

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 273/TT/2015**

**Coram:**

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

**Date of Hearing : 29.04.2016  
Date of Order : 30.05.2016**

**In the matter of:**

Determination of transmission tariff for 1500 MVA, 765/400 kV ICT-1 & associated bays at Varanasi GIS S/S, 1500 MVA, 765/400 kV ICT-2 & associated bays at Varanasi GIS S/S, 330 MVAR, 765 kV Bus Reactor-1 at Varanasi GIS S/S, 765 kV S/C Balia-Varanasi line and associated bays including 240 MVAR Line Reactor at both end, 765kV S/C Gaya-Varanasi transmission line and associated bays including 240 MVAR Line Reactor, 765 kV S/C Ranchi-Dharamjaygarh transmission line alongwith associated bays at Dharamjaygarh under "Transmission System for Phase I Generation Projects in Jharkhand and West Bengal Part A2" 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. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,  
Vidyut Bhawan, Vidyut Marg,  
Jaipur - 302 005.
2. Ajmer Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.



3. Jaipur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur.
4. Jodhpur Vidyut Vitran Nigam Ltd.,  
400 kV GSS Building (Ground Floor), Ajmer Road,  
Heerapura, Jaipur
5. Himachal Pradesh State Electricity Board,  
Vidyut Bhawan, Kumar House Complex Building II,  
Shimla - 171 004.
6. Punjab State Electricity Board,  
The Mall, Patiala - 147 001.
7. Haryana Power Purchase Centre,  
Shakti Bhawan, Sector - 6  
Panchkula (Haryana) - 134 109
8. Power Development Department,  
Govt. of Jammu and Kashmir  
Mini Secretariat, Jammu .
9. Uttar Pradesh Power Corporation Ltd.,  
Shakti Bhawan, 14, Ashok Marg,  
Lucknow - 226 001.
10. Delhi Transco Ltd.,  
Shakti Sadan, Kotla Road,  
New Delhi - 110 002
11. BSES Yamuna Power Ltd.,  
Shakti Kiran Building, Karkardooma,  
Delhi – 110 092.
12. BSES Rajdhani Power Ltd.,  
BSES Bhawan, Nehru Place,  
New Delhi.
13. North Delhi Power Ltd.,  
Power Trading & Load Dispatch Group,  
Cennet Building,  
Adjacent to 66/11kV Pitampura - ,  
Grid Building, Near PP Jewellers,  
Pitampura, New Delhi - 110 034



14. Chandigarh Administration,  
Sector - 9, Chandigarh
15. Uttarakhand Power Corporation Ltd.,  
Urja Bhawan, Kanwali Road,  
Dehradun
16. North Central Railway,  
Allahabad
17. New Delhi Municipal Council,  
Palika Kendra, Sansad Marg,  
New Delhi - 110 002
18. Bihar State Power (Holding) Company Ltd  
(Formerly Bihar State Electricity Board -BSEB)  
Vidyut Bhavan, Bailey Road, Patna — 800 001
19. West Bengal State Electricity Distribution Company  
Bidyut Bhawan, Bidhan Nagar  
Block DJ, Sector-II, Salt lake city  
Calcutta - 700 091
20. Grid Corporation of Orissa Ltd.  
Shahid Nagar, Bhubaneswar - 751 007
21. Damodar Valley Corporation  
DVC Tower, Maniktala  
Civic Centre, VIP Road, Calcutta - 700 054
22. Power Department  
Govt. Of Sikkim, Gangtok - 737 101
23. Jharkhand State Electricity Board  
In front of Main Secretariat  
Doranda, Ranchi - 834002

....**Respondents**

The following were present:-

For Petitioner:           Shri S. S. Raju, PGCIL  
                                  Shri M. M. Mondal, PGCIL  
                                  Shri Rakesh Prasad, PGCIL  
                                  Shri Subash C Taneja, PGCIL  
                                  Smt. Sangeeta Edwards, PGCIL  
                                  Shri Amit Yadav, PGCIL  
                                  Shri V.P. Rastogi, PGCIL



For Respondent: Shri Manoj Kumar Sharma, Advocate, Rajasthan Discom

## **ORDER**

The present petition has been filed by Power Grid Corporation of India Ltd. ("the petitioner") for determination of tariff for 1500 MVA, 765/400 kV ICT-1 & associated bays at Varanasi GIS S/S, 1500 MVA, 765/400 kV ICT-2 & associated bays at Varanasi GIS S/S, 330 MVAR, 765 kV Bus Reactor-1 at Varanasi GIS S/S, 765 kV S/C Balia-Varanasi line and associated bays including 240 MVAR Line Reactor at both end, 765kV S/C Gaya-Varanasi transmission line and associated bays including 240 MVAR Line Reactor, 765 kV S/C Ranchi-Dharamjaygarh transmission line alongwith associated bays at Dharamjaygarh under "Transmission System for Phase I Generation Projects in Jharkhand and West Bengal Part A2" under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations") for the period from date of commercial operation 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 the beneficiaries of Northern & Eastern Region.

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

(a) The administrative approval and expenditure sanction to the transmission project was accorded by the Board of Directors of the petitioner company



vide C/CP/Jharkhand and West Bengal Projects (Phase-I) Part A2 dated 27.12.2011 for ₹242226 lakh including an IDC of ₹14070 lakh based on 3<sup>rd</sup> Quarter, 2011 price level. The total apportioned approved cost for the instant assets was ₹211152.84 lakh.

(b) The scope of work covered under "Transmission System for Phase I Generation Projects in Jharkhand and West Bengal Part A2" is as follows:-

**Transmission Lines:**

- **Ranchi New (765/400 kV S/S)-Dharamjaygarh/ near Korba 765 kV S/C**
- **Gaya-Varanasi 765 kV S/C**
- **LILO of Gaya-Balia 765 kV S/C line at Varanasi**

**Sub-stations:**

- **Establishment of 2x1500 MVA, 765/400 kV GIS Sub-station at Varanasi**

**Reactive Compensation (Scope covered in FR):**

- **1 No. 765 kV, 330 MVAR Bus Reactor at 765/400 kV GIS Varanasi S/S**
- **2 Nos. 765 kV, 240 MVAR Line Reactor at 765/400 kV GIS Varanasi S/S**
- **1 No. 765 kV, 330 MVAR Line Reactor at 765/400 kV Dharamjaygarh S/S**

4. Initially the petitioner, vide affidavit dated 31.10.2015, had claimed the transmission charges for all the assets based on anticipated COD. Subsequently,



the petitioner has submitted present status of COD vide affidavit dated 20.5.2016  
the following details with respect to the assets covered in the instant petition:-

<b>Name of Asset</b>	<b>COD as filed in the petition</b>	<b>Present COD status</b>
Asset-I: 1500 MVA, 765/400 kV ICT-1 & associated bays at Varanasi GIS S/S	31.12.2015	1.4.2016
Asset-II: 1500 MVA, 765/400 kV ICT-2 & associated bays at Varanasi GIS S/S	31.12.2015	15.6.2016 (anticipated)
Asset-III: 330 MVAR, 765 kV Bus Reactor-1 at Varanasi GIS S/S	31.12.2015	1.4.2016
Asset-IV: 765 kV S/C Balia-Varanasi line and associated bays including 240 MVAR Line Reactor at both end	31.12.2015	1.4.2016
Asset-V: 765kV S/C Gaya-Varanasi transmission line and associated bays including 240MVAR Line Reactor	31.12.2015	21.4.2016
Asset-VI: 765 kV S/C Ranchi-Dharamjaygarh transmission line along with associated bays at Dharamjaygarh	20.11.2015	26.12.2015

Thus, based on the submission vide affidavit dated 20.5.2016, all the aforesaid assets of the subject project are being covered in the instant petition.

5. The petitioner has submitted the actual COD, IDC on cash basis, Auditor Certificates and tariff forms vide affidavit dated 20.5.2016. The capital cost claimed by the petitioner, as certified vide Auditor's Certificate dated 19.5.2016 for the instant assets along with the estimated additional capital expenditure during 2014-19 tariff period, is as below :



(₹ in lakh)

Asset	FR Apportioned approved cost	Capital Cost up to COD	Estimated Additional Capital Expenditure				Total estimated completion cost as on 31.3.2019
			2015-16	2016-17	2017-18	2018-19	
Asset I, III, IV	67401.46	67949.76	-	6371.90	1486.31	-	75807.97
Asset II	13376.12	14484.76	-	3175.07	-	-	17659.83
Asset V	63159.29	64257.53	-	2924.30	2924.30	2924.30	73030.43
Asset VI	67215.97	72688.76	2009.95	3230.25	647.67	-	78576.63

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

**Asset-I, III, IV:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	3664.67	3912.59	3951.82
Interest on Loan	4248.02	4203.21	3898.45
Return on Equity	4159.89	4437.46	4481.39
Interest on Working Capital	306.84	318.87	314.76
O&M Expenses	524.09	541.56	559.51
<b>Total</b>	<b>12903.51</b>	<b>13413.69</b>	<b>13205.93</b>

**Asset-II:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	645.43	889.24	889.24
Interest on Loan	793.41	1029.52	949.34
Return on Equity	754.81	1043.96	1043.96
Interest on Working Capital	56.87	76.48	74.91
O&M Expenses	115.31	149.95	154.93
<b>Total</b>	<b>2365.83</b>	<b>3189.15</b>	<b>3112.38</b>



**Asset-V:****(₹ in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	3236.82	3554.73	3586.23
Interest on Loan	3675.64	3747.46	3474.86
Return on Equity	3640.08	4000.38	4035.66
Interest on Working Capital	256.83	275.41	271.17
O&M Expenses	252.14	275.97	285.08
<b>Total</b>	<b>11061.51</b>	<b>11853.95</b>	<b>11653.00</b>

**Asset-VI:****(₹ in lakh)**

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	3236.82	3554.73	3586.23	3236.82
Interest on Loan	3675.64	3747.46	3474.86	3675.64
Return on Equity	3640.08	4000.38	4035.66	3640.08
Interest on Working Capital	256.83	275.41	271.17	256.83
O&M Expenses	252.14	275.97	285.08	252.14
<b>Total</b>	<b>11061.51</b>	<b>11853.95</b>	<b>11653.00</b>	<b>11061.51</b>

7. The annual fixed charges for the instant asset were allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges vide order dated 17.12.2015 based on anticipated COD.

8. 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 29.4.2016. The Commission directed the petitioner vide the Record of Proceedings in hearing dated





29.4.2016, to submit additional information related to commissioning of assets. The petitioner has filed the rejoinder vide affidavit dated 20.5.2016 and 23.5.2016.

9. Having heard the representatives of the petitioner and respondents, and perused the material on record, we proceed to determine the tariff in accordance with the Tariff Regulations, 2014.

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

10. 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”

11. The petitioner, vide affidavit dated 20.5.2016, has submitted that the Asset I, III and IV were put under commercial operation on 1.4.2016, Asset V on 21.4.2016, Asset VI on 26.12.2015 and Asset II is expected to be put under commercial operation from 15.6.2016. The petitioner has submitted that the RLDC trial run certificate in support of claim of commercial operation in respect of



Asset I, III, IV, V and VI. Accordingly, the commercial operation date considered for the Asset I, III, IV, V and VI is as below:

<b>Name of Asset</b>	<b>COD</b>
Asset-I	1.4.2016
Asset-III	1.4.2016
Asset-IV	1.4.2016
Asset-V	21.4.2016
Asset-VI	26.12.2015

As regards Asset II, the commercial operation date is provisionally being considered 15.6.2016. The tariff is worked out for the instant assets from the COD to 31.3.2019.

<b>Name of Asset</b>	<b>COD</b>
Asset-II	15.6.2016 (anticipated)

The petitioner is directed to comply with requirement of COD in accordance with Regulation 4 of the 2014 Tariff Regulations on commissioning of Asset-II.

### **Capital Cost**

12. The petitioner has claimed the capital cost as mentioned in Para 5 supported by Auditor's Certificate dated 19.5.2016 for all the assets, after adjusting the interest during construction (IDC) as discharged on cash basis. The total capital cost up to 31.3.2019 includes the IDC, IEDC, capitalized spares and estimated additional capital expenditure from COD to 31.3.2019. The capital cost



along with estimated additional capital expenditure during the 2014-19 tariff period is reproduced below:

(₹ in lakh)

Asset	Capital Cost up to COD	Estimated Additional Capital Expenditure				Total estimated completion cost as on 31.3.2019
		2015-16	2016-17	2017-18	2018-19	
Asset I, III, IV	67949.76	-	6371.90	1486.31	-	75807.97
Asset II	14484.76	-	3175.07	-	-	17659.83
Asset V	64257.53	-	2924.30	2924.30	2924.30	73030.43
Asset VI	72688.76	2009.95	3230.25	647.67	0.00	78576.63

13. Regulation 9 (1), 9(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.”

14. The admissible capital cost of the transmission asset as on COD is worked out in the subsequent paragraphs taking into consideration the initial spares and IEDC and IDC amount.

#### **Cost over-run**

15. The petitioner has submitted the total apportioned approved cost for the instant assets is ₹211152.84 lakh. The asset wise apportioned approved costs along with the estimated completion costs are given as below:

(₹ in lakh)

<b>Asset</b>	<b>FR Apportioned approved cost</b>	<b>Total estimated completion cost as on 31.3.2019</b>
Asset I, III, IV	67401.46	75807.97
Asset II	13376.12	17659.83
Asset V	63159.29	73030.43
Asset VI	67215.97	78576.63

16. Thus, there is cost over-run in the case of instant assets. The petitioner has submitted reasons for cost variation in the assets with respect to the original FR cost.



17. As regards Asset I, the expenditure towards land compensation resulted in increase of around ₹41.00 lakh in the cost of project due to actual compensation paid on account of land compensation issues, based on the rates and assessment of District administration/Revenue authorities. There is an increase of about ₹1144.00 lakh in the awarded cost of substation and further increase/decrease in award cost received in competitive bidding compared to initial estimates (FR cost).

18. The expenditure towards land compensation in respect of In Asset III resulted in increase of around ₹431.00 lakh in cost of project due to actual compensation paid on account of land compensation issues, based on the rates and assessment of District administration/Revenue authorities. There is an increase of about ₹451.00 lakh in the awarded cost of substation.

19. As regards Asset IV, the expenditure towards crop, tree, PTCC, land and forest compensation resulted in as increase of around ₹1200.00 lakh in cost of project due to actual compensation paid on account of Right of Way (RoW) issues, based on the rates and assessment of District administration/Revenue authorities. A cost variation of approx. ₹1300 lakh (approx.) is attributable to change in route alignment due to right of way problem. It may be mentioned that the line length, type of various towers and foundation in the FR were estimated on the basis of walk-over/preliminary survey. However, during execution of the project, though these have been increase in cost due to increase in angle tower, tower erection and quantity of civil work (viz. concrete volume, reinforcement



etc), the overall cost has increase due to actual route alignment. Further, there is reduction ₹1932.00 lakh on account of transmission Line due to change in scope of LILO of 765 kV SIC Gaya-Balia Transmission line at Varanasi (on D/C tower). It was agreed in 31<sup>st</sup> SCM of NR on 2.1.2013 and 25<sup>th</sup> TCC and 28<sup>th</sup> NRPC meetings to implement Varanasi-Balia 765kV S/C direct line instead of above mentioned LILO.

20. As regards Asset II, the expenditure towards land compensation resulted in as increase of around ₹41.00 lakh in cost of project due to actual compensation paid on account of land compensation issues, based on the rates and assessment of District administration/Revenue authorities. An increase of about ₹371.00 lakh in the awarded cost of substation.

21. As regards Asset V, the expenditure towards crop, tree, PTCC, land and forest compensation resulted in as increase of around ₹1930.00 lakh in cost of project due to actual compensation paid on account of Right of Way (RoW) issues, based on the rates and assessment of District administration/Revenue authorities. There is cost variation of approx. ₹1800.00 lakh attributable to Taxes & duties actually paid against the supply and erection of Transmission line and substation materials. A cost variation of approx. ₹656.00 lakh (approx.) is attributable to change in route alignment due to right of way problem.



22. As regards Asset VI, the variation against this head is mainly due to variation in the amount of Crop/ Tree Compensation & amount towards NPV, CA, Medicinal plantation, tree felling, etc. associated with Forest Land which is based on the assessment by concerned MoEF/State Revenue Authorities/Horticulture Deptt. The tower steel quantity has reduced w r t the FR quantity in spite of rerouting of line and change in quantities of suspension and tension towers. However there is overall cost increased which is attributed awarded rate of tower steel which is on slightly higher side. 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. There is over all variation of 4-5 % on line materials viz. conductor, earth wire, insulator, hardware and accessories. The variation is due to slightly higher awarded rate and change in the no. of towers. With respect to the Line Erection and Civil works, main reasons for higher side variation in the overall erection portion w.r.t. FR is observed in civil quantities which are based on actual Soil Strata and tower erection quantities due to change of type of towers, etc.

23. We have gone through the submissions made by the petitioner to justify the cost overrun. The cost variation is based in actual site condition and as per the price received in competitive bidding. However, the petitioner has not submitted the Revised Cost Estimates (RCE) for approval of higher investment made beyond the approve estimate. We are of the view that the Board of the petitioner company should examine the variation in prudently before



consideration by the Commission. In absence of the Revised Cost Estimates (RCE), the cost of the instant assets is restricted to the respective apportioned approved cost. This approach has been upheld by the Appellate Tribunal for Electricity in its order dated 28.11.2013 in Appeal No. 165 of 2012, and subsequently the Commission, vide its order dated 18.2.2014 in Petition No. 216/TT/2012, has considered the apportioned approved cost of individual asset for restricting the capital expenditure due to cost over-run for the purpose of tariff determination. The same approach has been adopted in the present case and capital expenditure has been restricted to apportioned approved cost.

#### **Time over-run**

24. As per the investment approval, the commissioning schedule of the project is 32 months from the date of investment approval. The investment approval was accorded on 27.12.2011 and hence the schedule date of commercial operation was 26.8.2014. The actual COD for Asset I, III & IV is 1.4.2016 and for Asset V & VI is 21.4.2016 and 26.12.2015 respectively. Further, Asset II is expected to be commissioned by 15.6.2016. Hence, there is time over-run of 584 days in Asset I, III, & IV, of 604 days in Asset V, of 487 days in Asset VI and an expected time overrun of 659 days in Asset II. The petitioner has submitted following reasons for time overrun:-

#### **Delay in land acquisition of Varanasi Sub-station in Chandauli, Roopchandrapur and Thathra village:**





25. The petitioner has submitted that the delay is majorly due to the delay in acquisition of land for Varanasi substation. The first letter for acquisition of land for construction of substation has been forwarded to the DM Chandauli on 10.9.2010. A huge agitation was created by the land owners against acquisition of land. The matter then turned to political issue and local MP supported villagers against this acquisition. The letter to Chief Minister (UP) and Ministry of Power, Gol dated 22.9.2010 along with paper cutting dated 23.9.2010 is enclosed for reference. The matter was taken up with DM, Varanasi. After various efforts of the petitioner, the idea for land acquisition has been dropped and direct purchase through negotiation was opted due to delay in land acquiring. After various correspondences with administration and concerned authorities, the proposal was made to purchase land in lots for which the Gazette notification was published for section-4 and section-6 on 26.11.13 and 22.4.2014 respectively. The whole procedure took around more than two years for delay in commissioning of project from its scheduled date of commissioning. Further Asset I, II and III got delayed due to delay in land acquisition of Varanasi S/s as explained above and Asset IV due to delay of "765kV S/C Ballia Varanasi Transmission Line" as described below.

**Delay in land acquisition for Balia-Varanasi transmission line:**

26. The delay in the commissioning of 765kV S/C Balia Varanasi transmission Line, is mainly because of Forest Clearance, ROW problem, Railway Clearance



and Defence Aviation Clearance. Further delay after commissioning as submitted in the petition is due to forest clearance of Mau and Jaunpur division.

**Delay in commissioning of 765kV S/C Gaya-Varanasi Transmission Line**

27. The petitioner has submitted that the work of route alignment of 765 kV S/C Gaya - Varanasi line was completed before the award of main transmission line package. The work of detail survey was also started by the agency within a month of award of work and foundation work was commenced in August 2012. In spite of best efforts, the commissioning of the line is delayed w.r.t the schedule. This time over run is mainly attributed to various ROW problems encountered during construction of the line, forest clearance in U P and possession of land for Varanasi substation. Further, there had been frequent stoppage of work due to obstructions created by land owners being affected by the construction work. The matter had been referred to local and district authorities for resolving the issues and in most of the cases the matter had been resolved with hindrances lasting for 10-15 days and up to August 2014, 710 nos. of foundations out of 730 nos. were completed. However there were some locations where ROW problems were quite severe. However in spite of best efforts and several correspondences and regular follow up at various levels, the obstruction has not been removed till date.

28. As regards delay due to forest clearance, the petitioner has submitted that the 765 kV Gaya- Varanasi line passes through the state of Bihar and Uttar Pradesh and Social Forests (at the road and canal crossing). Works in altogether 4 sections in UP and Bihar are affected due to delay in forest clearance. With



regard forest clearance in UP, the proposals were submitted to concern DFOs on 30.7.2012 (Mirzapur and Banaras) and 11.10.2012 (Ramnagar). After completion of verification and examination of proposals the same was forwarded by DFOs to the Nodal Officer on 17.9.2013 (Banaras). Further queries raised by Nodal Officer have been complied. However requisite clearance is yet not issued by the concerned authority. Matter is being rigorously followed up with forest authorities. As regards forest clearance in Bihar, the proposal was submitted to the Nodal Officer Bihar on 30.7.2012. Stage I clearance received on 29.7.2013. As per the conditions of Stage I clearance, the petitioner had to deposit amount towards NPV, compensatory afforestation and plantation of dwarf trees. The demand for NPV was received and paid by the petitioner on 21.9.2013. However the demand against other heads viz. CA and dwarf tree plantation could be received from respective forest divisions after a lot of persuasion. Considerable time was lapsed in obtaining the demand letter for CA and dwarf plantation from all the forest divisions. In the meantime there was received till March 2015 (Demand Note received from Rohtas Division vide letter dated 23.3.15). After compliance of stage I clearance, final forest clearance was issued vide letter dated 26.8.2015.

**Justification of Delay in commissioning of 765kV S/C Ranchi Dharamjaygarh Transmission Line along with associated bays**

29. The 765 kV S/C Ranchi - Dharamjaygarh line is passing through various forest stretches in Jharkhand and Chhattisgarh states. It required forest clearance and requisite approval as per Forest Conservation Act from MoEF



before taking up the work in forest areas. On completion of detail survey it was found that 73.49 Ha and 257.17 Ha of forest area is involved in Jharkhand and Chhattisgarh states respectively. The Eastern Region portion of the line passes through Gumla and Simdega districts of Jharkhand state. These areas are naxalite infested where law and order position worsens at times and continuing the work and keeping the moral of working gangs high becomes a daunting task.

30. Further, in Chhattisgarh portion, rerouting of the line was necessitated as few coal block areas had been encountered which took considerable time. Thus the delay can be attributed mainly to the delay in obtaining forest clearance, repeated obstruction of work in the state of Jharkhand due to Maoist activities and rerouting of the line due to coal blocks encountered in the route of the line in Chhattisgarh. The details are elaborated below:

a. Delay due to forest clearance:

It took around 34 months for obtaining clearance and working permission in the state of Jharkhand. Similarly, in the state of Chhattisgarh, it took around 29 months in spite of regular follow up with different divisions of Forest Department. Thus delay in forest clearance is a major factor for over all delay of the project. After getting tree felling permission on 27.05.15, the petitioner has started the work in the dense forest area. The forest department allowed the petitioner only a meter corridor free of forest trees to work, as the valley is extremely dense which led to delay in transporting construction materials.



b. During the construction in Simdega forest Division the bridge connecting Gumla to Lohardagga was collapsed. As a result heavy vehicles stopped. Since the bridge was only connecting link between Gumla & Lohardagga, the transportation of logs and timber at Senha depot has stopped. As the bridge across the big river diversion is not possible & repairing of the bridge will take time. As a result, the transportation of logs & timber was stopped and also felling of the trees was stopped as felled trees could not be kept for a long time at site. The petitioner through letter dated 1.9.2015 requested Divisional Manager, Minor Forest Produce Division, Ranchi to provide another nearby depot so that the balance logs & timber transported. A meeting was held between the petitioner & Forest Dept. on 12.9.2015 and after detail discussion the forest deptt. has given depot at Khuti. After getting depot at Khuti the tree felling, the work was resumed & work at Location no 67/0, 67/1 & 67/2 was started in mid of September'15. These three locations were located on hard rock so the excavation of hard rock manually led to further delay. Normally for casting the foundation take around 10-15 days but due to hard rock it has taken 30-35 days. Total Foundation & Erection work took around 40-50 days.

**Re-routing due to encountering of various Coal Blocks in Chhattisgarh:**

31. Subsequent to the Investment Approval of the subject project on 27.12.2011, letter of award (LOA) was awarded for construction of this Transmission Line after a month i.e. on 13.2.2012. Subsequently, preliminary survey had been started and a most feasible route, bearing minimum forest area was approved. However, during the detailed survey, it was found that an allotted



coal block area consisting namely of Fatehpur Block, Karmitikara Block, Ourgapur/Shahpur Block, Balco Block and DB Power Block etc. was been encountered between locations AP 4210 to AP 52/0. In order to avoid these coal blocks, re-routing work was carried out at site and final/revised route was approved in Sep'2012. Accordingly, further survey works in Forest areas had been taken up.

**Delay due to Maoist activities and law and order issues in Jharkhand:**

32. The petitioner has submitted that Some stretches of Ranchi Dharamjaygarh line passes through the Maoist/ Naxalite disturbed areas of Jharkhand State (Simdega and Gumla district). These areas witness Maoist related violence quite frequently and work in the transmission line was affected and sometimes stopped due to Maoist activities/actions. On 9.7.2015 some extremist group attacked erection gang camp near Mahuatili in Kolebria area. It was difficult to continue mobilization of labour and getting resources was quite difficult and unmanageable. Due to that incident, work was affected between 9.7.15 to 29.7.15. After support from local administration, the work was finally resumed from 30.7.2015. As a result of being highly sensitive issue, work in these affected areas is being carried out taking all precautions to avoid any unwanted incident involving naxalites. Such incidences also take heavy toll on the morale of the working gang and at number of times they have to desert the sites. Further all the balance work is in forest area where hard rocks are encountered. Being extremist prone area, blasting is not being permitted and the



excavation is being carried out without using explosives, which is further adding to the delay.

33. The petitioner has submitted that the time period of delay due to "Disturbance by Maoist Activities" has been continuous/ frequent in nature in the said area. It is relevant to mention here that the exact period of delay due to these activities could not be quantified although its affect was always in the adverse side in progress of the project. Frequent de-mobilization and remobilization of construction gangs has already affected the progress of work at regular intervals. However, maximum efforts were made to nullify these effects in terms up speeding up the pace of work by the officials regularly.

### **Analysis and Decisions**

34. We have considered the submissions of the petitioner with respect to the time overrun. The views of the Commission corresponding to each reasons are as below:

35. With regard to the issue of land acquisition of Varanasi Sub-station in Chandauli, Roopchandrapur and Thathra village, it is observed that the first letter for acquisition of land for construction of substation has been forwarded to the DM Chandauli on 10.9.2010. The petitioner has submitted the documentary evidence in the forms of letter to Chief Minister (UP) and Ministry of Power, Gol dated 22.9.2010 along with paper cuttings. The matter was taken up with DM,



Varanasi. The direct purchase through negotiation was opted due to delay in land acquiring. After various correspondences with administration and concerned authorities, the Gazette notification was published for section-4 and section-6 on 26.11.13 and 22.4.2014 respectively. The whole procedure took around more than two years for delay in commissioning of project from its scheduled date of commissioning. This is to the tune of around 600 days of completing the entire process.

36. With regard to the delay in the commissioning of 765kV S/C Balia Varanasi transmission Line, the petitioner has supported the claims by the required documentary evidences. It is observed that the delay is mainly because of Forest Clearance, ROW problem, Railway Clearance and Defence Aviation Clearance. The forest clearance for Mau and Jaunpur division has further contributed to the delay in commissioning. The Commission has referred to the letters of communication submitted towards justifying the delay in getting forest clearances in above divisions.

37. As regards delay in commissioning of 765kV S/C Gaya-Varanasi Transmission Line, it is observed that the work of route alignment of 765 kV S/C Gaya - Varanasi line was completed before the award of main transmission line package. The work of detail survey was also started by the agency within a month of award of work and foundation work was commenced in August 2012. Based on the documents available, it is observed that the time over run is attributed to various ROW problems encountered during construction of the line,





forest clearance in UP and possession of land for Varanasi substation. Further, there have been severe obstructions from the local people.

38. As regards delay due to forest clearance, the petitioner has submitted that the 765 kV Gaya- Varanasi line passes through the state of Bihar and Uttar Pradesh. The petitioner has submitted the required documents to substantiate the claim towards obtaining delay in forest clearances in these 2 regions. It is observed that it took more than an year to move the application from DFOs to the Nodal Officers, despite regular persuasion by the petitioner.

39. As regards the delay in commissioning of 765 kV S/C Ranchi - Dharamjaygarh line, it is passing through various forest stretches in Jharkhand and Chhattisgarh states. These are Naxalites affected regions, where the delay was recurring in nature. Further, in Chhattisgarh portion, rerouting of the line was necessitated due to the presence of coal block areas. On perusal of the available documents, it is observed that the delay can be attributed to the delay in obtaining forest clearance (34 months in Jharkhand and 29 months in Chhattisgarh), obstruction of work in the state of Jharkhand due to Maoist activities and rerouting of the line due to coal blocks encountered in the route of the line in Chhattisgarh. There were further hindrances due to collapse of a bridge that led to delay in completing the tree felling activities. The petitioner has submitted that the same was resolved through a letter dated 1.9.2015 requesting the Divisional Manager, Minor Forest Produce Division, Ranchi to provide another nearby depot so that the balance logs & timber transported.



40. In view of the above discussion and having perused the available documents and as discussed in the aforesaid paras, we are of the view that the time over-run in the commissioning of the instant assets is beyond the control of the petitioner and not attributable to the petitioner. The time overrun of 584 days in Asset I, III, & IV, of 604 days in Asset V, of 487 days in Asset VI and an of 659 days in Asset II is thus being condoned.

**Interest during Construction (IDC) and Incidental expenditure during construction (IEDC)**

41. The petitioner has submitted, vide affidavit dated 20.5.2016, the details of IDC discharged up to COD and has adjusted the IDC discharged on cash basis for the tariff computation purpose as below:-

**Asset I, III, IV:**

(₹ in lakh)

Particulars	Asset I, III, IV: COD 1.4.2016	IDC discharged after COD during 2016-17	Capital cost on COD reducing IDC discharged on cash basis
Land – Freehold	951.73	0.00	951.73
Land - Leasehold	0.00	0.00	0.00
Building Civil Works & Colony	82.07	1.88	80.19
Transmission Line	35148.95	804.07	34344.88
Sub Station	31670.76	724.50	30946.26
PLCC	96.25	2.20	94.05
<b>Total</b>	<b>67949.76</b>	<b>1532.65</b>	<b>66417.11</b>

**Asset II:**

(₹ in lakh)



Particulars	Asset II: Ant. COD 15.6.2016	IDC discharged after COD	Capital cost on COD reducing IDC discharged on cash basis
Land – Freehold	495.29	0.00	495.29
Land - Leasehold	0.00	0.00	0.00
Building Civil Works & Colony	155.67	0.00	155.67
Transmission Line	0.00	0.00	0.00
Sub Station	13833.80	0.00	13833.80
PLCC	0.00	0.00	0.00
<b>Total</b>	<b>14484.76</b>	<b>0.00</b>	<b>14484.76</b>

**Asset V:**

(₹ in lakh)

Particulars	Asset V: COD 21.4.2016	IDC discharged after COD during 2016-17	Capital cost on COD reducing IDC discharged on cash basis
Land – Freehold	237.93	0.00	237.93
Land - Leasehold	0.00	0.00	0.00
Building Civil Works & Colony	14.05	0.23	13.82
Transmission Line	57856.92	941.87	56915.05
Sub Station	6087.30	99.10	5988.20
PLCC	61.33	1.00	60.33
<b>Total</b>	<b>64257.53</b>	<b>1042.19</b>	<b>63215.34</b>

**Asset VI:**

(₹ in lakh)

Particulars	Asset VI: COD 26.12.2015	IDC discharged after COD during 2016-17	Capital cost on COD reducing IDC discharged on cash basis
Land – Freehold	0.00	0.00	0.00
Land - Leasehold	0.00	0.00	0.00
Building Civil Works & Colony	415.39	10.75	404.64
Transmission Line	69063.69	1787.91	67275.78
Sub Station	3202.80	82.91	3119.89
PLCC	6.88	0.18	6.70
<b>Total</b>	<b>72688.76</b>	<b>1881.76</b>	<b>70807.00</b>



### **Initial Spares**

42. The petitioner has claimed initial spares vide Auditor's certificate dated 19.5.2016 for all the instant assets in respect of transmission line and substation based on the estimated cost up to cut-off date of 31.3.2019 .

43. Regulation 13 of the 2014 Tariff Regulations provide for ceiling norms for capitalization of initial spares. In case of GIS Sub-station it is 5.00%, and in transmission line it is 1.00% of the capital cost. Accordingly, the initial spares are allowed as specified in the 2014 Tariff Regulations and it is as under:-

#### **Asset I, III, IV:**

(₹ in lakh)

<b>Particulars</b>	<b>Transmission line</b>	<b>Substation</b>
Capital cost up to cut-off date	38966.95	35521.22
P&M Cost as per Auditor's Certificate (exc. IDC, IEDC, civil works)	35822.46	32802.52
Initial Spares Claimed (as submitted vide Auditor's certificate)	796.53	1045.49
P&M Cost upto 31.3.2019 after restricting it to approved cost (exc. IDC, IEDC, civil works)	32048.12	29007.41
Proportionate initial spares worked out	712.61	924.53
Ceiling limit as per 2014 Regulation	1.00%	5.00%
	316.52	1478.05
Excess initial spares	480.01	0.00

#### **Asset II:**

(₹ in lakh)

<b>Particulars</b>	<b>Substation</b>
Capital cost up to cut-off date	16475.15



Particulars	Substation
P&M Cost as per Auditor's Certificate (exc. IDC,IEDC, civil works)	14708.19
Initial Spares Claimed (as submitted vide Auditor's certificate)	676.00
P&M Cost upto 31.3.2019 after restricting it to approved cost (exc. IDC,IEDC, civil works)	11404.87
Proportionate initial spares worked out	524.18
Ceiling limit as per 2014 Regulation	5.00%
	572.67
Excess initial spares	0.00

#### Asset V:

(₹ in lakh)

Particulars	Transmission line	Substation
Capital cost up to cut-off date	60001.19	7765.02
P&M Cost as per Auditor's Certificate (exc. IDC,IEDC, civil works)	51990.09	7053.26
Initial Spares Claimed (as submitted vide Auditor's certificate)	520.00	12.74
P&M Cost upto 31.3.2019 after restricting it to approved cost (exc. IDC,IEDC, civil works)	49272.28	5434.49
Proportionate initial spares worked out	492.82	9.82
Ceiling limit as per 2014 Regulation	1.00%	5.00%
	492.72	285.51
Excess initial spares	0.09	0.00

#### Asset VI:

(₹ in lakh)

Particulars	Transmission line	Substation
Capital cost up to cut-off date	73727.99	4248.18
P&M Cost as per Auditor's Certificate (exc. IDC,IEDC, civil works)	65022.31	3732.02



Particulars	Transmission line	Substation
Initial Spares Claimed (as submitted vide Auditor's certificate)	686.57	202.02
P&M Cost upto 31.3.2019 after restricting it to approved cost (exc. IDC, IEDC, civil works)	56322.90	2601.81
Proportionate initial spares worked out	594.71	140.84
Ceiling limit as per 2014 Regulation	1.00%	5.00%
	562.91	129.52
Excess initial spares	31.80	11.32

44. The initial spares claimed by the petitioner in respect of transmission line in Asset I, III, IV and Asset V are in excess by ₹480.01 lakh and ₹0.09 lakh respectively and in respect of transmission line & sub-station in Asset VI are in excess by ₹31.80 lakh and ₹11.32 lakh respectively. The initial spares for remaining assets are within the limits prescribed under Regulation 13 of the Tariff Regulation, 2014.

45. Thus, the capital cost on COD considered for tariff determination for the instant assets are as below:

**Asset I, III, IV:**

(₹ in lakh)

Particulars	Asset I, III, IV: COD 1.4.2016	IDC discharged after COD	Capital cost on COD reducing IDC discharged on cash basis	Excess initial spares	Capital cost considered for tariff determination
Land – Freehold	951.73		951.73		951.73
Land - Leasehold	0.00	0.00	0.00		0.00
Building Civil Works & Colony	82.07	1.88	80.19		80.19
Transmission Line	35148.95	804.07	34344.88	480.01	33864.87
Sub Station	31670.76	724.50	30946.26		30946.26



Particulars	Asset I, III, IV: COD 1.4.2016	IDC discharged after COD	Capital cost on COD reducing IDC discharged on cash basis	Excess initial spares	Capital cost considered for tariff determination
PLCC	96.25	2.20	94.05		94.05
<b>Total</b>	<b>67949.76</b>	<b>1532.65*</b>	<b>66417.11</b>		<b>65937.10</b>

\* To be discharged as additional capital expenditure during 2016-17

## Asset II:

(₹ in lakh)

Particulars	Asset II: COD 15.6.2016	Capital cost considered for tariff determination
Land – Freehold	495.29	457.38
Land - Leasehold	0.00	0.00
Building Civil Works & Colony	155.67	143.76
Transmission Line	0.00	0.00
Sub Station	13833.80	12774.98
PLCC	0.00	0.00
<b>Total</b>	<b>14484.76</b>	<b>13376.12*</b>

\* Restricted to the apportioned approved cost

## Asset V:

(₹ in lakh)

Particulars	Asset V: COD 21.4.2016	IDC discharged after COD	Capital cost on COD reducing IDC discharged on cash basis	Capital cost after restricting to the approved cost	Excess initial spares	Capital cost considered for tariff determination
Land – Freehold	237.93		237.93	237.72		237.72
Land - Leasehold	0.00	0.00	0.00	0.00		0.00
Building Civil Works & Colony	14.05	0.23	13.82	13.81		13.81
Transmission Line	57856.92	941.87	56915.05	56864.59	0.09	56864.49
Sub Station	6087.30	99.10	5988.20	5982.89		5982.89
PLCC	61.33	1.00	60.33	60.28		60.28
<b>Total</b>	<b>64257.53</b>	<b>1042.19</b>	<b>63215.34</b>	<b>63159.29</b>		<b>63159.20</b>



**Asset VI:**

(₹ in lakh)

Particulars	Asset VI: COD 26.12.2015	IDC discharge d after COD	Capital cost on COD reducing IDC discharged on cash basis	Capital cost after restricting to the approved cost	Excess initial spares	Capital cost considered for tariff determinati on
Land – Freehold	0.00		0.00	0.00		0.00
Land - Leasehold	0.00	0.00	0.00	0.00		0.00
Building Civil Works & Colony	415.39	10.75	404.64	384.11		384.11
Transmission Line	69063.69	1787.91	67275.78	63863.83	31.80	63832.03
Sub Station	3202.80	82.91	3119.89	2961.66	11.32	2950.34
PLCC	6.88	0.18	6.70	6.36	-	6.36
<b>Total</b>	<b>72688.76</b>	<b>1881.76</b>	<b>70807.00</b>	<b>67215.97</b>	<b>43.12</b>	<b>67172.85</b>

**Additional Capital Expenditure**

46. The petitioner has proposed additional capitalization for the instant assets as below:

(₹ in lakh)

Asset	FR Apportio ned approved cost	Capital Cost up to COD	Estimated Additional Capital Expenditure				Total estimated completion cost as on 31.3.2019
			2015-16	2016-17	2017-18	2018-19	
Asset I, III, IV	67401.46	67949.76		6371.90	1486.31		75807.97
Asset II	13376.12	14484.76		3175.07			17659.83
Asset V	63159.29	64257.53		2924.30	2924.30	2924.30	73030.43
Asset VI	67215.97	72688.76	2009.95	3230.25	647.67	0.00	78576.63

The claim for additional capital expenditure is towards balance and retention payments under Regulation 14(1) of 2014 Tariff Regulations.





47. 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;”

48. As discussed in the aforesaid paras, the completion cost of the instant assets has been restricted to the apportioned approved cost in absence of RCE. Thus, the additional capital expenditure allowed under Regulation 14(1) of 2014 Tariff Regulations, subject to true up on actual basis. The additional capital expenditure approved during 2014-19 is as below:

(₹ in lakh)

Asset	Capital Cost up to COD	Approved Additional capital expenditure				Total estimated completion cost as on 31.3.2019
		2015-16	2016-17	2017-18	2018-19	
Asset I, III, IV	65937.10		984.35*	-		66921.45
Asset II	13376.12	-	-	-	-	13376.12
Asset V	63159.20	-	-	-	-	63159.20
Asset VI	67172.85	-	-	-	-	67172.85

### **Debt: Equity Ratio**

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

**“19. Debt-Equity Ratio:** (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:



Provided that:

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

50. The petitioner has considered debt:equity ratio as 70:30 as on COD and debt:equity ratio as 70:30 for additional capitalization during 2014-19 tariff period. Accordingly, we have considered the same for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Funding	As on COD	(%)	Additional capital expenditure during 2014-19	(%)	As on 31.3.2019	(%)
<b>Asset-I, III, IV</b>						
Debt	46155.97	70.00	689.04	70.00	46845.02	70.00
Equity	19781.13	30.00	295.30	30.00	20076.44	30.00
<b>Total</b>	<b>65937.10</b>	<b>100.00</b>	<b>984.35</b>	<b>100.00</b>	<b>66921.45</b>	<b>100.00</b>
<b>Asset-II</b>						
Debt	9363.28	70.00	0.00	70.00	9363.28	70.00
Equity	4012.84	30.00	0.00	30.00	4012.84	30.00
<b>Total</b>	<b>13376.12</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>13376.12</b>	<b>100.00</b>
<b>Asset-V</b>						
Debt	44518.76	70.00	0.00	70.00	44518.76	70.00
Equity	18640.43	30.00	0.00	30.00	18640.43	30.00
<b>Total</b>	<b>63159.20</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>63159.20</b>	<b>100.00</b>
<b>Asset-VI</b>						
Debt	47021.00	70.00	0.00	70.00	47021.00	70.00
Equity	20151.86	30.00	0.00	30.00	20151.86	30.00
<b>Total</b>	<b>67172.85</b>	<b>100.00</b>	<b>0.00</b>	<b>100.00</b>	<b>67172.85</b>	<b>100.00</b>

### Interest on Loan (“IOL”)



51. 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.”

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



**Asset I, III, IV:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross loan opening	46155.97	46845.02	46845.02
Cumulative Repayment upto previous year	0.00	3456.64	6939.27
Net Loan-Opening	46155.97	43388.37	39905.75
Additions during the year	689.04	0.00	0.00
Repayment during the year	3456.64	3482.62	3482.62
Net Loan-Closing	43388.37	39905.75	36423.12
Average Loan	44772.17	41647.06	38164.44
Rate of Interest (%)	8.9571	8.9574	8.9594
<b>Interest on Loan</b>	<b>4010.30</b>	<b>3730.48</b>	<b>3419.30</b>

**Asset II:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross loan opening	9363.28	9363.28	9363.28
Cumulative Repayment upto previous year	0.00	539.73	1219.05
Net Loan-Opening	9363.28	8823.55	8144.23
Additions during the year	0.00	0.00	0.00
Repayment during the year	539.73	679.32	679.32
Net Loan-Closing	8823.55	8144.23	7464.91
Average Loan	9093.42	8483.89	7804.57
Rate of Interest (%)	9.1390	9.1336	9.1436
<b>Interest on Loan</b>	<b>660.28</b>	<b>774.89</b>	<b>713.62</b>

**Asset V:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross loan opening	44518.76	44518.76	44518.76
Cumulative Repayment upto previous year	0.00	3140.56	6463.18



Net Loan-Opening	44518.76	41378.20	38055.58
Additions during the year	0.00	0.00	0.00
Repayment during the year	3140.56	3322.62	3322.62
Net Loan-Closing	41378.20	38055.58	34732.97
Average Loan	42948.48	39716.89	36394.28
Rate of Interest (%)	8.8410	8.8476	8.8638
<b>Interest on Loan</b>	<b>3589.03</b>	<b>3514.00</b>	<b>3225.92</b>

#### Asset VI:

Particulars	(₹ in lakh)			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	47021.00	47021.00	47021.00	47021.00
Cumulative Repayment upto previous year	0.00	938.02	4477.36	8016.71
Net Loan-Opening	47021.00	46082.97	42543.63	39004.29
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	938.02	3539.34	3539.34	3539.34
Net Loan-Closing	46082.97	42543.63	39004.29	35464.95
Average Loan	46551.99	44313.30	40773.96	37234.62
Rate of Interest (%)	8.7772	8.7817	8.7746	8.7658
<b>Interest on Loan</b>	<b>1082.89</b>	<b>3891.45</b>	<b>3577.73</b>	<b>3263.91</b>

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

53. 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.”

54. The petitioner has claimed ROE at the rate of 19.705% 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.

55. 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.



56. 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 of 21.342% is applicable to the petitioner's company during 2015-16. Accordingly, the MAT rate applicable during 2015-16 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the instant transmission asset is given below:-

**Asset-I, III, IV:**

(₹ in lakh)

<b>Return on Equity</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	19781.13	20076.44	20076.44
Additions	295.30	0.00	0.00
Closing Equity	20076.44	20076.44	20076.44
Average Equity	19928.78	20076.44	20076.44
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705
<b>Return on Equity</b>	<b>3927.06</b>	<b>3956.15</b>	<b>3956.15</b>

**Asset-II:**

(₹ in lakh)

<b>Return on Equity</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	4012.84	4012.84	4012.84
Additions	0.00	0.00	0.00



Return on Equity	2016-17 (pro-rata)	2017-18	2018-19
Closing Equity	4012.84	4012.84	4012.84
Average Equity	4012.84	4012.84	4012.84
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705
<b>Return on Equity</b>	<b>628.27</b>	<b>790.75</b>	<b>790.75</b>

**Asset-V:**

(₹ in lakh)

Return on Equity	2016-17 (pro-rata)	2017-18	2018-19
Opening Equity	18640.43	18640.43	18640.43
Additions	0.00	0.00	0.00
Closing Equity	18640.43	18640.43	18640.43
Average Equity	18640.43	18640.43	18640.43
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705
<b>Return on Equity</b>	<b>3471.91</b>	<b>3673.18</b>	<b>3673.18</b>

**Asset-VI:**

(₹ in lakh)

Return on Equity	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	20151.86	20151.86	20151.86	20151.86
Additions	0.00	0.00	0.00	0.00
Closing Equity	20151.86	20151.86	20151.86	20151.86
Average Equity	20151.86	20151.86	20151.86	20151.86
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
<b>Return on Equity</b>	<b>1052.43</b>	<b>3971.02</b>	<b>3971.02</b>	<b>3971.02</b>

**Depreciation**

57. 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.”

58. 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”

59. The details of the depreciation allowed in accordance with above Regulations are given hereunder:-



**Asset I, III, IV:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Opening Gross block	65937.10	66921.45	66921.45
Additional Capitalization	984.35	0.00	0.00
Closing Gross block	66921.45	66921.45	66921.45
Average Gross block	66429.28	66921.45	66921.45
Rate of Depreciation (%)	5.20	5.20	5.20
Depreciable Value	58929.79	59372.75	59372.75
Elapsed Life of the assets at beginning of the year	30	29	28
Weighted Balance Useful life of the assets	0	1	2
Remaining Depreciable Value	58929.79	52433.48	48950.86
Depreciation during the year	3456.64	3482.62	3482.62
Cumulative depreciation	3456.64	6939.27	10421.89

**Asset II:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Opening Gross block	13376.12	13376.12	13376.12
Additional Capitalization	0.00	0.00	0.00
Closing Gross block	13376.12	13376.12	13376.12
Average Gross block	13376.12	13376.12	13376.12
Rate of Depreciation (%)	5.08	5.08	5.08
Depreciable Value	11626.86	11626.86	11626.86
Elapsed Life of the assets at beginning of the year	25	24	23
Weighted Balance Useful life of the assets	0	1	2
Remaining Depreciable Value	11626.86	10407.81	9728.49
Depreciation during the year	539.73	679.32	679.32
Cumulative depreciation	539.73	1219.05	1898.38

**Asset V:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Opening Gross block	63159.20	63159.20	63159.20
Additional Capitalization	0.00	0.00	0.00
Closing Gross block	63159.20	63159.20	63159.20
Average Gross block	63159.20	63159.20	63159.20



Particulars	2016-17 (pro-rata)	2017-18	2018-19
Rate of Depreciation (%)	5.26	5.26	5.26
Depreciable Value	56629.33	56629.33	56629.33
Elapsed Life of the assets at beginning of the year	34.00	33.00	32.00
Weighted Balance Useful life of the assets	0.00	1.00	2.00
Remaining Depreciable Value	56629.33	50166.15	46843.53
Depreciation during the year	3140.56	3322.62	3322.62
Cumulative depreciation	3140.56	6463.18	9785.80

#### Asset VI:

Particulars	(₹ in lakh)			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross block	67172.85	67172.85	67172.85	67172.85
Additional Capitalization	0.00	0.00	0.00	0.00
Closing Gross block	67172.85	67172.85	67172.85	67172.85
Average Gross block	67172.85	67172.85	67172.85	67172.85
Rate of Depreciation (%)	5.27	5.27	5.27	5.27
Depreciable Value	60455.57	60455.57	60455.57	60455.57
Elapsed Life of the assets at beginning of the year	35	34	33	32
Weighted Balance Useful life of the assets	0	1	2	3
Remaining Depreciable Value	60455.57	55978.20	52438.86	48899.52
Depreciation during the year	938.02	3539.34	3539.34	3539.34
Cumulative depreciation	938.02	4477.36	8016.71	11556.05

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

60. The petitioner has submitted that the wage revision of the employees of the petitioner company is due during 2014-19 and actual impact of wage hike which will be effective from a future date has also not been factored in fixation of the normative O&M rate specified for the 2014-19 tariff period. The petitioner has also submitted that it will approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase.



61. We have considered the submissions of the petitioner. We would like to clarify that any application filed by the petitioner for revision of O&M Expenses on account of wage revision will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations. The O&M Expenses are allowed for the instant transmission assets as per the prevailing norms.

62. Clause 3(a) of Regulation 29 of the 2014 Tariff Regulations specify the norms for O&M Expenses for the transmission system. The total allowable O&M Expenses for the instant assets are as follows:-

**Asset-I, III, IV:**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>400 kV GIS bay</b>			
No.	1	1	1
Norms (₹ lakh/bay)	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	55.02	56.84	58.73
<b>765 kV bay</b>			
No.	4	4	4
Norms (₹ lakh/bay)	90.12	93.11	96.20
Total O&M Expenses (₹ lakh)	360.48	372.44	384.80
<b>D/C bundled (4 or more sub-con.)</b>			
KMs	2.569	2.569	2.569
Norms (₹ lakh/KM)	1.133	1.171	1.21
Total O&M Expenses (₹ lakh)	2.91	3.01	3.11
<b>S/C bundled (4 or more sub-con.)</b>			
KMs	163.341	163.341	163.341
Norms (₹ lakh/KM)	0.647	0.669	0.691
Total O&M Expenses (₹ lakh)	105.68	109.28	112.87
<b>Total O&amp;M Expenses (₹ lakh)</b>	<b>524.09</b>	<b>541.56</b>	<b>559.51</b>



**Asset-II:**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>400 kV GIS bay</b>			
No.	1	1	1
Norms (₹ lakh/bay)	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	55.02	56.84	58.73
<b>765 kV bay</b>			
No.	1	1	1
Norms (₹ lakh/bay)	90.12	93.11	96.20
Total O&M Expenses (₹ lakh)	90.12	93.11	96.20
<b>Total O&amp;M Expenses (₹ lakh)</b>	<b>115.32</b>	<b>149.95</b>	<b>154.93</b>

**Asset-V:**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>765 kV bay</b>			
No.	1	1	1
Norms (₹ lakh/bay)	90.12	93.11	96.20
Total O&M Expenses (₹ lakh)	360.48	372.44	384.80
<b>S/C bundled (4 or more sub-con.)</b>			
KMs	273.34	273.34	273.34
Norms (₹ lakh/KM)	0.647	0.669	0.691
Total O&M Expenses (₹ lakh)	176.85	182.86	188.88
<b>Total O&amp;M Expenses (₹ lakh)</b>	<b>252.34</b>	<b>275.97</b>	<b>285.08</b>

**Asset-VI:**

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>765 kV bay</b>				
No.	1	1	1	1
Norms (₹ lakh/bay)	87.22	90.12	93.11	96.20
Total O&M Expenses (₹ lakh)	87.22	90.12	93.11	96.20
<b>S/C bundled (4 or more sub-con.)</b>				
KMs	344.621	344.621	344.621	344.621



Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Norms (₹ lakh/KM)	0.627	0.647	0.669	0.691
Total O&M Expenses (₹ lakh)	216.08	222.97	230.55	238.13
<b>Total O&amp;M Expenses (₹ lakh)</b>	<b>80.38</b>	<b>313.09</b>	<b>323.66</b>	<b>334.33</b>

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

63. 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).

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

**Asset-I, III, IV:**

(₹ in lakh)

<b>Interest on Working Capital</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
O & M expenses	43.67	45.13	46.63
Maintenance Spares	78.61	81.23	83.93



<b>Interest on Working Capital</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Receivables	2034.88	1999.64	1949.74
Total	2157.17	2126.00	2080.29
Rate of Interest (%)	13.50	13.50	13.50
Interest on Working Capital	291.22	287.01	280.84

**Asset-II:**

(₹ in lakh)

<b>Interest on Working Capital</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
O & M expenses	12.10	12.50	12.91
Maintenance Spares	21.77	22.49	23.24
Receivables	417.87	409.14	399.57
Total	451.74	444.13	435.72
Rate of Interest (%)	13.50	13.50	13.50
Interest on Working Capital	48.45	59.96	58.82

**Asset-V:**

(₹ in lakh)

<b>Interest on Working Capital</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
O & M expenses	22.25	23.00	23.76
Maintenance Spares	40.05	41.40	42.76
Receivables	1887.17	1840.49	1792.97
Total	1949.47	1904.88	1859.49
Rate of Interest (%)	13.50	13.50	13.50
Interest on Working Capital	248.76	257.16	251.03

**Asset-VI:**

(₹ in lakh)

<b>Interest on Working Capital</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M expenses	25.27	26.09	26.97	27.86
Maintenance Spares	45.49	46.96	48.55	50.15
Receivables	2030.55	1999.11	1947.48	1895.85
Total	2101.31	2072.16	2023.00	1973.86
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on Working Capital	75.18	279.74	273.10	266.47





## Annual Transmission Charges

65. 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:-

### **Asset I, III, IV:**

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>Depreciation</b>			
Opening Gross Block	65937.10	66921.45	66921.45
Additional Capitalisation	984.35	0.00	0.00
Closing Gross Block	66921.45	66921.45	66921.45
Average Gross Block	66429.28	66921.45	66921.45
Rate of Depreciation (%)	5.20	5.20	5.20
Depreciable Value	58929.79	59372.75	59372.75
Balance useful life of the asset	30	29	28
Elapsed life	0	1	2
Remaining Depreciable Value	58929.79	52433.48	48950.86
Depreciation during the year	3456.64	3482.62	3482.62
Cumulative depreciation (incl. of AAD)	3456.64	6939.27	10421.89
<b>Interest on Loan</b>			
Gross Normative Loan	46155.97	46845.02	46845.02
Cumulative Repayments upto Previous Year	0.00	3456.64	6939.27
Net Loan-Opening	46155.97	43388.37	39905.75
Additions	689.04	0.00	0.00
Repayment during the year	3456.64	3482.62	3482.62
Net Loan-Closing	43388.37	39905.75	36423.12
Average Loan	44772.17	41647.06	38164.44
Weighted Average Rate of Interest on Loan (%)	8.9571	8.9574	8.9594
Interest on Loan	4010.30	3730.48	3419.30
<b>Return on Equity</b>			
Opening Equity	19781.13	20076.44	20076.44
Additions	295.30	0.00	0.00
Closing Equity	20076.44	20076.44	20076.44
Average Equity	19928.78	20076.44	20076.44
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342



Particulars	2016-17 (pro-rata)	2017-18	2018-19
Rate of Return on Equity (%)	19.705	19.705	19.705
Return on Equity	3927.06	3956.15	3956.15
<b>Interest on Working Capital</b>			
O & M Expenses	43.67	45.13	46.63
Maintenance Spares	78.61	81.23	83.93
Receivables	2034.88	1999.64	1949.74
Total Working Capital	2157.17	2126.00	2080.29
Rate of Interest (%)	13.50	13.50	13.50
Interest of working capital	291.22	287.01	280.84
<b>Annual Transmission Charges</b>			
Depreciation	3456.64	3482.62	3482.62
Interest on Loan	4010.30	3730.48	3419.30
Return on Equity	3927.06	3956.15	3956.15
Interest on Working Capital	291.22	287.01	280.84
O & M Expenses	524.09	541.56	559.51
<b>Total</b>	<b>12209.31</b>	<b>11997.83</b>	<b>11698.43</b>

#### Asset II:

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>Depreciation</b>			
Opening Gross Block	13376.12	13376.12	13376.12
Additional Capitalisation	0.00	0.00	0.00
Closing Gross Block	13376.12	13376.12	13376.12
Average Gross Block	13376.12	13376.12	13376.12
Rate of Depreciation (%)	5.08	5.08	5.08
Depreciable Value	11626.86	11626.86	11626.86
Balance useful life of the asset	25	24	23
Elapsed life	0	1	2
Remaining Depreciable Value	11626.86	10407.81	9728.49
Depreciation during the year	539.73	679.32	679.32
Cumulative depreciation (incl. of AAD)	539.73	1219.05	1898.38
<b>Interest on Loan</b>			
Gross Normative Loan	9363.28	9363.28	9363.28
Cumulative Repayments upto Previous Year	0.00	539.73	1219.05
Net Loan-Opening	9363.28	8823.55	8144.23
Additions	0.00	0.00	0.00
Repayment during the year	539.73	679.32	679.32



Particulars	2016-17 (pro-rata)	2017-18	2018-19
Net Loan-Closing	8823.55	8144.23	7464.91
Average Loan	9093.42	8483.89	7804.57
Weighted Average Rate of Interest on Loan (%)	9.1390	9.1336	9.1436
Interest on Loan	660.28	774.89	713.62
<b>Return on Equity</b>			
Opening Equity	4012.84	4012.84	4012.84
Additions	0.00	0.00	0.00
Closing Equity	4012.84	4012.84	4012.84
Average Equity	4012.84	4012.84	4012.84
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705
Return on Equity	628.27	790.75	790.75
<b>Interest on Working Capital</b>			
O & M Expenses	12.10	12.50	12.91
Maintenance Spares	21.77	22.49	23.24
Receivables	417.87	409.14	399.57
Total Working Capital	451.74	444.13	435.72
Rate of Interest (%)	13.50	13.50	13.50
Interest of working capital	48.45	59.96	58.82
<b>Annual Transmission Charges</b>			
Depreciation	539.73	679.32	679.32
Interest on Loan	660.28	774.89	713.62
Return on Equity	628.27	790.75	790.75
Interest on Working Capital	48.45	59.96	58.82
O & M Expenses	115.32	149.95	154.93
<b>Total</b>	<b>1992.05</b>	<b>2454.86</b>	<b>2397.44</b>

#### Asset V:

Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>Depreciation</b>			
Opening Gross Block	63159.20	63159.20	63159.20
Additional Capitalisation	0.00	0.00	0.00
Closing Gross Block	63159.20	63159.20	63159.20
Average Gross Block	63159.20	63159.20	63159.20
Rate of Depreciation (%)	5.26	5.26	5.26



<b>Particulars</b>	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciable Value	56629.33	56629.33	56629.33
Balance useful life of the asset	34.00	33.00	32.00
Elapsed life	0.00	1.00	2.00
Remaining Depreciable Value	56629.33	50166.15	46843.53
Depreciation during the year	3140.56	3322.62	3322.62
Cumulative depreciation (incl. of AAD)	3140.56	6463.18	9785.80
<b>Interest on Loan</b>			
Gross Normative Loan	44518.76	44518.76	44518.76
Cumulative Repayments upto Previous Year	0.00	3140.56	6463.18
Net Loan-Opening	44518.76	41378.20	38055.58
Additions	0.00	0.00	0.00
Repayment during the year	3140.56	3322.62	3322.62
Net Loan-Closing	41378.20	38055.58	34732.97
Average Loan	42948.48	39716.89	36394.28
Weighted Average Rate of Interest on Loan (%)	8.8410	8.8476	8.8638
Interest on Loan	3589.03	3514.00	3225.92
<b>Return on Equity</b>			
Opening Equity	18640.43	18640.43	18640.43
Additions	0.00	0.00	0.00
Closing Equity	18640.43	18640.43	18640.43
Average Equity	18640.43	18640.43	18640.43
Return on Equity (Base Rate) (%)	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705
Return on Equity	3471.91	3673.18	3673.18
<b>Interest on Working Capital</b>			
O & M Expenses	22.25	23.00	23.76
Maintenance Spares	40.05	41.40	42.76
Receivables	1887.17	1840.49	1792.97
Total Working Capital	1949.47	1904.88	1859.49
Rate of Interest (%)	13.50	13.50	13.50
Interest of working capital	248.76	257.16	251.03
<b>Annual Transmission Charges</b>			
Depreciation	3140.56	3322.62	3322.62
Interest on Loan	3589.03	3514.00	3225.92
Return on Equity	3471.91	3673.18	3673.18
Interest on Working Capital	248.76	257.16	251.03
O & M Expenses	252.34	275.97	285.08



Particulars	2016-17 (pro-rata)	2017-18	2018-19
<b>Total</b>	<b>10702.60</b>	<b>11042.93</b>	<b>10757.83</b>

#### Asset VI:

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Depreciation</b>				
Opening Gross Block	67172.85	67172.85	67172.85	67172.85
Additional Capitalisation	0.00	0.00	0.00	0.00
Closing Gross Block	67172.85	67172.85	67172.85	67172.85
Average Gross Block	67172.85	67172.85	67172.85	67172.85
Rate of Depreciation (%)	5.27	5.27	5.27	5.27
Depreciable Value	60455.57	60455.57	60455.57	60455.57
Balance useful life of the asset	35	34	33	32
Elapsed life	0	1	2	3
Remaining Depreciable Value	60455.57	55978.20	52438.86	48899.52
Depreciation during the year	938.02	3539.34	3539.34	3539.34
Cumulative depreciation (incl. of AAD)	938.02	4477.36	8016.71	11556.05
<b>Interest on Loan</b>				
Gross Normative Loan	47021.00	47021.00	47021.00	47021.00
Cumulative Repayments upto Previous Year	0.00	938.02	4477.36	8016.71
Net Loan-Opening	47021.00	46082.97	42543.63	39004.29
Additions	0.00	0.00	0.00	0.00
Repayment during the year	938.02	3539.34	3539.34	3539.34
Net Loan-Closing	46082.97	42543.63	39004.29	35464.95
Average Loan	46551.99	44313.30	40773.96	37234.62
Weighted Average Rate of Interest on Loan (%)	8.7772	8.7817	8.7746	8.7658
Interest on Loan	1082.89	3891.45	3577.73	3263.91
<b>Return on Equity</b>				
Opening Equity	20151.86	20151.86	20151.86	20151.86
Additions	0.00	0.00	0.00	0.00
Closing Equity	20151.86	20151.86	20151.86	20151.86
Average Equity	20151.86	20151.86	20151.86	20151.86
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	1052.43	3971.02	3971.02	3971.02



Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Interest on Working Capital</b>				
O & M Expenses	25.27	26.09	26.97	27.86
Maintenance Spares	45.49	46.96	48.55	50.15
Receivables	2030.55	1999.11	1947.48	1895.85
Total Working Capital	2101.31	2072.16	2023.00	1973.86
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest of working capital	75.18	279.74	273.10	266.47
<b>Annual Transmission Charges</b>				
Depreciation	938.02	3539.34	3539.34	3539.34
Interest on Loan	1082.89	3891.45	3577.73	3263.91
Return on Equity	1052.43	3971.02	3971.02	3971.02
Interest on Working Capital	75.18	279.74	273.10	266.47
O & M Expenses	80.38	313.09	323.66	334.33
<b>Total</b>	<b>3228.90</b>	<b>11994.64</b>	<b>11684.86</b>	<b>11375.07</b>

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

66. 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**

67. 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**

68. 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**

69. The transmission charges for Asset II shall be applicable from the date of actual commercial operation date and 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.

70. This order disposes of Petition No. 273/TT/2015.

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

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



**ANNEXURE-I**

**Asset I, III, IV:**

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

(in ₹ lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2016	Additions during the tariff period	Total
BOND XXXIX-DOCO-	9.40	150.00	0.00	150.00
SBI (21.03.2012)-DOCO-	9.55	163.00	0.00	163.00
BOND-XLI-DOCO-	8.85	300.00	0.00	300.00
BOND - XLIII-DOCO-	7.93	1585.81	0.00	1585.81
Interest Rate (%)	8.70	1093.03	0.00	1093.03
BOND - XLV-DOCO-	9.65	1750.00	0.00	1750.00
SBI (2014-15)-DOCO-	9.55	11289.32	0.00	11289.32
BOND XLVI -DOCO-	9.30	4314.14	0.00	4314.14
Bond XLVII-DOCO-	8.93	14444.19	0.00	14444.19
Bond XLVIII-DOCO-	8.20	2339.49	0.00	2339.49
BOND XLIX-DOCO-	8.15	1563.00	0.00	1563.00
BOND L-DOCO-	8.40	6000.00	0.00	6000.00
BOND LI-DOCO-	8.40	1500.00	0.00	1500.00
<b>Total</b>		<b>46491.98</b>	<b>0.00</b>	<b>46491.98</b>





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

(₹ in lakh)

<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	46491.98	46491.98	46491.98
Cumulative Repayments of Loans upto Previous Year	0.00	39.82	357.62
Net Loans Opening	46491.98	46452.16	46134.36
Add: Draw(s) during the Year	0.00	0.00	0.00
Less: Repayments of Loan during the year	39.82	317.80	1885.82
Net Closing Loan	46452.16	46134.36	44248.54
Average Net Loan	46472.07	46293.26	45191.45
Rate of Interest on Loan (%)	8.9571%	8.9574%	8.9594%
Interest on Loan	4162.56	4146.66	4048.88



**Asset II:****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19**

(in ₹ lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2016	Additions during the tariff period	Total
SBI (21.03.2012)-DOCO-	9.55	1400.00	0.00	1400.00
BOND - XLIV-DOCO-	8.70	2000.00	0.00	2000.00
BOND-XLV-DOCO-	9.65	38.00	0.00	38.00
SBI (2014-15)-DOCO-	9.55	4253.92	0.00	4253.92
BOND XLVI - DOCO-	9.30	500.00	0.00	500.00
Bond XLVII-DOCO-	8.93	500.00	0.00	500.00
Bond XLVIII-DOCO-	8.20	500.00	0.00	500.00
BOND XLIX-DOCO-	8.15	500.00	0.00	500.00
Proposed Loan(2016-17)	8.13	447.41	0.00	447.41
<b>Total</b>		<b>10139.33</b>	<b>0.00</b>	<b>10139.33</b>

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

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19
Gross Opening Loan	10139.33	10139.33	10139.33
Cumulative Repayments of Loans up to Previous Year	0.00	127.27	257.71
Net Loans Opening	<b>10139.33</b>	<b>10012.06</b>	<b>9881.62</b>
Add: Draw(s) during the Year	0.00	0.00	0.00
Less: Repayments of Loan during the year	127.27	130.44	838.78
Net Closing Loan	<b>10012.06</b>	<b>9881.62</b>	<b>9042.84</b>
Average Net Loan	10075.70	9946.84	9462.23
Rate of Interest on Loan (%)	9.1390%	9.1336%	9.1436%
Interest on Loan	920.81	908.51	865.19



**Asset V:****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19**

(in ₹ lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2016	Additions during the tariff period	Total
BOND XXXIX-DOCO-	9.40	1919.00	0.00	1919.00
SBI (21.03.2012)-Doco-	9.55	290.00	0.00	290.00
BOND - XLI-DOCO-	8.85	5916.00	0.00	5916.00
BOND - XLIII-DOCO-	7.93	11583.19	0.00	11583.19
BOND - XLIV-DOCO-	8.70	3000.00	0.00	3000.00
BOND - XLV-DOCO-	9.65	4000.00	0.00	4000.00
SBI (2014-15 )-DOCO-	9.55	5731.44	0.00	5731.44
BOND XLVI -DOCO-	9.30	4655.58	0.00	4655.58
Bond XLVII-DOCO-	8.93	6000.00	0.00	6000.00
BOND L-DOCO-	8.40	693.00	0.00	693.00
BOND LI-DOCO-	8.40	292.25	0.00	292.25
PROPOSED LOAN 2016-17 INTT 9.55%-DOCO-	9.55	170.28	0.00	170.28
<b>Total</b>		<b>44250.74</b>	<b>0.00</b>	<b>44250.74</b>

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

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19
Gross Opening Loan	44250.74	44250.74	44250.74
Cumulative Repayments of Loans up to Previous Year	0.00	519.36	2337.32
Net Loans Opening	<b>44250.74</b>	<b>43731.38</b>	<b>41913.42</b>
Add: Draw(s) during the Year	0.00	0.00	0.00
Less: Repayments of Loan during the year	519.36	1817.96	3317.96
Net Closing Loan	<b>43731.38</b>	<b>41913.42</b>	<b>38595.46</b>
Average Net Loan	43991.06	42822.40	40254.44
Rate of Interest on Loan (%)	8.8410%	8.8476%	8.8638%
Interest on Loan	3889.26	3788.76	3568.08



**Asset VI:****DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19**

(in ₹ lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
BOND XXXIX-DOCO-	9.40	1000.00	0.00	1000.00
SBI (21.03.2012)-Doco-	9.55	3500.00	0.00	3500.00
BOND XL-DOCO-	9.30	593.00	0.00	593.00
BOND - XLI-DOCO-	8.85	6500.00	0.00	6500.00
BOND - XLII-DOCO-	8.80	2590.00	0.00	2590.00
FC - BOND (17.01.2013)-DOCO-66.84	4.10	1069.31	0.00	1069.31
BOND - XLIII-DOCO-	7.93	4000.00	0.00	4000.00
BOND - XLIV-DOCO-	8.70	2600.00	0.00	2600.00
BOND-XLV-DOCO-	9.65	5300.00	0.00	5300.00
SBI (2014-15)-ADDCAP FOR 2015-2016 addcap-	9.55	0.00	1406.97	1406.97
SBI (2014-15)-DOCO-	9.55	2000.00	0.00	2000.00
BOND XLVI -DOCO-	9.30	4748.44	0.00	4748.44
Bond XLVII-DOCO-	8.93	4887.00	0.00	4887.00
Bond XLVIII-DOCO-	8.20	4776.00	0.00	4776.00
BOND XLIX-DOCO-	8.15	1400.00	0.00	1400.00
BOND L-DOCO-	8.40	1000.00	0.00	1000.00
BOND LI-ADDCAP FOR 2015-2016 (Accrual IDC)-	8.40	0.00	823.87	823.87
BOND LI-DOCO-	8.40	3601.16	0.00	3601.16
<b>Total</b>		<b>49564.91</b>	<b>2230.84</b>	<b>51795.75</b>

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

(₹ in lakh)

Particulars	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	49564.91	51795.75	51795.75	51795.75
Cumulative Repayments of Loans up to Previous Year	0.00	0.00	909.27	2593.54
Net Loans Opening	<b>49564.91</b>	<b>51795.75</b>	<b>50886.48</b>	<b>49202.21</b>
Add: Draw(s) during the Year	2230.84	0.00	0.00	0.00
Less: Repayments of Loan during year	0.00	909.27	1684.27	2958.19
Net Closing Loan	<b>51795.75</b>	<b>50886.48</b>	<b>49202.21</b>	<b>46244.02</b>
Average Net Loan	50680.33	51341.12	50044.35	47723.12
Rate of Interest on Loan (%)	8.7772%	8.7817%	8.7746%	8.7658%
Interest on Loan	4448.29	4508.61	4391.17	4183.31

