at Champa and Raigarh (near Tamnar) for IPP Generation Projects in Chattisgarh (Set "B"/WR1-IPPB) in Western Region from the date of commercial operation to 31.3.2014 for tariff block 2009-14 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2009 (hereinafter referred to as the "2009 Tariff Regulations").



2. The Investment Approval (IA) of the project was accorded by the Board of Directors of PGCIL vide memorandum ref. C/CP/Chhattisgarh-IPP dated 31.5.2011 at an estimated cost of ₹196187 lakh including IDC of ₹12572 lakh (based on 4th quarter, 2010 price level). The project was scheduled to be commissioned within 36 months from the date of IA by 30.5.2014 i.e. 1.6.2014. The scope of project broadly includes:-

**Transmission Lines:**

- 1) Champa Pooling Station-Raipur Pooling Station 765 kV D/C line : 150 km
- 2) Raigarh Pooling Station (near Kotra)-Raigarh Pooling Station (near Tamnar)  
765 kV D/C line : 50 km
- 3) Champa Pooling Station-Dharamjaygarh/near Korba Switching Station 765 kV  
D/C line : 50 km
- 4) Raigarh Pooling Station (near Kotra)-Champa Pooling Station 765 kV S/C line  
: 105 km

**Sub-stations:**

- 1) Establishment of 765/400 kV, 6x1500 MVA Champa Pooling Station
- 2) Establishment of 765/400 kV, 3x1500 MVA Raigarh Pooling Station (near Tamnar)
- 3) Bay extensions at 765/400 kV Raigarh Pooling Station (near Kotra), 765 kV Raipur Pooling Station and Dharamjaygarh Pooling Station

3. The petitioner has initially claimed transmission tariff for the instant transmission asset from the anticipated COD i.e. 1.3.2014 to 31.3.2014 under the 2009 Tariff Regulations. However, the petitioner, vide affidavit dated 7.3.2014 has submitted the revised anticipated COD as 1.4.2014 and prayed to allow PoC charges as per the 2014 Tariff Regulations. Thereafter, the petitioner vide affidavit dated 25.6.2015 submitted that the instant asset i.e. 765 kV D/C Champa Pooling Station-Raipur



Pooling Station Transmission line with associated bays at Raipur PS under Establishment of Pooling Stations at Champa and Raigarh (near Tamnar) for IPP Generation Projects in Chattisgarh (Set "B"/WR1-IPPB) has been split into two parts, viz- **Asset-1(a)**: Champa Pooling Station-Raipur Pooling Station 765 kV D/C line with associated bays at Raipur PS and **Asset-1(b)**: Bay extension at 765 kV Raipur PS with Line shunt reactor for 765 kV Champa-1 line bay-Charged as Bus Reactor, which have been put under commercial operation on 24.5.2014 and 26.5.2014. Thus, this order covers transmission tariff, based on expenditure incurred for the instant assets during the period from COD to 31.3.2019.

4. The Commission, during hearing on 10.9.2015 observed that RPC is the appropriate body to approve the use of Line Reactors as Bus Rectors and directed the petitioner to obtain the approval of the RPC and submit the same to the Commission. The petitioner was also directed to submit the following information:-

- a) RLDC charging certificate of the instant assets;
- b) CEA certificate under Regulation 43 of CEA (Measures Related to Safety & Electricity Supply) Regulations, 2010;
- c) RPC approval for charging line reactor as bus reactor;
- d) Voltage profile of 765 kV Raipur Pooling Station before and after commissioning of the line reactor as bus reactor;
- e) Reason for charging of line reactor as bus reactor, when the line (765 kV Raipur-Champa D/C) was charged;
- f) Status of Champa Pooling Sub-station;
- g) Explain the time frame upto which, the contingency arrangements would continue, as there is only partial benefit of line and lower reliability of lines by bunching of two circuits at both ends, during contingency arrangements;

5. In response, the petitioner vide affidavit dated 15.12.2015 has submitted the certificate of completion of trial operation of transmission elements issued by



WRLDC, CEA certificate for approval of energisation under Regulation 43 of CEA (Measures Related to Safety & Electricity Supply) Regulations, 2010, WRPC certification for charging line reactor as bus reactor bringing out the benefits to the National/Regional grid and Voltage profile of 765 kV Raipur (Durg) Pooling Station before and after commissioning of line reactor as bus reactor. The petitioner has further submitted as under:-

a. 765 kV D/C Champa-Raipur T/L and 765 kV S/C Champa-Dharamjaygarh T/L were to emanate from Champa Pooling station. However, due to non-readiness of Champa PS (due to unforeseen delay in land acquisition) not attributable to the petitioner, the Raipur PS-Champa PS 765 kV D/C line was bunched at both ends (so as to form one ckt). One end was terminated at one no. 765 kV line bay at Raipur PS whereas other end is connected to Champa PS-Dharamjaygarh PS 765 kV S/C line by passing Champa PS so as to form Raipur PS-Dharamjaygarh PS 765 kV line. In view of the said arrangement one of the line Reactors was commissioned at Raipur PS along with the bunched line. The other line Reactor was used as bus reactor as an interim arrangement so as to utilize it towards control of voltage at Raipur PS. The in-principle approval of the same was obtained from CEA vide letter dated 31.03.2014. The same was also ratified in 37<sup>th</sup> Meeting of Standing Committee on Power System Planning in WR held on 5.9.2014.

b. Champa PS is under various stages of commissioning and the details are as follows:-



Srl. No.	Element	COD
1	One no. 765 kV line bay at Champa PS for termination of Champa PS-Raigarh (Kotra) 765 kV S/C T/L {Raigarh (Kotra) PS Bay}	31.5.2015
2	One no. 765 kV line bay at Champa PS for termination of one ckt. of Champa PS-Raipur PS 765 kV D/C T/L {Raipur PS-I Bay}	
3	ICT 1 at Champa PS alongwith associated bays	13.6.2015

The tariff for these assets along with other assets (Bus Reactors and remaining ICTs and Line Bays) has been claimed in Petition No. 260/TT/2015.

c. The contingency arrangement was carried out for optimum utilization of Champa PS-Raipur PS 765 kV D/C line and Dharamjaygarh PS-Champa PS 765 kV S/C line in absence of Champa PS and Champa PS-Raigarh (Kotra) PS 765 kV S/C line. The contingency arrangement was formed by bunching of Champa PS-Raipur PS 765 kV D/C lines and connecting it to Dharamjaygarh PS-Champa PS 765 kV S/C line so as to form Raipur PS-Dharamjaygarh PS 765 kV line bypassing Champa PS. This arrangement strengthened the 765 kV inter-connection between WR and ER through Raipur PS-Dharamjaygarh PS-Ranchi line and continued upto 31.5.2015. However, after charging of Champa PS-Raigarh (Kotra) PS 765 kV S/C line on 31.5.2015, the arrangement was revised. In this arrangement, the bunching of Champa PS-Raipur PS 765 kV D/C lines was removed from both ends. Raigarh (Kotra) PS-Champa PS 765 kV S/C line and one Ckt. of Raipur PS-Champa PS 765 kV D/C lines were terminated at Champa PS utilizing 2 nos. 765 kV line bays. Other Ckt. of Raipur PS-Champa PS 765 kV D/c line was connected with Champa PS-Dharamjaygarh PS 765kV line so as to form Raipur PS-Dharamjaygarh PS 765 kV line bypassing Champa PS. This facilitated connection of Raigarh (Kotra) PS and Dharamjaygarh



PS to Raipur PS for dispersal of power from IPPs in Chhattisgarh towards other parts of Western Region grid. Thus, the said Contingency arrangement has been normalized after the date of commissioning of 2 nos. 765 kV Bays at Champa PS and 765 kV S/C Raigarh (Kotra)-Champa PS T/L on 31.5.2015.

d. In the process of finalization of other alternatives for charging of the lines, load flow study was also carried out by bunching of Champa PS-Raipur 765 kV D/C T/L and Champa PS-Dharamjaygarh (near Korba) PS 765 kV S/C T/L at Champa end. Results of the studies are summarized hereunder:-

I. Transfer of additional 780 MW power from Dharamjaygarh to Raipur PS subject to commissioning of 765 kV D/C Dharamjaygarh-Jabalpur line-2 (being executed by M/s Sterlite under TBCB)

II. Transfer of 300 to 400 MW additional power transfer even in the absence of 765 kV D/C Dharamjaygarh-Jabalpur line-2 connectivity.

III. Creation of path between Dharamjaygarh to Raipur which will act as redundant path for power evacuation from Sipat Generating plant being operated by NTPC, and improves the reliability of the overall system.

e. As the charging of the lines through the contingency arrangement is improving the overall reliability of the system this arrangement was adopted.

6. We have considered the submissions of the petitioner. As the charging of the lines through the contingency arrangement has improved the overall reliability of the



system and as the same was discussed and agreed in the 37<sup>th</sup> Meeting of Standing Committee on Power System Planning in WR held on 5.9.2014, the present contingency arrangement is approved.

7. Annual Fixed Cost for the instant transmission asset as a whole was allowed vide order dated 23.6.2014 under Regulation 7(7) of the 2014 Tariff Regulations, subject to adjustment as per the said Regulation.

8. This order has been issued after considering the petitioner's affidavits dated 7.3.2014, 21.5.2014, 9.6.2014, 25.6.2015, 7.9.2015, 10.9.2015 and 15.12.2015.

9. The transmission charges claimed by the petitioner are as under:-

Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	2971.04	3625.72	3729.42	3768.52	3768.52
Interest on Loan	3201.25	3645.68	3445.07	3160.72	2827.68
Return on Equity	3427.74	4183.99	4304.33	4349.82	4349.82
Interest on Working Capital	232.44	277.54	278.54	274.42	267.24
O & M Expenses	207.62	250.89	259.17	267.83	276.73
<b>Total</b>	<b>10040.09</b>	<b>11983.82</b>	<b>12016.53</b>	<b>11821.31</b>	<b>11489.99</b>
Particulars	Asset-1(b)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	147.22	183.79	193.05	195.41	195.41
Interest on Loan	171.19	201.07	196.27	182.33	165.38
Return on Equity	174.21	218.75	230.54	233.69	233.69
Interest on Working Capital	15.30	18.71	19.25	19.22	19.00
O & M Expenses	71.71	87.22	90.12	93.11	96.20
<b>Total</b>	<b>579.63</b>	<b>709.54</b>	<b>729.23</b>	<b>723.76</b>	<b>709.68</b>

10. The details submitted by the petitioner in support of its claim for interest on working capital are as overleaf:-





(₹ in lakh)

Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	36.43	37.63	38.88	40.17	41.51
O & M expenses	20.24	20.91	21.60	22.32	23.00
Receivables	1957.50	1997.30	2002.76	1970.22	1915.00
<b>Total</b>	<b>2014.17</b>	<b>2055.84</b>	<b>2063.24</b>	<b>2032.71</b>	<b>1979.57</b>
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>232.44</b>	<b>277.54</b>	<b>278.54</b>	<b>274.42</b>	<b>267.24</b>
Particulars	Asset-1(b)				
	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	113.73	118.26	121.54	120.63	118.28
<b>Total</b>	<b>133.43</b>	<b>138.61</b>	<b>142.57</b>	<b>142.36</b>	<b>140.73</b>
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>15.30</b>	<b>16.71</b>	<b>19.25</b>	<b>19.22</b>	<b>19.00</b>

11. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003. None of the respondents have filed any reply.

12. Having heard the representatives of the petitioner and perused the material on record we proceed to dispose of the petition.

### Capital Cost

13. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

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

(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.”

14. The petitioner initially submitted the capital cost incurred and capital cost projected to be incurred as per the anticipated date of commercial operation, in the petition. Subsequently, the petitioner has submitted the actual CODs of the assets after split and also submitted revised claim alongwith revised tariff forms.

15. The details of apportioned approved cost, capital cost as on the date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred during 2014-15, 2015-16 and 2016-17 along with estimated completion cost for the instant assets covered in the petition and considered for the purpose of computation of tariff are as follows:-

Particulars	Approved apportioned cost	Expenditure as on COD	Additional capital expenditure			Estimated completion cost
			COD to 31.3.2015	2015-16	2016-17	
Asset-1(a)	48032.61	64391.54	3272.25	2464.68	1498.36	71626.83
Asset-1(b)	3849.35	3294.36	165.32	284.73	103.64	3848.05



### **Cost over-run/cost variation**

16. There is no cost over-run in the case of the Asset-1(b). However, in the case of Asset-1(a), the total estimated completion cost of ₹71626.83 lakh exceeds the approved apportioned cost of ₹48032.61 lakh. Thus, there is cost over-run by approximately 49% in the case of Asset-1(a). The petitioner had submitted the following reasons for cost over-run in the petition:-

“Regarding variation in award cost vis-à-vis estimate, it may be mentioned that for procurement, open competitive bidding route is followed and by providing equal opportunity to all eligible firms, lowest possible market prices for required product/services is obtained and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid prices received against tenders are higher than the cost estimate depending upon prevailing market conditions.

Further, by optimizing Tower Spotting, Line Length/No. of Towers have got reduced. However, quantities of various type of Towers have changed as per site requirement. Number of suspension towers have decreased whereas the number of tension towers have increased, in order to re-route the line avoiding populated areas, forest, minimizing ROW constraints and considering various crossings & available line corridor etc. It is relevant to mention here that towers with enhanced average span were used in the line. Due to the increase in the number of tension towers, quantity of insulators as well as the concreting and reinforcement of foundations for towers got increased.

There is also an increase in the amount of Crop/Tree compensation based on the estimate by the District Revenue Authorities.”

17. The petitioner was directed to submit the cost variation in case of certain elements of Asset-1(a) and the reason for cost over-run in the case of preliminary works, material of transmission line, sub-station foundation for structure, structure for switchyard and auxiliary system. The petitioner in Form 5 has made the following submissions:-

- a. The increase in preliminary work is mainly due to increase in the amount paid towards crop/tree compensation based on the assessment by concerned State Revenue Authorities/ Horticulture Department.



b. The Tower Weight has increased from 21089 MT to 30447.57 MT i.e. by 9358.5 MT approx. mainly on following accounts:-

i) Change in wind Zone: Based on the Wind zone map (as issued by CSIR-SERC (Structural Engineering and Research Centre, Chennai), the area near Raipur was falling under WZ-2, accordingly, the FR was prepared considering the Wind Zone-2 design for this entire line. However, in recently proposed wind zone map of CSIR-SERC, the area near Raipur is proposed under WZ-3. Further, there have been certain incidences of tower failures of WZ-2 towers in the nearby areas due to wind-storms in recent past. Considering the above factors, WZ-3 parameters have been adopted for  $\frac{1}{2}$  the portion of the line near Raipur at implementation stage. Further, due to non-availability of design of WZ-3 towers at the time of execution, WZ-4 towers with increased/modified spans have been used.

ii) Variation in Tower unit Weight after detailed Design: 765 kV D/C being first time introduced during FR, the 765 kV D/C towers were under development stage and tower design were not available during FR stage so a tentative approximate weight were considered in FR preparation, however, there are variations in Tower weight considered in FR w.r.t. actual weight determined after detailed design/tower testing especially in angle towers/extension.

iii) Increase in Angle/Tension Towers: To avoid the habitations areas/new developments/structures and increased Power line crossings, suspension towers got reduced from 340 nos. (LoA Qty) to 245 nos. Accordingly the Tension/Angle towers and its extensions/cut points got



increased from 75 nos. (LoA Qty) to 142 nos. Due to this increase in cut points/angle towers the tower weight got increased in this transmission line. In fact increased Angle Tower/cuts points covers the 29 nos. power line crossing (58 Angle Towers), 3 nos. Railway crossing (6 Angle Towers), 1 no. river crossing (2 Angle Towers), 3 nos. NH crossing (6 nos. Angle Tower). Further, the increase in angle towers is also on account of avoiding recent settlements/houses/upcoming industrial areas, severe RoW near Champa end etc.

c. In the investment approval, expenditure of ₹200 lakh has been anticipated towards construction of Civil works of foundation of Equipment. However, after detailed engineering and subsequently at the time of actual execution of work, the cost has increased to ₹707.49 lakh (Including 10% PV).

d. The higher side variation in structure for switchyard and auxiliary system is mainly due to higher rates received in competitive biddings/PV/Taxes and Duties.

18. We have considered the submissions of the petitioner. The cost of Asset-1(a) is restricted to apportioned approved cost of ₹48032.61 lakh. The petitioner vide affidavit dated 15.12.2015 has submitted that the RCE for the project is under approval and shall be submitted after approval of the same. The cost of Asset-1(a) will be reviewed at the time of truing-up, if RCE is submitted by the petitioner.

### **Time Over-run**

19. The commissioning schedule of the project is 36 months from the date of IA i.e. 31.5.2011 and the scheduled COD works out to 30.5.2014 i.e. 1.6.2014. The



Asset-1(a) and Asset-1(b) were put under commercial operation on 24.5.2014 and 26.5.2014 respectively. Thus, there is no time over-run in the case of instant assets.

### **Treatment of IDC/IEDC**

20. The petitioner has claimed Interest During Construction (IDC) of ₹5522.82 lakh and ₹231.21 lakh for Asset-1(a) and Asset-1(b) respectively. The petitioner was directed by the Commission to submit computation of actual IDC on cash basis. The petitioner vide affidavit dated 25.6.2015 has submitted details of IDC on cash basis as ₹3794.14 lakh and ₹153.78 lakh for Asset-1(a) and Asset-1(b) respectively but without computation in soft copy. Thus, IDC on cash basis up to the respective actual date of commercial operation has been considered as per revised claim at ₹3794.12 lakh and ₹153.78 lakh for Asset-1(a) and Asset-1(b) respectively. However, as the capital cost of Asset-1(a) is restricted, no further adjustment is being done. The petitioner is directed to submit adequate information alongwith computation in soft copy in excel format along with RCE, if any, for a review at the time of truing-up.

21. The petitioner has claimed ₹796.67 lakh and ₹26.96 lakh as Incidental Expenditure During Construction (IEDC) as on respective CODs for Asset-1(a) and Asset-1(b) respectively. The IEDC amount claimed is within the percentage on Hard Cost as submitted in the Abstract Cost Estimate. Thus, the amount of ₹796.67 lakh and ₹26.96 claimed have been allowed for Asset-1(a) and Asset-1(b) respectively. However, in view of capital cost being restricted to approved apportioned cost, in respect of Asset-1(a), no adjustment has been done.



## **Initial Spares**

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

### **“13. Initial Spares**

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

- (d) Transmission system
  - (i) Transmission line - 1.00%
  - (ii) Transmission Sub-station (Green Field) - 4.00%
  - (iii) Transmission Sub-station (Brown Field) - 6.00%
  - (iv) Series Compensation devices and HVDC Station - 4.00%
  - (v) Gas Insulated Sub-station (GIS)-5.00%
  - (vi) Communication system-3.5%

Provided that:

- (i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:
- (ii) -----
- (iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:
- (iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the break up of head wise IDC & IEDC in its tariff application.

23. The petitioner has claimed ₹792.83 lakh as the cost of the initial spares in the case of Asset-1(a) and no initial spares have been claimed in the case of asset-1(b). However, in view of restriction of capital cost of Asset-1(a) no further adjustment is being done. The same will be reviewed on submission of RCE, if any, and other information as directed in the preceding paragraphs at the time of truing-up.



24. The capital cost of the instant assets as on the date of commercial operation considered for the purpose of computation of tariff as per Regulation 9(2)(e) of the 2014 Tariff Regulations, after necessary adjustment in respect of capitalization of IDC and cost over-run is as under:-

(₹ in lakh)		
Particulars	Asset-1(a)	
	Capital cost as on COD as per Auditor's certificate dated 21.5.2015 (affidavit dated 25.6.2015)	Capital Cost considered as on COD by restricting the capital cost as per approved apportioned cost
Freehold Land	-	-
Leasehold Land	-	-
Building & Other Civil Works	551.49	411.38
Transmission Line	60775.68	45335.37
Sub-Station Equipments	2989.14	2229.74
PLCC	75.23	56.12
<b>Total</b>	<b>64391.54</b>	<b>48032.61</b>
Particulars	Asset-1(b)	
	Capital cost as on COD as per Auditor's certificate dated 21.5.2015 (affidavit dated 25.6.2015)	Capital Cost considered as on COD after adjusting IDC on cash basis
Freehold Land	-	-
Leasehold Land	-	-
Building & Other Civil Works	216.90	211.64
Transmission Line	-	-
Sub-Station Equipments	3077.46	3002.85
PLCC	-	-
<b>Total</b>	<b>3294.36</b>	<b>3214.49</b>

### **Additional Capitalisation and De-capitalisation**

25. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

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

- (i) Undischarged liabilities recognised to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in





- accordance with the provisions of Regulation 13;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law or compliance of any existing law.”

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.”

26. Clause (13) of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” date as under:-

“cut-off date” means 31<sup>st</sup> March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31<sup>st</sup> March of the year closing after three years of the year of commercial operation”.

Provided that the cut-off date may be extended by the Commission if it is proved on the basis of documentary evidence that the capitalisation could not be made within the cut-off date for reasons beyond the control of the project developer;”

27. Therefore, the cut-off date for the instant assets is 31.3.2016.

28. The petitioner has submitted that the admissibility of additional capital expenditure incurred after the date of commercial operation is to be dealt in accordance with the provisions of the 2014 Tariff Regulations. The details of additional capital expenditure incurred and projected to be incurred for the instant transmission assets claimed during 2014-15, 2015-16 and 2016-17 is as under:-

Particulars	(₹ in lakh)		
	Asset-1(a)		
	2014-15	2015-16	2016-17
Freehold Land	-	-	-
Leasehold Land	-	-	-
Building & Other Civil Works	83.29	68.84	46.76
Transmission Line	3104.88	1958.39	1166.65
Sub-Station Equipments	84.08	400.54	284.95
PLCC	-	36.91	-
<b>Total</b>	<b>3272.25</b>	<b>2464.68</b>	<b>1498.36</b>



Particulars	Asset-1(b)		
	2014-15	2015-16	2016-17
Freehold Land	-	-	-
Leasehold Land	-	-	-
Building & Other Civil Works	81.24	63.39	39.26
Transmission Line	-	-	-
Sub-Station Equipments	84.08	221.34	64.38
PLCC	-	-	-
<b>Total</b>	<b>165.32</b>	<b>284.73</b>	<b>103.64</b>

29. The add-cap claimed is within the cut-off date and is on account of Balance/Retention payments. As the capital cost of Asset-1(a) has been restricted to apportioned approved cost, no additional expenditure has been considered as the actual cost as on COD is higher than the apportioned approved cost. In the case of Asset-1(b), the amount of additional capitalisation claimed by the petitioner has been considered for the purpose of determination of tariff. However, in the case of Asset-1(b), IDC worked out on cash basis only upto COD has been considered. IDC discharged after COD shall be subject to submission of relevant/adequate information and review thereof at the time of truing-up.

### **Capital cost as on 31.3.2019**

30. Accordingly, the details of the capital cost deemed to be claimed by the petitioner on cash basis, as on 31.3.2019, for the purpose of transmission tariff in the instant petition, after scrutiny of IDC/IEDC, initial spares and additional capitalisation is as under:-

Particulars	(₹ in lakh)		
	As on COD	Add-Cap	As on 31.3.2019
Freehold Land	-	-	-
Leasehold Land	-	-	-
Building & Other Civil Works	411.38	-	411.38
Transmission Line	45335.37	-	45335.37
Sub-Station Equipments	2229.74	-	2229.74
PLCC	56.12	-	56.12
<b>Total</b>	<b>48032.61</b>	<b>-</b>	<b>48032.61</b>



(₹ in lakh)

Particulars	Asset-1(b)				
	As on COD	Add-Cap			As on 31.3.2019
		2014-15	2015-16	2016-17	
Freehold Land	-	-	-	-	-
Leasehold Land	-	-	-	-	-
Building & Other Civil Works	211.64	81.24	63.39	39.26	395.53
Transmission Line	-	-	-	-	-
Sub-Station Equipments	3002.85	84.08	221.34	64.38	3372.65
PLCC	-	-	-	-	-
<b>Total</b>	<b>3214.49</b>	<b>165.32</b>	<b>284.73</b>	<b>103.64</b>	<b>3768.18</b>

### **Debt- Equity Ratio**

31. Clause 1 and 5 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(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:

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.

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

“(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

32. The petitioner has claimed debt-equity as on date of commercial operation of the asset and additional capital expenditure in the ratio of 70:30, which is in accordance with the above said Regulation. The debt-equity ratio of 70:30 has been



considered for the purpose of calculation of tariff. The debt-equity as on COD and 31.3.2019 in case of Asset-1(a) and in case of Asset-1(b) as on COD, for additional capital expenditure and 31.3.2019 is as under:-

Particulars	Asset-1(a)			
	Capital cost as on COD		Capital cost as on 31.3.2019	
	Amount (₹ in lakh)	% age	Amount (₹ in lakh)	% age
Debt	33622.83	70.00	33622.83	70.00
Equity	14409.78	30.00	14409.78	30.00
<b>Total</b>	<b>48032.61</b>	<b>100.00</b>	<b>48032.61</b>	<b>100.00</b>

Particulars	Asset-1(b)						
	Capital cost as on COD		Add-cap 2014-15	Add-cap 2015-16	Add-cap 2016-17	Capital cost as on 31.3.2019	
	Amount (₹ in lakh)	% age	Amount (₹ in lakh)	Amount (₹ in lakh)	Amount (₹ in lakh)	Amount (₹ in lakh)	% age
Debt	2250.14	70.00	115.72	199.31	72.55	2637.72	70.00
Equity	964.35	30.00	49.60	85.42	31.09	1130.45	30.00
<b>Total</b>	<b>3214.49</b>	<b>100.00</b>	<b>165.32</b>	<b>284.73</b>	<b>103.64</b>	<b>3768.18</b>	<b>100.00</b>

### Return on Equity

33. Clause (1) and (2) of Regulation 24 and Clause (1) and (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:

Provided that:

- (i) in case of projects commissioned on or after 1st April, 2014, an additional return of **0.50 %** shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:
- (ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:



- (iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
- (iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
- (v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
- (vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.”

“25. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

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

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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 requested to allow to recover the shortfall or refund the excess Annual Fixed Charges, on account of return on equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax



Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission.

35. The petitioner has submitted that the qualifying time line for allowing additional RoE of 0.5% for 765 kV D/C transmission line is 40 months as per 2014 Tariff Regulations and has claimed additional RoE of 0.5% as the instant transmission assets were commissioned within the timeline specified in Regulation 24 read with Appendix-I of the 2014 Tariff Regulations. The Investment Approval for the instant project was accorded on 31.5.2011 and the assets were commissioned on 24.5.2014 and 26.5.2014, i.e. within 36 month. Further, the petitioner has submitted a certificate from WRPC as provided in Regulation 24(2)(iii) of the 2014 Tariff Regulations stating that the commissioning of the instant asset will be beneficial for system operation in national/regional grid. Therefore, additional RoE of 0.5% under Regulation 24(2) (iii) is allowed.

36. Accordingly, RoE has been allowed @ 16.00% and has been computed @ 20.243% p.a based on the tax rate (MAT) applicable for the year 2013-14 on average equity 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. Thus, the RoE determined is as given below:-

Particulars	(₹ in lakh)				
	Asset-1(a)				
	2014-15 (pro-rata)	2014-15	2014-15	2014-15	2014-15
Opening Equity	14409.78	14409.78	14409.78	14409.78	14409.78
Addition due to Additional Capitalization	-	-	-	-	-
Closing Equity	14409.78	14409.78	14409.78	14409.78	14409.78
Average Equity	14409.78	14409.78	14409.78	14409.78	14409.78
Return on Equity (Base Rate)	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%



Rate of Return on Equity (Pre Tax)	20.243%	20.243%	20.243%	20.243%	20.243%
Return on Equity (Pre Tax)	<b>2493.41</b>	<b>2916.97</b>	<b>2916.97</b>	<b>2916.97</b>	<b>2916.97</b>
<b>Particulars</b>	<b>Asset-1(b)</b>				
	<b>2014-15 (pro-rata)</b>	<b>2014-15</b>	<b>2014-15</b>	<b>2014-15</b>	<b>2014-15</b>
Opening Equity	964.35	1013.94	1099.36	1130.45	1130.45
Addition due to Additional Capitalization	49.60	85.42	31.09	-	-
Closing Equity	1013.94	1099.36	1130.45	1130.45	1130.45
Average Equity	989.14	1056.65	1114.91	1130.45	1130.45
Return on Equity (Base Rate)	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>	<b>16.00%</b>
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	20.243%	20.243%	20.243%	20.243%	20.243%
Return on Equity (Pre Tax)	<b>170.06</b>	<b>213.90</b>	<b>225.69</b>	<b>228.84</b>	<b>228.84</b>

### Interest on Loan

37. Regulation 26 of the 2014 Tariff Regulations with regard to Interest on Loan specifies as under:-

“(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

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

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.”

38. In keeping with the provisions of Regulation 26 of the 2014 Tariff Regulations, the petitioner’s entitlement to interest on loan has been calculated on the following basis:-

- (a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition;
- (b) The repayment for the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for that period;
- (c) Notwithstanding moratorium period availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed;
- (d) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan; and
- (e) As per Regulation 26(5) only actual loans have been considered for computation of weighted average rate of interest.

39. The petitioner has submitted that the interest on loan has been considered as on the anticipated COD on the basis of rate prevailing as on 1.3.2014. The change in interest due to floating rate of interest applicable, if any, for the project





needs to be claimed/ adjusted over the tariff block of 5 years. We would like to clarify that the interest on loan has been calculated on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of triuing up.

40. Detailed calculations in support of the weighted average rates of interest have been given in the Annexure-1 and Annexure-2.

41. Based on the above, interest on loan has been calculated as given hereunder:-

(` in lakh)

Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	33622.83	33622.83	33622.83	33622.83	33622.83
Cumulative Repayment upto Previous Yr	-	2161.09	4689.28	7217.47	9745.66
Net Loan-Opening	33622.83	31461.74	28933.55	26405.36	23877.16
Addition due to Additional Capitalisation	-	-	-	-	-
Repayment during the year	2161.09	2528.19	2528.19	2528.19	2528.19
Net Loan-Closing	31461.74	28933.55	26405.36	23877.16	21348.97
Average Loan	32542.28	30197.65	27669.45	25141.26	22613.07
Weighted Avg. Rate of Interest on Loan	8.37%	8.39%	8.37%	8.33%	8.28%
<b>Interest</b>	<b>2328.66</b>	<b>2534.13</b>	<b>2316.33</b>	<b>2095.12</b>	<b>1871.87</b>

Particulars	Asset-1(b)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	2250.14	2365.87	2565.18	2637.72	2637.72
Cumulative Repayment upto Previous Yr	-	143.70	323.37	512.31	703.59
Net Loan-Opening	2250.14	2222.16	2241.80	2125.42	1934.13
Addition due to Additional Capitalisation	115.72	199.31	72.55	-	-
Repayment during the year	143.70	179.67	188.93	191.29	191.29
Net Loan-Closing	2222.16	2241.80	2125.42	1934.13	1742.85
Average Loan	2236.15	2231.98	2183.61	2029.78	1838.49
Weighted Avg. Rate of Interest on Loan	8.80%	8.81%	8.80%	8.80%	8.81%
<b>Interest</b>	<b>167.11</b>	<b>196.64</b>	<b>192.20</b>	<b>178.62</b>	<b>162.04</b>



## Depreciation

42. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as follows:-

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

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

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

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

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

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

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

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

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

(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.”

43. The petitioner has claimed actual depreciation as a component of Annual Fixed Charges. The instant transmission asset was put under commercial operation during 2014-15. Accordingly, the instant asset will complete 12 years beyond 2018-19. Thus, depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-II to the 2014 Tariff Regulations, as per the following details:-

(` in lakh)					
Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	48032.61	48032.61	48032.61	48032.61	48032.61
Additional Capital Expenditure	-	-	-	-	-
Closing Gross Block	48032.61	48032.61	48032.61	48032.61	48032.61
Average Gross Block	48032.61	48032.61	48032.61	48032.61	48032.61
Rate of Depreciation	5.2635%	5.2635%	5.2635%	5.2635%	5.2635%
Depreciable Value	43229.35	43229.35	43229.35	43229.35	43229.35
Remaining Depreciable Value	43229.35	41068.26	38540.07	36011.88	33483.69
<b>Depreciation</b>	<b>2161.09</b>	<b>2528.19</b>	<b>2528.19</b>	<b>2528.19</b>	<b>2528.19</b>
Particulars	Asset-1(b)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	3214.49	3379.81	3664.54	3768.18	3768.18
Additional Capital Expenditure	165.32	284.73	103.64	-	-
Closing Gross Block	3379.81	3664.54	3768.18	3768.18	3768.18
Average Gross Block	3297.15	3522.17	3716.36	3768.18	3768.18
Rate of Depreciation	5.1316%	5.1012%	5.0838%	5.0764%	5.0764%
Depreciable Value	2967.43	3169.95	3334.72	3391.36	3391.36
Remaining Depreciable Value	2967.43	3026.25	3021.35	2879.05	2687.77
<b>Depreciation</b>	<b>143.70</b>	<b>179.67</b>	<b>188.93</b>	<b>191.29</b>	<b>191.29</b>



### Operation & Maintenance Expenses (O&M Expenses)

44. Regulation 29 (4) (a) of the 2014 Tariff Regulations specifies the norms for operation and maintenance expenses for the transmission system based on the type of sub-station and the transmission line. Norms specified in respect of the elements covered in the instant petition are as under:-

Elements	2014-15	2015-16	2016-17	2017-18	2018-19
D/C quad conductor T/L (₹ lakh/km)	1.062	1.097	1.133	1.171	1.210
765 kV bays (₹ lakh per bay)	84.42	87.22	90.12	93.11	96.20

45. The elements covered in the instant asset claimed by the petitioner are as under:-

765 kV D/C Champa-PS-Raipur (Durg) PS T/L along-with associated bays at Raipur PS	
Particulars	COD
<b>Asset-1(a)</b>	
149.36 km, 765 kV D/C quad conductor Champa-Pooling Station-Raipur Pooling Station 765 kV C D/C line T/L.	24.5.2014
1 no. 765 kV bay at Raipur PS	
<b>(Asset-1(b))</b>	
1 no. 765 kV bay at Champa for line-I	26.5.2014

46. Accordingly, O&M Expenses allowed in respect of the instant assets covered in this petition are as under:-

Particulars	(₹ in lakh)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
<b>Asset-1(a)</b>					
149.202 km, 765 kV D/C quad conductor Champa-Pooling Station-Raipur Pooling Station 765 kV D/C line T/L. (COD: 24.5.2014)	135.45	163.67	169.05	174.72	180.53
1 no. 765 kV Champa, bay at Raipur PS	72.17	87.22	90.12	93.11	96.20



(COD: 24.5.2014)					
<b>Total</b>	<b>207.62</b>	<b>250.89</b>	<b>259.17</b>	<b>267.83</b>	<b>276.73</b>
<b>Asset-1(b)</b>					
1 no. 765 kV Champa bay at Raipur PS (COD: 26.5.2014)	71.71	87.22	90.12	93.11	96.20
<b>Total</b>	<b>71.71</b>	<b>87.22</b>	<b>90.12</b>	<b>93.11</b>	<b>96.20</b>

47. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 had been arrived at on the basis of normalized actual O&M Expenses during the period 2008-09 to 2012-13. The petitioner has further submitted that the wage revision of the employees is due during 2014-19 and actual impact of wage hike effective from a future date has not been factored in fixation of the normative O&M rates specified for the tariff block 2014-19. The petitioner has submitted that it would approach the Commission for suitable revision in norms for O&M Expenses for claiming the impact of wage hike during 2014-19, if any.

48. The petitioner has also submitted that the claim for transmission tariff is exclusive of any statutory taxes, levies, duties, cess or any other kind of impositions etc. Such kinds of payments are generally included in the O & M Expenses. 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, we would like to clarify that any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations. In this order, we have allowed O&M Expenses as per the existing norms.



## Interest on Working Capital

49. Clause 1 (c) and 3 of Regulation 28 and Clause 5 of Regulation 3 of the 2014

Tariff Regulations specify as follows:-

“28. Interest on Working Capital: (1) The working capital shall cover:

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

(i) Receivables equivalent to two months of fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and

(iii) Operation and maintenance expenses for one month”

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

“(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

50. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). Necessary computations in support of interest on working capital are given hereunder:-

(` in lakh)

Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	36.43	37.63	38.88	40.17	41.51
O & M expenses	20.24	20.91	21.60	22.32	23.06
Receivables	1435.62	1404.62	1368.94	1332.75	1296.25
<b>Total</b>	<b>1492.30</b>	<b>1463.16</b>	<b>1429.41</b>	<b>1395.24</b>	<b>1360.82</b>
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>172.21</b>	<b>197.53</b>	<b>192.97</b>	<b>188.36</b>	<b>183.71</b>
Particulars	Asset-1(b)				
	2014-15	2015-16	2016-17	2017-18	2018-19



	<b>(pro-rata)</b>				
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	111.39	115.97	119.32	118.46	116.18
<b>Total</b>	<b>131.09</b>	<b>136.32</b>	<b>140.34</b>	<b>140.19</b>	<b>138.63</b>
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest</b>	<b>15.03</b>	<b>18.40</b>	<b>18.95</b>	<b>18.93</b>	<b>18.71</b>

### Transmission Charges

51. The transmission charges allowed for the instant assets are as under:-

(` in lakh)

Particulars	Asset-1(a)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	2161.09	2528.19	2528.19	2528.19	2528.19
Interest on Loan	2328.66	2534.13	2316.33	2095.12	1871.87
Return on Equity	2493.41	2916.97	2916.97	2916.97	2916.97
Interest on Working Capital	172.21	197.53	192.97	188.36	183.71
O & M Expenses	207.62	250.89	259.17	267.83	276.73
<b>Total</b>	<b>7362.98</b>	<b>8427.71</b>	<b>8213.63</b>	<b>7996.47</b>	<b>7777.48</b>
Particulars	Asset-1(b)				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	143.70	179.67	188.93	191.29	191.29
Interest on Loan	167.11	196.64	192.20	178.62	162.04
Return on Equity	170.06	213.90	225.69	228.84	228.84
Interest on Working Capital	15.03	18.40	18.95	18.93	18.71
O & M Expenses	71.71	87.22	90.12	93.11	96.20
<b>Total</b>	<b>567.62</b>	<b>695.83</b>	<b>715.89</b>	<b>710.78</b>	<b>697.08</b>

### Filing Fee and the Publication Expenses

52. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in 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**

53. The petitioner has submitted that the licence fee is a new component of cost to the transmission licence under O&M stage of the project and has become incidental to the petitioner only from 2008-09. The petitioner has therefore submitted that the cost associated with license fees had not been captured and the license fee may be allowed to be recovered 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**

54. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list at any time in future. The petitioner has further prayed that if any taxes and duties including cess etc. are imposed by any statutory/Government/municipal authorities, it shall be allowed to be recovered from the beneficiaries. We consider petitioner's prayer pre-mature and accordingly this prayer is rejected.

### **Deferred Tax Liability**

55. The deferred tax liability shall be dealt as per Regulations 49 of the 2014 Tariff Regulations, as amended from time to time. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same materializes, directly from the beneficiaries or long term transmission customers /DICs.





### **Sharing of Transmission Charges**

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

57. This order disposes of Petition No. 45/TT/2014.

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

sd/-  
**(Shri Gireesh B. Pradhan)**  
**Chairperson**



**Annexure-1**

(₹ in lakh)

<b>CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN</b>						
	<b>Details of Loan</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>1</b>	<b>Bond-XXXV-LOAN-1</b>					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	8.33	16.66	24.99
	Net Loan-Opening	100.00	100.00	91.67	83.34	75.01
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	8.33	8.33	8.33	8.33
	Net Loan-Closing	100.00	91.67	83.34	75.01	66.68
	Average Loan	100.00	95.84	87.51	79.18	70.85
	Rate of Interest	9.64%	9.64%	9.64%	9.64%	9.64%
	Interest	<b>9.64</b>	<b>9.24</b>	<b>8.44</b>	<b>7.63</b>	<b>6.83</b>
	Rep Schedule					
<b>2</b>	<b>Bond XXXVI -LOAN-2</b>					
	Gross loan opening	790.00	790.00	790.00	790.00	790.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	52.67	105.34
	Net Loan-Opening	790.00	790.00	790.00	737.33	684.66
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	52.67	52.67	52.67
	Net Loan-Closing	790.00	790.00	737.33	684.66	631.99
	Average Loan	790.00	790.00	763.67	711.00	658.33
	Rate of Interest	9.35%	9.35%	9.35%	9.35%	9.35%
	Interest	73.87	73.87	71.40	66.48	61.55
	Rep Schedule					
<b>3</b>	<b>Bond XXXVII-LOAN-3</b>					
	Gross loan opening	2500.00	2500.00	2500.00	2500.00	2500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	208.33	416.66	624.99
	Net Loan-Opening	2500.00	2500.00	2291.67	2083.34	1875.01
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	208.33	208.33	208.33	208.33
	Net Loan-Closing	2500.00	2291.67	2083.34	1875.01	1666.68
	Average Loan	2500.00	2395.84	2187.51	1979.18	1770.85
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	231.25	221.61	202.34	183.07	163.80
	Rep Schedule					
<b>5</b>	<b>Bond XXXIX-LOAN-4</b>					
	Gross loan opening	3500.00	3500.00	3500.00	3500.00	3500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	3500.00	3500.00	3500.00	3500.00	3500.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00



	Net Loan-Closing	3500.00	3500.00	3500.00	3500.00	3500.00
	Average Loan	3500.00	3500.00	3500.00	3500.00	3500.00
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	<b>329.00</b>	<b>329.00</b>	<b>329.00</b>	<b>329.00</b>	<b>329.00</b>
	Rep Schedule					
<b>6</b>	<b>Bond XLIII-LOAN</b>					
	Gross loan opening	3000.00	3000.00	3000.00	3000.00	3000.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	250.00
	Net Loan-Opening	3000.00	3000.00	3000.00	3000.00	2750.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	250.00	250.00
	Net Loan-Closing	3000.00	3000.00	3000.00	2750.00	2500.00
	Average Loan	3000.00	3000.00	3000.00	2875.00	2625.00
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	<b>237.90</b>	<b>237.90</b>	<b>237.90</b>	<b>227.99</b>	<b>208.16</b>
	Rep Schedule	29.3.2027 Bullet Payment				
<b>7</b>	<b>SBI (21.3.2012)</b>					
	Gross loan opening	4500.00	4500.00	4500.00	4500.00	4500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	409.09	818.18
	Net Loan-Opening	4500.00	4500.00	4500.00	4090.91	3681.82
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	409.09	409.09	409.09
	Net Loan-Closing	4500.00	4500.00	4090.91	3681.82	3272.73
	Average Loan	4500.00	4500.00	4295.46	3886.37	3477.28
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	<b>461.25</b>	<b>461.25</b>	<b>440.28</b>	<b>398.35</b>	<b>356.42</b>
	Rep Schedule	22 annual instalments from 31.8.2016				
<b>8</b>	<b>Bond XL</b>					
	Gross loan opening	7500.00	7500.00	7500.00	7500.00	7500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	625.00	1250.00
	Net Loan-Opening	7500.00	7500.00	7500.00	6875.00	6250.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	625.00	625.00	625.00
	Net Loan-Closing	7500.00	7500.00	6875.00	6250.00	5625.00
	Average Loan	7500.00	7500.00	7187.50	6562.50	5937.50
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	<b>697.50</b>	<b>697.50</b>	<b>668.44</b>	<b>610.31</b>	<b>552.19</b>
	Rep Schedule	12 Annual instalments from 28.6.2016				
<b>9</b>	<b>Bond XLI</b>					
	Gross loan opening	3500.00	3500.00	3500.00	3500.00	3500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	291.67	583.34
	Net Loan-Opening	3500.00	3500.00	3500.00	3208.33	2916.66
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	291.67	291.67	291.67
	Net Loan-Closing	3500.00	3500.00	3208.33	2916.66	2624.99



	Average Loan	3500.00	3500.00	3354.17	3062.50	2770.83
	Rate of Interest	8.8500%	8.85%	8.85%	8.85%	8.85%
	Interest	<b>309.75</b>	<b>309.75</b>	<b>296.84</b>	<b>271.03</b>	<b>245.22</b>
	Rep Schedule	12 annual instalments from 19.10.2016				
<b>11</b>	<b>IFC(IFC-A Loan)(31419-00)</b>					
	Gross loan opening	485.65	485.65	485.65	485.65	485.65
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	48.57
	Net Loan-Opening	485.65	485.65	485.65	485.65	437.08
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	48.57	48.57
	Net Loan-Closing	485.65	485.65	485.65	437.08	388.51
	Average Loan	485.65	485.65	485.65	461.37	412.80
	Rate of Interest	3.233%	3.23%	3.23%	3.23%	3.23%
	Interest	<b>15.70</b>	<b>15.70</b>	<b>15.70</b>	<b>14.92</b>	<b>13.35</b>
	Rep Schedule	20 half yearly from 15.9.2017				
	<b>FC Bond (17.1.2013)</b>					
	Gross loan opening	6798.54	6798.54	6798.54	6798.54	6798.54
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	6798.54	6798.54	6798.54	6798.54	6798.54
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	6798.54	6798.54	6798.54	6798.54	6798.54
	Average Loan	6798.54	6798.54	6798.54	6798.54	6798.54
	Rate of Interest	4.097%	4.10%	4.10%	4.10%	4.10%
	Interest	<b>278.50</b>	<b>278.50</b>	<b>278.50</b>	<b>278.50</b>	<b>278.50</b>
	Rep Schedule	Bullet payment on 17.1.2023				
	<b>Bond XLIV</b>					
	Gross loan opening	8837.48	8837.48	8837.48	8837.48	8837.48
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	8837.48	8837.48	8837.48	8837.48	8837.48
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	2945.83
	Net Loan-Closing	8837.48	8837.48	8837.48	8837.48	5891.65
	Average Loan	8837.48	8837.48	8837.48	8837.48	7364.57
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	<b>768.86</b>	<b>768.86</b>	<b>768.86</b>	<b>768.86</b>	<b>640.72</b>
	Rep Schedule	13.3.2023 Bullet Payment				
	<b>Bond XLV</b>					
	Gross loan opening	2614.33	2614.33	2614.33	2614.33	2614.33
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	217.86
	Net Loan-Opening	2614.33	2614.33	2614.33	2614.33	2396.47
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	217.86	217.86
	Net Loan-Closing	2614.33	2614.33	2614.33	2396.47	2178.61



Average Loan	2614.33	2614.33	2614.33	2505.40	2287.54
Rate of Interest	9.65%	9.65%	9.65%	9.65%	9.65%
Interest	<b>252.28</b>	<b>252.28</b>	<b>252.28</b>	<b>241.77</b>	<b>220.75</b>
Rep Schedule					
<b>SBI (2014-15)</b>					
Gross loan opening	948.07	948.07	948.07	948.07	948.07
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
Net Loan-Opening	948.07	948.07	948.07	948.07	948.07
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00	0.00
Net Loan-Closing	948.07	948.07	948.07	948.07	948.07
Average Loan	948.07	948.07	948.07	948.07	948.07
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>97.18</b>	<b>97.18</b>	<b>97.18</b>	<b>97.18</b>	<b>97.18</b>
Rep Schedule					
<b>Bond XLVI</b>					
Gross loan opening	0.00	2290.58	2290.58	2290.58	2290.58
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
Net Loan-Opening	0.00	2290.58	2290.58	2290.58	2290.58
Additions during the year	2290.58	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00	0.00
Net Loan-Closing	2290.58	2290.58	2290.58	2290.58	2290.58
Average Loan	1145.29	2290.58	2290.58	2290.58	2290.58
Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
Interest	<b>106.51</b>	<b>213.02</b>	<b>213.02</b>	<b>213.02</b>	<b>213.02</b>
Rep Schedule					
<b>Total Loan</b>					
Gross loan opening	45074.07	47364.65	47364.65	47364.65	47364.65
Cumulative Repayment upto DOCO/previous year	0.00	0.00	216.66	1811.75	3705.41
Net Loan-Opening	45074.07	47364.65	47147.99	45552.90	43441.38
Additions during the year	2290.58	0.00	0.00	0.00	0.00
Repayment during the year	0.00	216.66	1595.09	1893.66	1893.66
Net Loan-Closing	47364.65	47147.99	45552.90	43441.38	38384.03
Average Loan	46219.36	47256.32	46350.45	44497.14	40912.71
<b>Weighted Average Rate of Interest</b>	<b>8.3714%</b>	<b>8.3918%</b>	<b>8.3714%</b>	<b>8.3334%</b>	<b>8.2778%</b>
<b>Interest</b>	<b>3869.19</b>	<b>3965.67</b>	<b>3880.20</b>	<b>3708.12</b>	<b>3386.69</b>



**Annexure-2**

(₹ in lakh)

<b>CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN</b>						
	<b>Details of Loan</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>1</b>	<b>Bond- XXXV -</b>					
	Gross loan opening	25.00	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	2.08	4.16	6.24
	Net Loan-Opening	25.00	25.00	22.92	20.84	18.76
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	2.08	2.08	2.08	2.08
	Net Loan-Closing	25.00	22.92	20.84	18.76	16.68
	Average Loan	25.00	23.96	21.88	19.80	17.72
	Rate of Interest	9.64%	9.64%	9.64%	9.64%	9.64%
	Interest	<b>2.41</b>	<b>2.31</b>	<b>2.11</b>	<b>1.91</b>	<b>1.71</b>
	Rep Schedule					
<b>2</b>	<b>Bond XXXVI</b>					
	Gross loan opening	385.00	385.00	385.00	385.00	385.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	25.67	51.34
	Net Loan-Opening	385.00	385.00	385.00	359.33	333.66
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	25.67	25.67	25.67
	Net Loan-Closing	385.00	385.00	359.33	333.66	307.99
	Average Loan	385.00	385.00	372.17	346.50	320.83
	Rate of Interest	9.35%	9.35%	9.35%	9.35%	9.35%
	Interest	<b>36.00</b>	<b>36.00</b>	<b>34.80</b>	<b>32.40</b>	<b>30.00</b>
	Rep Schedule					
<b>3</b>	<b>Bond XXXVII-LOAN-3</b>					
	Gross loan opening	103.87	103.87	103.87	103.87	103.87
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	8.66	17.32	25.98
	Net Loan-Opening	103.87	103.87	95.21	86.55	77.89
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	8.66	8.66	8.66	8.66
	Net Loan-Closing	103.87	95.21	86.55	77.89	69.23
	Average Loan	103.87	99.54	90.88	82.22	73.56
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	<b>9.61</b>	<b>9.21</b>	<b>8.41</b>	<b>7.61</b>	<b>6.80</b>
	Rep Schedule					
<b>5</b>	<b>Bond XXXIX-LOAN-4</b>					
	Gross loan opening	91.09	91.09	91.09	91.09	91.09
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	91.09	91.09	91.09	91.09	91.09
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00



	Net Loan-Closing	91.09	91.09	91.09	91.09	91.09
	Average Loan	91.09	91.09	91.09	91.09	91.09
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	<b>8.56</b>	<b>8.56</b>	<b>8.56</b>	<b>8.56</b>	<b>8.56</b>
	Rep Schedule					
<b>6</b>	<b>SBI (21.3.2012)</b>					
	Gross loan opening	69.91	69.91	69.91	69.91	69.91
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	6.36	12.72
	Net Loan-Opening	69.91	69.91	69.91	63.55	57.19
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	6.36	6.36	6.36
	Net Loan-Closing	69.91	69.91	63.55	57.19	50.83
	Average Loan	69.91	69.91	66.73	60.37	54.01
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	<b>7.17</b>	<b>7.17</b>	<b>6.84</b>	<b>6.19</b>	<b>5.54</b>
	Rep Schedule	22 annual instalments from 31.8.2016				
<b>7</b>	<b>Bond XL</b>					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	8.33	16.66
	Net Loan-Opening	100.00	100.00	100.00	91.67	83.34
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33	8.33	8.33
	Net Loan-Closing	100.00	100.00	91.67	83.34	75.01
	Average Loan	100.00	100.00	95.84	87.51	79.18
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	<b>9.30</b>	<b>9.30</b>	<b>8.91</b>	<b>8.14</b>	<b>7.36</b>
	Rep Schedule	12 Annual instalments from 28.6.2016				
<b>8</b>	<b>Bond XLI</b>					
	Gross loan opening	25.00	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	2.08	4.16
	Net Loan-Opening	25.00	25.00	25.00	22.92	20.84
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	2.08	2.08	2.08
	Net Loan-Closing	25.00	25.00	22.92	20.84	18.76
	Average Loan	25.00	25.00	23.96	21.88	19.80
	Rate of Interest	8.8500%	8.85%	8.85%	8.85%	8.85%
	Interest	<b>2.21</b>	<b>2.21</b>	<b>2.12</b>	<b>1.94</b>	<b>1.75</b>
	Rep Schedule	12 annual instalments from 19.10.2016				
<b>9</b>	<b>IFC (IFC-A Loan) (31419-00)</b>					
	Gross loan opening	176.97	176.97	176.97	176.97	176.97
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	17.70
	Net Loan-Opening	176.97	176.97	176.97	176.97	159.27
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	17.70	17.70



	Net Loan-Closing	176.97	176.97	176.97	159.27	141.57
	Average Loan	176.97	176.97	176.97	168.12	150.42
	Rate of Interest	3.233%	3.23%	3.23%	3.23%	3.23%
	Interest	<b>5.72</b>	<b>5.72</b>	<b>5.72</b>	<b>5.44</b>	<b>4.86</b>
	Rep Schedule	20 half yearly from 15.9.2017				
<b>10</b>	<b>FC Bond (17.1.2013)</b>					
	Gross loan opening	117.98	117.98	117.98	117.98	117.98
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	117.98	117.98	117.98	117.98	117.98
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	117.98	117.98	117.98	117.98	117.98
	Average Loan	117.98	117.98	117.98	117.98	117.98
	Rate of Interest	4.097%	4.10%	4.10%	4.10%	4.10%
	Interest	<b>4.83</b>	<b>4.83</b>	<b>4.83</b>	<b>4.83</b>	<b>4.83</b>
	Rep Schedule	Bullet payment on 17.1.2023				
<b>11</b>	<b>Bond XLIV</b>					
	Gross loan opening	250.00	250.00	250.00	250.00	250.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	250.00	250.00	250.00	250.00	250.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	83.33
	Net Loan-Closing	250.00	250.00	250.00	250.00	166.67
	Average Loan	250.00	250.00	250.00	250.00	208.34
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	<b>21.75</b>	<b>21.75</b>	<b>21.75</b>	<b>21.75</b>	<b>18.13</b>
	Rep Schedule	13.3.2023 Bullet Payment				
<b>12</b>	<b>Bond XLV</b>					
	Gross loan opening	576.97	576.97	576.97	576.97	576.97
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	48.08
	Net Loan-Opening	576.97	576.97	576.97	576.97	528.89
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	48.08	48.08
	Net Loan-Closing	576.97	576.97	576.97	528.89	480.81
	Average Loan	576.97	576.97	576.97	552.93	504.85
	Rate of Interest	9.65%	9.65%	9.65%	9.65%	9.65%
	Interest	<b>55.68</b>	<b>55.68</b>	<b>55.68</b>	<b>53.36</b>	<b>48.72</b>
	Rep Schedule					
<b>13</b>	<b>SBI (2014-15)</b>					
	Gross loan opening	384.27	384.27	384.27	384.27	384.27
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	384.27	384.27	384.27	384.27	384.27
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	384.27	384.27	384.27	384.27	384.27





	Average Loan	384.27	384.27	384.27	384.27	384.27
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	<b>39.39</b>	<b>39.39</b>	<b>39.39</b>	<b>39.39</b>	<b>39.39</b>
	Rep Schedule					
<b>14</b>	<b>Bond XLVI</b>					
	Gross loan opening	0.00	115.72	115.72	115.72	115.72
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	115.72	115.72	115.72	115.72
	Additions during the year	115.72	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	115.72	115.72	115.72	115.72	115.72
	Average Loan	57.86	115.72	115.72	115.72	115.72
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	<b>5.38</b>	<b>10.76</b>	<b>10.76</b>	<b>10.76</b>	<b>10.76</b>
	Rep Schedule					
	<b>Total Loan</b>					
	Gross loan opening	2306.06	2421.78	2421.78	2421.78	2421.78
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	10.74	63.92	134.80
	Net Loan-Opening	2306.06	2421.78	2411.04	2357.86	2238.90
	Additions during the year	115.72	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	10.74	53.18	70.88	70.88
	Net Loan-Closing	2421.78	2411.04	2357.86	2238.90	2036.61
	Average Loan	2363.92	2416.41	2384.45	2298.38	2137.76
	<b>Weighted Average Rate of Interest</b>	<b>8.7992%</b>	<b>8.8101%</b>	<b>8.8020%</b>	<b>8.8002%</b>	<b>8.8136%</b>
	<b>Interest</b>	<b>208.01</b>	<b>212.89</b>	<b>209.88</b>	<b>202.26</b>	<b>188.41</b>

