

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 38/TT/2017**

**Coram:**

**Shri P.K. Pujari, Chairperson**

**Dr. M. K. Iyer, Member**

**Date of Order: 22.05.2019**

**In the matter of:**

Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations' 2014 for determination of Transmission Tariff from COD to 31.3.2019 for **Asset-I:** 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S, **Asset-II:** 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV Durgapur S/S , **Asset-III:** 01 Nos. of 125 MVAR Bus Reactor (1st) at Rengali Substation, **Asset-IV:** 01 Nos. of 125 MVAR Bus Reactor (2nd) at Rengali Substation, **Asset-V:** Installation of 01x125 MVAR Bus Reactor by replacing existing 1x50 MVAR Bus Reactor at 400 KV Rourkela S/S **Asset-VI:** Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at Biharsharif S/S **Asset-VII:** Installation of 2x125 MVAR Bus Reactor in Parallel with existing 2X50 MVAR Bus Reactor at Jamshedpur S/S **Asset-VIII:** Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya Sub-station (diverted to Ranchi) **Asset-IX:** Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S and **Asset-X:** Converting 2X80 MVAR Line reactor to 2X80 MVAR switchable line reactor at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line under Eastern Region Strengthening Scheme IX in Eastern Region”.

**And in the matter of:**

Power Grid Corporation of India Limited



"Saudamini", Plot No.2,  
Sector-29, Gurgaon -122 001  
**Vs**

.....**Petitioner**

1. Bihar State Power (Holding) Company Ltd [BSP(H)CL]  
(Formerly Bihar State Electricity Board -BSEB)  
Vidyut Bhavan, Bailey Road, Patna – 800 001
2. West Bengal State Electricity Distribution Company Limited  
Bidyut Bhawan, Bidhan Nagar  
Block DJ, Sector-II, Salt Lake City  
Kolkata-700 091
3. Grid Corporation of Orissa Ltd.  
Shahid Nagar, Bhubaneswar -751 007
4. Damodar Valley Corporation  
DVC Tower, Maniktala  
Civic Centre, VIP Road, Kolkata - 700 054
5. Power Department  
Govt. of Sikkim, Gangtok-737 101
6. Jharkhand State Electricity Board  
In Front Of Main Secretariat  
Doranda, Ranchi-834002

.... **Respondent**

**For Petitioner** : Shri Rakesh Prasad, PGCIL  
Shri S.K. Niranjana, PGCIL  
Shri V.P. Rastogi, PGCIL  
Shri S.K. Venkatesh, PGCIL  
Shri S.S. Raju, PGCIL  
Shri B. Dash, PGCIL

**For Respondent** : Shri R.B. Sharma, Advocate, BSP(H)CL

### **ORDER**

The present petition has been filed by the Petitioner, Power Grid Corporation of India Ltd. ("PGCIL") seeking approval of transmission tariff for **Asset-I**: 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S, **Asset-II**: 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV

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Durgapur S/S , **Asset-III:** 01 Nos. of 125 MVA Bus Reactor (1st) at Rengali Substation, **Asset-IV:** 01 Nos. of 125 MVA Bus Reactor (2nd) at Rengali Substation, **Asset-V:** Installation of 01x125 MVAR Bus Reactor by replacing existing 1x50 MVAR Bus Reactor at 400 KV Rourkela S/S **Asset-VI:** Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at Biharsharif S/S **Asset-VII:** Installation of 2x125 MVAR Bus Reactor in Parallel with existing 2X50 MVAR Bus Reactor at Jamshedpur S/S **Asset-VIII:** Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya Sub-station (diverted to Ranchi) **Asset-IX:** Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S and **Asset-X:** Converting 2X80 MVA Line reactor to 2X80 MVA switchable line reactor at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line under Eastern Region Strengthening Scheme IX in Eastern Region” (hereinafter referred to as “transmission system”) for 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “The 2014 Tariff Regulations”).

2. The Petitioner has made the following prayers:-

- i. Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition.*
- ii. Allow tariff as 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.*
- iii. Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred.*
- iv. Tariff may be allowed on the estimated completion cost, since few elements of the project are yet to be completed, the completion cost for the assets covered under instant Petition are within the overall project cost.*
- v. Allow the Petitioner 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 as provided under clause 25 of the Tariff regulations 2014.

- vi. Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure ( if any) in relation to the filing of petition.
- vii. Allow the Petitioner if GST is imposed on transmission charges under the proposed GST, the same may be allowed to be recovered from the beneficiaries
- viii. Allow the Petitioner to approach the Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.
- ix. Allow the Petitioner to bill and recover Licensee fee and RLDC fees and Charges, separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.
- x. Allow the Petitioner 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.
- xi. Allow the Petitioner to bill and recover 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. Further, any taxes and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.  
and pass such other relief as the Commission deems fit and appropriate under the circumstances of the case and in the interest of justice.”

## **Background**

3. The Investment Approval (hereinafter referred to as "IA") for implementation of “Eastern Region Strengthening Scheme IX” in Eastern Region was accorded by the Board of Directors of the Petitioner in 299<sup>th</sup> meeting held on 26.2.2014 for ₹19658 lakh including IDC of ₹1065 lakh based on December, 2013 price level (communicated vide



Memorandum No. C/CP/ERSS-IX dated 3.3.2014). Revised Cost Estimate (RCE) of the project was accorded by Board of Directors of Petitioner in 338<sup>th</sup> meeting held on 10.3.2017 (communicated vide letter Ref.No:C/CP/PA1617-03-0AB-RCE016 dated 30.3.2017) with an estimated cost of ₹22528 lakh including IDC of ₹925 lakh.

4. The system requirements were discussed in the 24<sup>th</sup> TCC & ERPC meeting held on 26<sup>th</sup> & 27<sup>th</sup> April, 2013 and Standing Committee meeting of ER held on 27.8.2013.

5. The broad scope of work covered under the project “Eastern Region Strengthening Scheme-IX (ERSS-IX)” is as follows:

**(i) Addition / Replacement of Bus Reactors at 400 kV Substations.**

- *Installation of 1X125 MVAR Bus Reactor at Gazuwaka 400 kV (East) bus.*
- *Installation of 2X125 MVAR Bus Reactor at Rengali.*
- *Installation of 1X125 MVAR Bus Reactor at Maithon.*
- *Installation of 1X125 MVAR Bus Reactor in parallel with existing 50 MVAR (3X16.67) Bus Reactor at Biharsharif, using existing Reactor bay.*
- *Installation of 1X125 MVAR Bus Reactor in parallel with existing 1X50 MVAR (3x 16.67 MVAR 1 ph unit) Bus Reactor at Jamshedpur and replacement of existing 1x50MVAR Bus reactor with 1x125MVAR Bus reactor.*
- *Replacement of existing 1X50 MVAR Bus Reactor with 1X125 MVAR Bus Reactor at Rourkela.*
- *Installation of 2X125 MVAR Bus Reactor at Durgapur (Parulia). Out of 2X125 MVAR Bus Reactor, 1X125 MVAR Bus Reactor would be in parallel with existing 1X50 MVAR Bus Reactor, using existing Reactor bay*

**(ii) Augmentation of Transformation Capacity at Maithon, Muzaffarpur and Ara Substations of POWERGRID.**

- *Addition of 1X500 MVA, 400/220 kV ICT alongwith associated bays at Muzaffarpur 400/220 kV Substation*
- *Addition of 1X160 MVA, 220/132 kV ICT alongwith associated bays at Ara 220/132 kV Substation.*
- *Replacement of 2X315 MVA, 400/220 kV ICTs with 2X500 MVA, 400/220 kV ICTs at Maithon*
- *2X315, 400/220 kV ICTs, thus released from Maithon, would be utilized as Regional Spare.*



**(iii) Spare 500 MVA Single Phase Unit of 765/400 kV ICT for Eastern Region**

- Procurement of one 500 MVA, Single Phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya sub-station

**(iv) Converting 2X80 MVAR Line Reactors at Gorakhpur.**

- Converting 2X80 MVAR Line Reactors at Gorakhpur end of Barh-II – Gorakhpur 400 kV Quad D/c line to 2X80 MVAR (Switchable) Line Reactors.

6. The instant Petition covers the following assets:

Sl. No	Name of Asset	Anticipated COD (at the time of filing of the instant Petition)
1	<b>Asset-I:</b> 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S	23.10.2016 (Actual)
2	<b>Asset-II:</b> 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV Durgapur S/S *	30.11.2016
3	<b>Asset-III:</b> 01 Nos. of 125 MVAR Bus Reactor (1st) at Rengali Substation	31.1.2017
4	<b>Asset-IV:</b> 01 Nos. of 125 MVAR Bus Reactor (2nd) at Rengali Substation	31.3.2017
5	<b>Asset-V:</b> Installation of 01x125 MVAR Bus Reactor by replacing existing 1x50 MVAR Bus Reactor at 400 KV Rourkela S/S *	31.3.2017
6	<b>Asset-VI:</b> Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at Biharshariff S/S*	15.12.2016
7	<b>Asset-VII:</b> Installation of 2x125 MVAR Bus Reactor in Parallel with existing 2X50 MVAR Bus Reactor at Jamshedpur S/S*	15.1.2017
8	<b>Asset-VIII:</b> Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya Sub-station (diverted to Ranchi)	15.1.2017
9	<b>Asset-IX:</b> Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S	31.3.2017
10	<b>Asset-X:</b> Converting 2X80 MVAR Line reactor to 2X80 MVAR switchable line reactor at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line	1.2.2017

**\*Note:** In case of space constraint for parallel operation of reactors at Biharsharif, Jamshedpur, Rourkela and Durgapur 400kV buses, the existing 50 MVAR reactor would be replaced by 125 MVAR reactor and the 50 MVAR reactors would be utilised as Regional spare as agreed in 24<sup>th</sup> ERPC & corresponding SCM of Eastern region. Hence, it is prayed to the Commission to treat the existing items being replaced (as mentioned above) as regional spares.



7. Vide order dated 5.7.2017, Annual transmission Charges were allowed under the proviso (i) to Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges in respect of the following assets covered in the instant Petition:

(₹ in lakh)

Asset	2016-17 (pro-rata)	2017-18	2018-19
Asset I	44.89	113.99	121.21
Asset II	46.81	204.84	216.41
Asset III	-	187.83	231.65
Asset IV	-	182.99	232.34
Asset VI	-	105.81	146.33
Asset VII	-	155.39	215.62
Asset IX	-	284.08	401.17
Asset X	18.12	134.33	140.08

8. The Petitioner has claimed the following transmission charges for the instant assets:-

(₹ in lakh)

Asset-I			
Particulars	2016-17	2017-18	2018-19
Depreciation	16.80	44.52	48.73
Interest on Loan	17.65	44.41	45.15
Return on Equity	18.72	49.60	54.30
Interest on working capital	1.16	3.02	3.23
O & M Expenses	0.00	0.00	0.00
<b>Total</b>	<b>54.33</b>	<b>141.55</b>	<b>151.41</b>

Asset-II			
Particulars	2016-17	2017-18	2018-19
Depreciation	9.48	57.48	63.01
Interest on Loan	10.12	58.84	59.89
Return on Equity	10.57	64.04	70.21
Interest on working capital	1.52	7.41	7.80
O & M Expenses	16.44	66.51	68.71
<b>Total</b>	<b>48.13</b>	<b>254.28</b>	<b>269.62</b>

Asset- III & IV		
Particulars	2017-18	2018-19
Depreciation	76.92	139.44
Interest on Loan	83.94	143.65
Return on Equity	85.71	155.36
Interest on working capital	9.98	16.75
O & M Expenses	87.96	137.42
<b>Total</b>	<b>344.51</b>	<b>592.62</b>



<b>Asset-V</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	7.35	40.52
Interest on Loan	7.05	37.15
Return on Equity	8.19	45.15
Interest on working capital	0.49	2.68
O & M Expenses	-	-
<b>Total</b>	<b>23.08</b>	<b>125.50</b>

<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	22.77	53.92
Interest on Loan	21.81	48.94
Return on Equity	25.37	60.08
Interest on working capital	1.52	3.55
O & M Expenses	0.00	0.00
<b>Total</b>	<b>71.47</b>	<b>166.49</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	9.91	35.00
Interest on Loan	9.41	31.70
Return on Equity	11.04	39.00
Interest on working capital	0.66	2.30
O & M Expenses	0.00	0.00
<b>Total</b>	<b>31.02</b>	<b>108.00</b>

\*Petitioner is directed to file a separate petition for asset VII (a) as stated in paragraph 20 of this order.

<b>Asset-VIII</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	15.33	78.40	82.56
Interest on Loan	15.89	77.66	75.66
Return on Equity	17.08	87.35	91.98
Interest on working capital	1.05	5.31	5.45
O & M Expenses	-	-	-
<b>Total</b>	<b>49.35</b>	<b>248.72</b>	<b>255.65</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	53.75	123.37
Interest on Loan	59.17	128.07
Return on Equity	66.08	150.27
Interest on working capital	5.68	12.35
O & M Expenses	33.99	68.71
<b>Total</b>	<b>218.67</b>	<b>482.77</b>





<b>Asset-X</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	0.55	6.60	10.06
Interest on Loan	0.58	6.69	9.69
Return on Equity	0.61	7.36	11.21
Interest on working capital	1.00	7.41	7.86
O & M Expenses	18.39	133.02	137.42
<b>Total</b>	<b>21.13</b>	<b>161.08</b>	<b>176.24</b>

9. The details of the Interest on Working Capital claimed by the Petitioner are as under:-

(₹ in lakh)

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	0.00	0.00	0.00
Maintenance Spares	0.00	0.00	0.00
Receivables	20.54	23.59	25.24
<b>Total</b>	<b>20.54</b>	<b>23.59</b>	<b>25.24</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest</b>	<b>1.18</b>	<b>3.04</b>	<b>3.23</b>

<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	5.36	5.54	5.73
Maintenance Spares	9.66	9.98	10.31
Receivables	31.41	42.38	44.94
<b>Total</b>	<b>46.43</b>	<b>57.90</b>	<b>60.98</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest</b>	<b>1.52</b>	<b>7.41</b>	<b>7.80</b>

<b>Asset- III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	11.08	11.45
Maintenance Spares	19.95	20.61
Receivables	86.83	98.77
<b>Total</b>	<b>117.86</b>	<b>130.83</b>
Rate of Interest	12.80%	12.80%
<b>Interest</b>	<b>9.98</b>	<b>16.75</b>

<b>Asset-V</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	-	-
Maintenance Spares	-	-
Receivables	16.45	20.91
<b>Total</b>	<b>16.45</b>	<b>20.91</b>
Rate of Interest	12.80%	12.80%
<b>Interest</b>	<b>0.49</b>	<b>2.68</b>



<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	-	-
Maintenance Spares	-	-
Receivables	25.47	27.74
<b>Total</b>	<b>25.47</b>	<b>27.74</b>
Rate of Interest	12.80%	12.80%
<b>Interest</b>	<b>1.52</b>	<b>3.55</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	-	-
Maintenance Spares	-	-
Receivables	15.76	18.00
<b>Total</b>	<b>15.76</b>	<b>18.00</b>
Rate of Interest	12.80%	12.80%
<b>Interest</b>	<b>0.66</b>	<b>2.30</b>

\*Petitioner is directed to file a separate petition for asset VII (a) as stated in paragraph 20 of this order.

<b>Asset-VIII</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	-	-	-
Maintenance Spares	-	-	-
Receivables	38.73	41.45	42.61
<b>Total</b>	<b>38.73</b>	<b>41.45</b>	<b>42.61</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest</b>	<b>1.05</b>	<b>5.31</b>	<b>5.45</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	5.54	5.73
Maintenance Spares	9.98	10.31
Receivables	71.30	80.46
<b>Total</b>	<b>86.82</b>	<b>96.50</b>
Rate of Interest	12.80%	12.80%
<b>Interest</b>	<b>5.68</b>	<b>12.35</b>

<b>Asset-X</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	10.73	11.09	11.45
Maintenance Spares	19.31	19.95	20.61
Receivables	24.65	26.85	29.37
<b>Total</b>	<b>54.69</b>	<b>57.89</b>	<b>61.44</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest</b>	<b>1.20</b>	<b>7.41</b>	<b>7.86</b>



10. The Petitioner has served copy of the petition upon the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. 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. The Respondent No. 1, BSP(H)CL has filed reply vide affidavits dated 16.6.2017 and 17.9.2018.

11. Having heard the representatives of the petitioner present at the hearing and perused the material on record, we proceed to dispose of the petition.

12. This order has been issued after considering the main petition and Petitioner's affidavit dated 29.11.2016, 11.1.2017, 18.1.2017, 6.3.2017, 26.4.2017, 3.5.2017, 16.6.2017, 30.8.2017, 10.1.2018, 12.1.2018, 22.1.2018, 16.2.2018, 13.9.2018 & 12.10.2018 and reply of Respondent, BSP(H)CL dated 16.6.2017 and 17.9.2018.

### **Analysis and Decision**

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

13. The Petitioner vide affidavit dated 13.9.2018 made prayer to combine the Asset-III and Asset-IV as Asset-III & IV and bifurcate the Asset VII as Asset-VII (A) and Asset-(b). The Petitioner further claimed the COD in respect of the Assets covered in the instant petition as per the following details:

<b>Name of the Asset (as filed in the petition)</b>	<b>Name of Asset</b>	<b>COD claimed (Actual/ Anticipated)</b>
<b>Asset-I:</b> 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S	<b>Asset-I:</b> 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S	23.10.2016 (Actual)
<b>Asset-II:</b> 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV Durgapur S/S	<b>Asset-II:</b> 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV Durgapur S/S	30.12.2016 (Actual)
<b>Asset-III:</b> 01 No. of 125 MVAR Bus Reactor (1 <sup>st</sup> ) at Rengali Substation	<b>Asset-III &amp; IV:</b> 02 No's of 125 MVAR Bus Reactor I & II at Rengali S/S	03.08.2017



<b>Asset-IV:</b> 01 Nos. of 125 MVA Bus Reactor (2nd) at Rengali Substation		(Actual)
<b>Asset-V:</b> Installation of 01x125 MVAR Bus Reactor by replacing existing 1x50 MVAR Bus Reactor at 400 KV <i>Rourkela S/S</i>	<b>Asset-V:</b> Installation of 01x125 MVAR Bus Reactor by replacing existing 1x50 MVAR Bus Reactor at 400 KV <i>Rourkela S/S</i>	07.01.2018 (Actual)
<b>Asset-VI:</b> Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at <i>Biharsharif S/S</i>	<b>Asset-VI:</b> Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at <i>Biharsharif S/S</i>	13.10.2017 (Actual)
<b>Asset-VII:</b> Installation of 2x125 MVAR Bus Reactor in Parallel with existing 2X50 MVAR Bus Reactor at <i>Jamshedpur S/S</i>	<b>Asset VII(A):</b> Installation of 1x125 MVAR Bus Reactor-II after replacing existing 1X50 MVAR Bus Reactor at <i>Jamshedpur S/S</i>	17.11.2017 (Actual)
	<b>Asset VII(b):</b> Installation of 1x125 MVAR Bus Reactor-I in Parallel with existing 1X50 MVAR Bus Reactor at <i>Jamshedpur S/S</i>	03.12.2017 (Actual)
<b>Asset-VIII:</b> Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya Sub-station (diverted to Ranchi)	<b>Asset-VIII:</b> Procurement of one 500 MVA, Single phase unit of 765/400 kV ICT for Eastern Region to be stationed at Gaya Sub-station (diverted to Ranchi)	31.03.2018 (Anticipated)
<b>Asset-IX:</b> Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S	<b>Asset-IX:</b> Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S	27.09.2017 (Actual)
<b>Asset-X:</b> Converting 2X80 MVA Line reactor to 2X80 MVA switchable line reactor at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line	<b>Asset-X:</b> Converting 2X80 MVA Line reactor to 2X80 MVA switchable line reactor at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line	09.02.017 (Actual)

14. The Commission vide provisional order dated 5.7.2017 has directed the Petitioner to submit the following:

- (a) *How reactor will be installed for parallel operation at Jamshedpur Technically?*
- (b) *RPM/SCM approval for diversion of 500 MVA ICT at Gaya Sub-station to Ranchi Sub-station.*
- (c) *In case of replacement of bus reactors (50 MVAR) details regarding life of existing reactor, decap value for existing reactor and total requirement of regional spares vis-a-vis current status of availability of regional spare.*
- (d) *How line reactor will be converted to switchable line reactor at Gorakhpur?*



15. In response, the Petitioner vide affidavit dated 30.8.2017 has submitted the following:

(a) With regard to query (i), the Petitioner has submitted that due to space constraint at Substation switchyard, Reactor is installed in parallel with the existing Reactor for effective control of the system over voltage. The 125MVA Bus reactor shall be connected electrically in parallel to existing 50 MVA Bus Reactor to effectively act as 175 MVA Bus Reactor. For doing so, the 3-phase HV connections of the reactors are in parallel and an isolator is provided before the new reactor to meet maintenance isolation requirements. So normally they remain in parallel acting as 175 MVA cumulative Bus reactor controlling the system overvoltage more effectively. However, the new reactor can be isolated offline by isolator for maintenance purpose.

(b) As regards RPM/SCM approval for diversion of 500 MVA ICT, the Petitioner has submitted that the transformer unit is a regional spare and the same is to cater to contingencies in any of the 765/400 kV S/s in Eastern Region. Hence it is prudent to keep the spare unit at a strategic location so that the transportation duration of shifting the spare unit from its stored location to the affected location is minimized. There are 5 numbers of 765/400 kV substation in Eastern Region (Gaya, Sasaram, New Ranchi, Angul & Jharsugudha S/s). 765/400 kV Gaya S/s was commissioned during Feb'12 and all other 765 kV S/s were commissioned progressively thereafter i.e. 765 kV system at Sasaram commissioned in 2013, new Ranchi in 2014, Jharsuguda in 2014 and Angul in 2015. From the Map of eastern region, it can be seen that 765 kV New Ranchi S/s is more or less centrally placed among the five 765 kV S/s in Eastern region. Hence New Ranchi



S/s has been considered as strategic location in place of Gaya S/s to take care of any contingency in case of failure in any of four Substations. Since the spare unit has been kept in Eastern Region only and there is no change of beneficiaries of this spare transformer unit, hence, there is no separate requirement of RPC/SCM approval for shifting of spare unit within the region.

(c) As regards details regarding life of existing reactor, de-cap value and total requirement of regional spares, the Petitioner vide affidavit dated 30.08.2017 has submitted that as per the 24<sup>th</sup> ERPC meeting dated 26-27th April 2013 the following has been agreed:-

“In case of space constraint for parallel operation of reactors at Bihar Sharif, Jamshedpur, Rourkela and Durgapur 400kV buses, the existing 50 MVAR reactor would be replaced by 125 MVAR reactor and the 50 MVAR reactors would be utilized as Regional spare.” Hence, the de-cap is not required/Applicable in the instant case. A comprehensive list of regional spares including Bus reactors, line reactors and ICTs is tabulated below:

(d) The Petitioner also submitted the following status of spare ICT in Eastern Region:

Description	Total No. of Population	Total No. of Spare procured & capitalized	Spare utilized	RPC approved Spare availability	Project Name	Location of spare ICT	COD	Petition no in which the ICT filed
400/220 kV ICT	73	4	2*	4	Spare ICT & Reactor Projects	Bihar-Sharif S/S	1.7.2012	37/TT/2017
						Jamshedpur S/s	1.7.2012	
						Durgapur S/s	1.3.2013	
						Rourkela S/s	1.4.2013	



Description	Total No. of Population	Total No. of Spare procured & capitalized	Spare utilized	RPC approved Spare availability	Project Name	Location of spare ICT	COD	Petition no in which the ICT filed
765/400 kV ICT	42	2	0	2	ERSS IX	New Ranchi S/S	Not commissioned yet	Not filed yet
					ERSS XII	Angul S/s	Not commissioned yet	
220/132 kV ICT	20	2	0	2	Spare ICT & Reactor Projects	Siliguri S/s	1.6.2013	37/TT/2017
						Purnea S/s	1.9.2013	
132/33 kV ICT	4	1	0	1		Gangtok S/s	20.4.2015	215/TT/2015

\* These two numbers of spare ICT utilized for replacing failed (irreparable) ICT at Biharshariff & Durgapur Substation, new ICTs are procured in place of failed units from insurance cover and the same are kept as Regional spare.

(e) The Petitioner also submitted the following status of spare Reactor in Eastern Region:

Description	Total No. of Population	Total No. of Spare procured & capitalized	Spare utilized	RPC approved Spare availability	Project Name	Location of spare ICT	COD	Petition no in which the ICT filed
765 kV Reactor	51	1	0	1	ERSS XII	Sasaram S/s	Not commissioned yet	Not filed yet
400 kV Reactor	131	1	0	1	Spare ICT & Reactors in Eastern Region	Rourkela S/s	1.10.2012	37/TT/2017

(f) As regards conversion of line reactor to switchable reactor at Gorakhpur, the Petitioner has submitted that Line reactors are converted into switchable line reactor by providing additional Circuit Breaker before the line reactor. Thus, this CB acts like switch for switching ON/OFF the live line reactor as per system requirement (depending upon the system voltage condition) by the system operator.



16. The Commission vide RoP for hearing dated 18.1.2018 directed the Petitioner to submit the following additional information:

- (a) Clarification regarding which of the instant assets is being installed/commissioned after de-capitalization of the old assets at the same location for system strengthening purpose.
- (b) Policy for considering various equipment as regional spares.

17. Pursuant to the RoP dated 18.1.2018, the Petitioner vide affidavit dated 16.2.2018 has submitted that 125 MVAR Bus Reactor at Rourkela and Jamshedpur (Bus Reactor II) has been installed after the replacement of existing Bus Reactor and submitted form 10B for both the Assets. With regard to Policy for considering various equipment as regional spares the Petitioner submitted the following:

- (a) The installed equipment is rated for maximum voltage of 420kV. Higher voltage in the system reduces the life of the installed equipment. Further due to over voltage in the Regional Grids, RLDC keeps some transmission lines in off condition, thus sacrificing the contingency in case of requirement. Augmentation in the reactive compensations has been carried out to contain the system voltage within permissible limit as per the directives of RLDC/ RPCs. In case there was scope for additional space, the additional reactors (125MVAR) are made parallel with the existing 50MVAR reactors. In case there is space constraint, there is no other alternative but to replace the 50MVAR reactors with 125MVAR reactors. Normally the life of transformer/ Reactors is 25-35 years. In case the replaced reactor is of age less than 15 years, generally, it is utilized in ongoing projects of Petitioner for the same capacity requirement. Further, as the life of new assets is





35 years, matter is to be taken up with the Commission for replacement of the old reactor as additional capitalisation whenever any contingency arises.

(b) In case the replaced reactors are of age more than 15 years, the same are proposed to be kept as Regional spares, as already the life of the replaced equipment has lapsed more than 50% and is not suitable for new projects, being the life of new assets being 35 years. Moreover, the recovery of the cost of such asset remains un-recovered for the balance period and it is appropriate to keep it as regional spare for meeting any contingency.

(c) Normally in case of failure of reactor involving winding, the reactors are required to be shifted to factory for repair and the repairing/ re-installation time normally takes 1-2 years. Within this period, these old reactors can be utilized to maintain the system voltage of the stations of that particular Region for time being, thus improving the system reliability.

18. With regard to de-capitalization of asset, the respondent BSP(H)CL vide affidavit dated 16.6.2017 has submitted the following:

a) The technical excuses and the discussions in the ERPC meeting and the IA by the Petitioner himself cannot force the Commission to allow the tariff of an asset which is not in use but kept as regional spare. It is further submitted that the ICTs and reactors are static machines and instances of their failure is very remote in comparison to the dynamic machine. There is no practice to provide spare ICTs and reactors and this practice seems to have been adopted with the intent and purpose of benefitting the Petitioner solely to improve the NATAF for the purposes of incentive beyond the NATAF of 98%. Thus, it is clear that the Petitioner in his own interest has kept the ICTs & Reactors as regional spare which in no way

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benefit the beneficiaries as the beneficiaries are already assured of the 98% of NATAF failing which the annual fixed cost and consequently the transmission charge is liable to be reduced on pro-rata basis. The discussions at the RPC meeting could not be allowed to override the statutory provision. Thus, the discussions at the ERPC meeting and the "IA" by the Petitioner could at best be taken note of but cannot force the Commission to allow tariff determination in contravention to the 2014 Tariff Regulations which is quoted below for ready reference;

"(6) The following shall be excluded or removed from the capital cost of the existing and new project:  
(a) The assets forming part of the project, but not in use;  
(b) Decapitalisation of Asset;  
(c) In case of hydro generating station..... "

b) As may be perused from the above regulation, any asset which is not in use is required to be excluded or removed from the capital cost of the existing and new projects. Accordingly, it is submitted that the 2x315, 400/220 kV ICTs released from Maithon and 50 MVAR Reactor be de-capitalized at their book value and deducted from their respective replaced capital costs for the purposes of tariff determination. Similarly, the spare 500 MVA Single phase unit of 765/400 kV ICT may also not be capitalized.

19. The Petitioner vide affidavit dated 12.1.2018 has submitted rejoinder to the reply of BSP(H)CL and submitted that the entire scope of the project has been approved in 24<sup>th</sup> ERPC dated 26<sup>th</sup> & 27<sup>th</sup> April, 2013 and SCM dated 27.8.2013. Accordingly the Petitioner has implemented the complete scope of ERSS IX project.

20. We have considered the submissions of the Petitioner and proceed to decide the COD of assets covered in the instant Petition as under:



a) In support of commercial operation of the assets, the Petitioner has submitted RLDC charging certificate dated 23.1.2017 for Asset-I and Asset-II and dated 16.8.2017 for Asset-III & IV. The Petitioner has submitted CEA Energisation Certificate dated 21.10.2016, 15.12.2016, 6.10.2017 for Asset-I, II, III & IV. In addition, the Petitioner has submitted CMD certificate as required under Grid Code for Asset-I, II, III & IV. Accordingly, the COD of the Asset-I, Asset-II, Asset-III & IV is approved as 23.10.2016, 30.12.2016 and 3.8.2017 respectively.

b) The Commission vide order dated 5.7.2017 had held as under:

*“6. ----- Further, Asset V is to replace the existing 1x50 MVAR Bus Reactor at 400 kV Rourkela Sub-station with 1x125 MVAR Bus Reactor. We are of the view that the Petitioner should claim tariff for the replaced Bus Reactor separately with reference to the tariff of the assets sought to be replaced. Accordingly, tariff is not allowed for Asset V in this petition.”*

In line with above decision, COD of the Asset-V is not approved in the instant petition.

c) With regard to COD of Asset-VI as on 13.10.2017, the Petitioner has submitted the RLDC Charging Certificate dated 2.1.2018, CEA Energisation Certificate dated 25.9.2017 and CMD certificate as required under Grid Code. Accordingly the COD of the Asset-VI is approved as 13.10.2017.

d) With regard to Asset-VII(a), which is being replaced by the Petitioner with existing 1X50 MVAR bus reactor at 400 kV Jamshedpur Sub-station, It has been noted that the Petitioner has not submitted the details of de-capitalisation of 50 MVAR reactor at Jamshedpur. Thus, allowing tariff for 125 MVAR Bus reactor at Jamshedpur without de-capitalisation of the existing 50 MVAR Bus reactor at Jamshedpur would tantamount to servicing two assets for the same purpose.



Therefore, tariff for Asset-VII (a) shall be allowed only after decapitalisation of old asset i.e. 50 MVAR Bus reactor at Jamshedpur and associated cost of bays and adjustment of cumulative depreciation etc. The Petitioner is directed to file a separate Petition claiming tariff for 125 MVAR Bus Reactor at Jamshedpur along with the details of de-capitalization within three months of issue of this order.

- e) With regard to COD of Asset-VII (b) as on 3.12.2017, the Petitioner has submitted the RLDC Charging Certificate dated 21.12.2017, CEA Energisation Certificate dated 15.11.2017 and CMD certificate as required under Grid Code. Accordingly, the COD of the Asset-VII (b) is approved as 3.12.2017.
- f) With regard to Asset-VIII, the Petitioner has claimed anticipated COD as 30.9.2018. The Asset-VIII is not commissioned yet. Accordingly, the Petitioner is directed to file separate Petition after actual commissioning of the said Asset and Tariff is not allowed in the instant Petition.
- g) With regard to Asset-IX, the Petitioner has submitted RLDC Charging Certificate dated 20.9.2017 and 30.3.2017 and CEA Energisation Certificate dated 12.6.2017 and 23.1.2017. Accordingly, the COD of the Asset-IX is approved as 27.9.2017.
- h) Asset-X is conversion of 2X80 MVA Line Reactor to 2X80 MVA switchable line reactors at Gorakhpur end for 400 kV Barh-II-Gorakhpur transmission line for which the Petitioner has submitted RLDC Charging Certificate dated 30.3.2017 and CEA Energisation Certificate dated 23.1.2017. A similar issue has been considered by the Commission in its provisional order dated 31.12.2018 in Petition No. 259/TT/2018 where in the Commission has not granted tariff for conversion of fixed line Reactor to switchable line reactor. The relevant portion of the said order is extracted as under:



“7.----- Asset-III is conversion of 50 MVAR Fixed Line Reactor at Subhasagram end of Sagardighi-Subhasgram 400 kV S/C line to Switchable Line Reactor. The tariff for the existing 50 MVAR Fixed Line Reactor has already been granted and the petitioner should claim the cost of the conversion of the said line reactor in the respective tariff petition”.

In line with above decision, the Tariff for Asset-X is not allowed and the Petitioner should claim the cost of the conversion of the said line reactor in the respective tariff Petition.

21. The details of Assets for which COD is approved for the purpose of granting tariff is summarized as under:

<b>Name of Asset</b>	<b>COD</b>
<b>Asset-I:</b> 01 No. of 01x125 MVAR Bus Reactor (1 <sup>st</sup> ) and associated bay equipment at 400 KV Durgapur S/S	23.10.2016 (Actual)
<b>Asset-II:</b> 01 No. of 1x125 MVAR Bus Reactor (2 <sup>nd</sup> ) and associated bay equipment at 400 KV Durgapur S/S	30.12.2016 (Actual)
<b>Asset-III &amp; IV:</b> 02 No's of 125 MVAR Bus Reactor I & II at Rengali S/S	3.8.2017 (Actual)
<b>Asset-VI:</b> Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at Biharsharif S/S	13.10.2017 (Actual)
<b>Asset VII(b):</b> Installation of 1x125 MVAR Bus Reactor-I in Parallel with existing 1X50 MVAR Bus Reactor at Jamshedpur S/S	3.12.2017 (Actual)
<b>Asset-IX:</b> Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S	27.9.2017 (Actual)

### **Capital Cost**

22. The details of capital cost claimed by the petitioner in terms of the Auditor's certificate dated 31.1.2017, 11.1.2017, 9.11.2017, 8.12.2017 and 7.2.2018 as on COD with the estimated additional capital expenditure to be incurred for the instant asset is summarized below



(₹ in lakh)

Asset	Apportioned Approved Cost (FR)	Apportioned Approved cost (RCE)	Expen- -diture up to COD	Estimated Expenditure				Estimated completion cost	Estimated completion cost up to 31.3.2019
				2016-17	2017-18	2018-19	2019-20		
Asset-I	936.85	1030.65	689.75	83.20	150.00	--	--	922.95	922.95
Asset-II	964.30	1331.38	432.53	560.85	200.00	--	--	1193.38	1193.38
Asset-III & IV	1191.79	1512.62	1870.09	--	671.82	200.00	--	2741.91	2741.91
Asset-VI	979.23	1218.73	914.12	--	39.63	136.22	136.22	1226.19	1089.97
Asset-VII (b)			557.54	--	34.18	136.74	136.73	865.19	728.46
Asset-IX	1336.64	3003.14	2000.00	--	440.97	248.48	--	2689.45	2689.45

### Cost Over-run

23. The Petitioner has submitted that the estimated completion cost is within the RCE apportioned cost and submitted the details of capital cost as under:

(₹ in lakh)

Name of Asset	FR Apportio ned cost	RCE Apportio ned cost	Estimated Completion cost
<b>Asset-I:</b> 01 No. of 01x125 MVAR Bus Reactor (1st) and associated bay equipment at 400 KV Durgapur S/S	936.85	1030.65	922.95
<b>Asset-II:</b> 01 No. of 1x125 MVAR Bus Reactor (2nd) and associated bay equipment at 400 KV Durgapur S/S	964.30	1331.38	1193.38
<b>Asset-III &amp; IV:</b> 02 Nos. of 125 MVAR Bus Reactor (1 <sup>st</sup> & 2 <sup>nd</sup> ) at Rengali Substation	2383.58	3034.39	2741.91
<b>Asset-VI:</b> Installation of 01x125 MVAR Bus Reactor in Parallel with existing 50(3X16.67) MVAR Bus Reactor at Biharshariff S/S	979.23	1218.73	1226.19
<b>Asset-VII(a):</b> Installation of 1x125 MVAR Bus Reactor-II in Parallel with existing 1X50 MVAR Bus Reactor at Jamshedpur S/S**	1698.30	1792.13	1736.49



Name of Asset	FR Apportio ned cost	RCE Apportio ned cost	Estimated Completion cost
<b>Asset-VII(b):</b> Installation of 1x125 MVAR Bus Reactor-I in Parallel with existing 1X50 MVAR Bus Reactor at Jamshedpur S/S			
<b>Asset-IX:</b> Installation of 1X125 MVAR Bus Reactor at 400 kV Gazuwaka S/S	1136.64	3003.14	2689.45

**\*\*Tariff is not being considered**

24. We have examined the submissions of Petitioner and respondents and noted that against the revised apportioned approved cost (RCE) of ₹11410.42 lakh in respect of the instant assets as mentioned in Table above, the total estimated completion cost as on 31.3.2019 including additional capitalization is ₹10510.37 lakh. The total individual cost of each asset as on 31.3.2019 is also within the RCE cost of their respective apportioned approved cost. Therefore, both overall and individual asset-wise cost being within RCE, there is no cost overrun.

**Time over run:**

25. As per the "IA", the Assets covered in the petition were scheduled to be commissioned within 24 months from the date of "IA". The date of "IA" is 26.2.2014, hence the assets were to be commissioned up to 25.2.2016.

26. As per the "IA", the scheduled completion date of the assets covered in the instant petition was 25.2.2016 against which these assets were commissioned and delay in commissioning is as under:

Asset	SCOD	COD considered (Actual)	Delay (days)
Asset-I	25.2.2016	23.10.2016	241
Asset-II		30.12.2016	309
Asset-III & IV		3.8.2017	525
Asset-VI		13.10.2017	596
Asset-VII (b)		3.12.2017	647
Asset-IX		27.9.2017	580



27. The Petitioner has submitted that the assets covered in the instant petition was delayed because M/s BHEL has not mobilized the site as per LOA, delay due to supply of reactor by M/s BHEL, delay of supply of reactor at Gaya by M/s Alstom and delay of shutdown request by APTRANSCO.

28. Clause 12 1(c) of the Tariff Regulations,2014 is as follows:

**“12. Controllable and Uncontrollable factors:**

*“(1) The “controllable factors” shall include but shall not be limited to the following:*

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*c) Delay in execution of the project on account of contractor, supplier or agency of the generating company or transmission licensee.”*

29. The Commission vide provisional Order dated 5.7.2017 directed the Petitioner to submit the Asset wise delay with valid documentary evidence. However, no valid documentary evidence for the instant Assets has been furnished by the Petitioner. The reasons cited by the Petitioner are due to agency / contractor of the Petitioner and is therefore within the control of the Petitioner. Hence the time delay for Asset-I, Asset-II, Asset-III & IV, Asset-VI, and Asset-VII (b) is not condoned.

30. With regard to Asset-IX, the Petitioner has submitted that due to availability of minimum space necessitating shifting of an existing 132 kV APTRANSCO line. The cost for shifting of the 132 kV power line has been deposited with M/s. APTRANSCO on 29.10.2015. Due to operational exigencies, M/s. APTRANSCO could shift the line by 28.4.2017. Hence, there is resultant delay of 18 months in the commissioning of instant Asset. Upon completion of shifting of the line, the Bus reactor was installed and planned





for commissioning by 31.8.2017. The delay is due to shifting of 132 kV line under the control of APTRANSCO which is beyond the control of the Petitioner. Hence the time delay of 580 days is condoned.

**Interest during Construction (IDC)**

31. The Petitioner has claimed Interest during Construction (IDC) for the instant assets and has submitted the Auditor’s certificate in support of the same. The Petitioner has submitted computation of IDC along with the year-wise details of IDC discharged which is summarized as under:

Asset	IDC claimed as per Auditor certificate	Details of IDC discharged			
		up to COD	2016-17	2017-18	2018-19
Asset-I	14.68	5.00	0.09	9.59	0.00
Asset-II	16.75	7.00	0.15	9.61	-
Asset-III & IV	56.55	52.77	-	1.72	2.04
Asset-VI	22.53	-	-	21.40	1.13
Asset-VII(b)	10.62	-	-	4.00	6.61
Asset-IX	65.72	-	-	-	-

32. The IDC on cash basis up to the COD has been worked out on the basis of the loan details given in the Statement showing discharge of IDC and Form-9C for the asset. Petitioner has submitted that it has not made any default in the payment of interest. The IDC claimed and considered as on COD and summary of discharge of IDC liability up to COD and thereafter for the purpose of tariff determination subject to revision at the time of truing up is as below:



(₹ in lakh)

Asset	IDC claimed as per Auditor certificate	IDC allowed on cash basis as on COD	IDC Disallowed due to time overrun not condoned	IDC Discharged up to COD	IDC discharged in 2016-17	IDC discharged in 2017-18	IDC discharged in 2018-18
Asset-I	14.68	1.93	12.75	1.93	-	-	-
Asset-II	16.75	2.59	14.16	2.59	-	-	-
Asset-III & IV	56.55	0.66	55.89	0.66	-	-	-
Asset-VI	22.53	-	22.53	-	-	-	-
Asset-VII(b)	10.62	-	10.62	-	-	-	-
Asset-IX	65.72	65.72	-	41.96	-	1.97	21.79

### **Incidental Expenditure During Construction (IEDC)**

33. The Petitioner has claimed IEDC of the instant assets as per Audited Cost Certificate. The Petitioner has submitted that the entire IEDC claimed has been discharged as on COD. The claimed IEDC as on COD is within the percentage on hard cost as indicated in the abstract cost estimate. Accordingly the claimed IEDC is being considered for determination of tariff in respect of instant assets as per following details and the same shall be subject to revision at the time of truing up:-

(₹ in lakh)

Asset	IEDC as per Auditor certificate	IEDC allowed for tariff calculation
Asset-I	7.65	7.65
Asset-II	5.56	5.56
Asset-III & IV	38.69	38.69
Asset-VI	103.35	103.35
Asset-VII(b)	44.48	44.48
Asset-IX	138.90	138.90



## Initial spares

34. This has been dealt in line with Regulation 13 of the 2014 Tariff Regulations. The Petitioner has claimed initial spares pertaining to instant assets. Further, Petitioner has submitted the details of year-wise discharge of initial spare in the Petition. We have considered the submissions of the Petitioner. The initial spares claimed by the Petitioner for the instant assets are within ceiling limit of 6% (substation-brown field) as per Regulation 13 of the CERC Regulations 2014. Out of the total initial spares claimed by the Petitioner for the instant assets, the expenditure actually made as on COD and in respective year only has been allowed. Accordingly, allowable Initial Spares for the instant assets is shown below:-

(₹ in lakh)

Asset	Substation (Brown Field)				Expenditure on Initial Spares up to COD	Expenditure on Initial Spares in 2016-17	Expenditure on Initial Spares in 2017-18	Expenditure on Initial Spares in 2018-19	Remaining Expenditure on initial spares disallowed
	Plant & Machinery Cost (Excluding IDC/IEDC, Land cost & Cost of Civil Works) for the purpose of Initial Spares	Initial Spares Claimed	Initial Spares as % of Capital Cost	Initial Spares allowed					
Asset-I	900.62	28.35	3.14%	28.35	25.52	1.42	1.41	-	-
Asset-II	1171.07	56.36	4.81%	56.36	50.73	2.82	2.81	-	-
Asset-III & IV	2646.67	85.60	3.23%	85.60	38.66	-	-	46.94	-
Asset-VI	1100.31	60.81	5.52%	60.81	10.72	-	10.00	20.04	20.05
Asset-VII(b)	816.20	45.91	5.62%	45.91	5.36	-	13.19	13.68	13.68
Asset-IX	1944.83	76.57	3.94%	76.57	61.25	-	11.49	3.83	-

## Capital cost as on COD

35. Accordingly, the capital cost allowed as on COD under Regulation 9(2) of the 2014 Tariff Regulations is summarized as under:-



(₹ in lakh)

Asset	Capital Cost claimed as on COD (A)	IDC Disallowed due to time overrun not condoned (B)	Undischarged IDC liability (C)	Undischarged amount of Initial Spares as on COD (D)	Capital Cost as on COD considered for tariff calculation (E)=(A)-(B)-(C)-(D)
Asset-I	689.75	12.75	-	2.83	674.17
Asset-II	432.53	14.16	-	5.63	412.74
Asset-III & IV	1870.09	55.89	-	46.94	1767.26
Asset-VI	914.12	22.53	-	50.09	841.50
Asset-VII(b)	563.65	10.62	-	40.55	512.48
Asset-IX	2000.00	-	23.76	15.32	1960.92

### Additional Capital Expenditure (ACE)

36. As per Clause (13) of Regulation 3 of the 2014 Tariff Regulations, the cut-off date in respect of Asset-I & II is 31.3.2019 and 31.3.2020 for Asset-III&IV, VI, VII (b) and IX. The claim of additional capital expenditure has been dealt in accordance with Regulation 14. The Petitioner has claimed the following ACE on estimation basis in respect of the instant assets and submitted the Auditor's Certificates in support of the same:-

(₹ in lakh)

Asset	Estimated Expenditure				Total Additional capital expenditure claimed by Petitioner	Total Additional capital expenditure claimed by Petitioner as on 31.3.2019
	2016-17	2017-18	2018-19	2019-20		
Asset-I	83.20	150.00	-	-	233.20	233.20
Asset-II	560.85	200.00	-	-	760.85	760.85
Asset-III & IV	-	671.82	200.00	-	871.82	871.82
Asset-VI	-	39.63	136.22	136.22	312.07	175.85
Asset-VII (b)	-	34.18	136.74	136.73	307.65	170.92
Asset-IX	-	440.97	248.48	-	689.45	689.45



37. Since, FY 2019-20 falls beyond tariff period 2014-19 and is not covered under the 2014 Tariff Regulations, the projected ACE claimed by the petitioner for FY 2019-20 has been ignored for the purpose of tariff and will be dealt during the next tariff period, based on the then prevailing Tariff Regulations and corresponding claim by the petitioner.

38. The Petitioner has claimed additional capital expenditure incurred/projected to be incurred on account of Balance and Retention Payments and submitted Audited Certificate. The entitled un-discharged IDC liability as on COD has been allowed as ACE during the year of its discharge. Further, out of the total un-discharged expenditure on Initial Spares as on COD, the expenditure made within the tariff control period has been allowed as ACE during the year of its discharge and remaining expenditure disallowed. The allowed Additional Capital expenditure are summarized below which is subject to true up:-

(₹ in lakh)

Allowed Add-cap	Asset-I		
	2016-17	2017-18	2018-19
ACE to the extent of work deferred for execution	83.20	150.00	-
Discharges of un-discharged IDC as on COD	-	-	-
Discharges of un-discharged expenditure of initial spares	1.42	1.41	-
<b>Total allowed add-cap</b>	<b>84.62</b>	<b>151.41</b>	

Allowed Add-cap	Asset-II		
	2016-17	2017-18	2018-19
ACE to the extent of work deferred for execution	560.85	200.00	-
Discharges of un-discharged IDC as on COD	-	-	-
Discharges of un-discharged expenditure of initial spares	2.82	2.81	-
<b>Total allowed add-cap</b>	<b>563.67</b>	<b>202.81</b>	-

Allowed Add-cap	Asset- III & IV	
	2017-18	2018-19
ACE to the extent of work deferred for execution	671.82	200.00
Discharges of un-discharged IDC as on COD	-	-
Discharges of un-discharged expenditure of initial spares	-	46.94
<b>Total allowed add-cap</b>	<b>671.82</b>	<b>246.94</b>



Allowed Add-cap	Asset-VI	
	2017-18	2018-19
ACE to the extent of work deferred for execution	39.63	136.22
Discharges of un-discharged IDC as on COD	-	-
Discharges of un-discharged expenditure of initial spares	10.00	20.05
<b>Total allowed add-cap</b>	<b>49.63</b>	<b>156.27</b>

Allowed Add-cap	Asset-VII (b)	
	2017-18	2018-19
ACE to the extent of work deferred for execution	34.18	136.74
Discharges of un-discharged IDC as on COD	-	-
Discharges of un-discharged expenditure of initial spares	13.19	13.68
<b>Total allowed add-cap</b>	<b>47.37</b>	<b>150.42</b>

Allowed Add-cap	Asset-IX	
	2017-18	2018-19
ACE to the extent of work deferred for execution	440.97	248.48
Discharges of un-discharged IDC as on COD	1.97	21.79
Discharges of un-discharged expenditure of initial spares	11.49	3.83
<b>Total allowed add-cap</b>	<b>454.43</b>	<b>274.10</b>

### Capital cost for the tariff period 2014-19

39. Accordingly, the capital cost considered for the tariff period 2014-19, subject to truing up, is as under:-

Asset	Capital Cost Allowed as on COD	ACE allowed for 2016-17	ACE allowed for 2017-18	ACE allowed for 2018-19	(₹ in lakh)
					Total Estimated Completion Cost as on 31.3.2019
Asset-I	674.17	84.62	151.41		910.20
Asset-II	412.74	563.67	202.81		1179.22
Asset-III & IV	1767.26		671.82	246.94	2686.02
Asset-VI	841.50		49.63	156.27	1047.40
Asset-VII(b)	512.48		47.37	150.42	710.27
Asset-IX	1960.92		454.43	274.10	2689.45



## Debt-Equity Ratio

40. Debt:Equity Ratio is considered as per Regulation 19 of the 2014 tariff Regulations. The financial package up to COD as submitted in form 6 has been considered to determine the debt equity Ratio. The capital cost allowed as on the date of commercial operation arrived at as above and additional capitalization allowed have been considered in the debt-equity ratio of 70:30. The debt-equity as on dates of commercial operation and 31.3.2019 considered on normative basis are as under:-

(₹ in lakh)

Asset-I				
Particular	Capital cost as on COD		Capital cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	471.92	70.00	637.14	70.00
Equity	202.25	30.00	273.06	30.00
<b>Total</b>	<b>674.17</b>	<b>100.00</b>	<b>910.20</b>	<b>100.00</b>

Asset-II				
Particular	Capital cost as on COD		Capital cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	288.92	70.00	825.46	70.00
Equity	123.82	30.00	353.77	30.00
<b>Total</b>	<b>412.74</b>	<b>100.00</b>	<b>1179.22</b>	<b>100.00</b>

Asset-III & IV				
Particular	Capital cost as on COD		Capital cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	1,237.09	70.00	1880.22	70.00
Equity	530.18	30.00	805.81	30.00
<b>Total</b>	<b>1767.26</b>	<b>100.00</b>	<b>2686.02</b>	<b>100.00</b>

Asset-VI				
Particular	Capital cost as on COD		Capital cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	589.06	70.00	733.18	70.00



<b>Asset-VI</b>				
<b>Particular</b>	<b>Capital cost as on COD</b>		<b>Capital cost as on 31.3.2019</b>	
	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>
Equity	252.44	30.00	314.21	30.00
<b>Total</b>	<b>841.50</b>	<b>100.00</b>	<b>1047.40</b>	<b>100.00</b>

<b>Asset-VII (b)</b>				
<b>Particular</b>	<b>Capital cost as on COD</b>		<b>Capital cost as on 31.3.2019</b>	
	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>
Debt	358.74	70.00	497.19	70.00
Equity	153.74	30.00	213.08	30.00
<b>Total</b>	<b>512.48</b>	<b>100.00</b>	<b>710.27</b>	<b>100.00</b>

<b>Asset-IX</b>				
<b>Particular</b>	<b>Capital cost as on COD</b>		<b>Capital cost as on 31.3.2019</b>	
	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>
Debt	1,372.65	70.00	1882.62	70.00
Equity	588.27	30.00	806.83	30.00
<b>Total</b>	<b>1,960.92</b>	<b>100.00</b>	<b>2689.45</b>	<b>100.00</b>

### **Return on Equity**

41. The Petitioner has submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate of 20.961% as per the above Regulations. The Petitioner has further submitted that the grossed up RoE is subject to truing up based on the effective tax rate of respective financial year applicable to the Petitioner Company.

42. We have considered the submissions made by the Petitioner and 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 RoE. 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. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations.

43. Accordingly, the RoE allowed is as follows:-

(₹ in lakh)

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	202.25	227.64	273.06
Addition due to Additional capitalisation	25.39	45.42	0.00
Closing Equity	227.64	273.06	273.06
Average Equity	214.94	250.35	273.06
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>18.48</b>	<b>49.09</b>	<b>53.55</b>

<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Equity	123.82	292.92	353.77
Addition due to Additional capitalisation	169.10	60.84	0.00
Closing Equity	292.92	353.77	353.77
Average Equity	208.37	323.34	353.77
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>10.30</b>	<b>63.41</b>	<b>69.37</b>

<b>Asset- III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Equity	530.18	731.73
Addition due to Additional capitalisation	201.55	74.08
Closing Equity	731.73	805.81
Average Equity	630.95	768.77
Return on Equity (Base Rate)	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>81.70</b>	<b>150.76</b>



<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Equity	252.44	267.33
Addition due to Additional capitalisation	14.89	46.88
Closing Equity	267.33	314.21
Average Equity	259.89	290.77
Return on Equity (Base Rate)	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>23.74</b>	<b>57.02</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Equity	153.74	167.96
Addition due to Additional capitalisation	14.21	45.13
Closing Equity	167.96	213.08
Average Equity	160.85	190.52
Return on Equity (Base Rate)	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>10.28</b>	<b>37.36</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Equity	588.27	724.60
Addition due to Additional capitalisation	136.33	82.23
Closing Equity	724.60	806.83
Average Equity	656.44	765.72
Return on Equity (Base Rate)	15.50%	15.50%
MAT rate for the Financial year	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
<b>Return on Equity (Pre-tax)</b>	<b>65.60</b>	<b>150.16</b>

### **Interest on loan (IOL)**

44. The IoL has been calculated as per the provisions of Regulation 26 of the 2014 Tariff Regulations as detailed below:-

- a) The Gross Normative loan has been considered as per the Loan amount determined based on the debt equity ratio applied on the allowed capital cost.



- b) The depreciation of every year has been considered as Normative repayment of loan of concerned year;
- c) The weighted average rate of interest on actual loan portfolio has been worked out by considering the Gross amount of loan, repayment & rate of interest as mentioned in the petition, which has been applied on the normative average loan during the year to arrive at the interest on loan.

45. The Petitioner has submitted that the IoL has been claimed on the basis of rate prevailing as on COD and the change in interest is due to floating rate of interest applicable, if any, needs to be claimed/ adjusted over the tariff block 2014-19. We have calculated IoL 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 truing-up. The IOL is allowed considering all the loans submitted in Form-9C. The Petitioner is directed to reconcile the total gross loan for the calculation of weighted average Rate of Interest and for the calculation of IDC, which would be reviewed at the time of truing-up.

46. The details of IOL calculated is as under:-

**(₹ in lakh)**

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Normative Loan	471.92	531.15	637.14
Cumulative Repayment up to previous	0.00	16.58	60.64
Net Loan-Opening	471.92	514.57	576.50
Addition due to Additional Capitalization	59.23	105.99	0.00
Repayment during the year	16.58	44.06	48.06
Net Loan-Closing	514.57	576.50	528.44
Average Loan	493.25	545.53	552.47
Weighted Average Rate of Interest on Loan	8.0578%	8.0572%	8.0566%
<b>Interest on Loan</b>	<b>17.42</b>	<b>43.95</b>	<b>44.51</b>



<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Normative Loan	288.92	683.49	825.46
Cumulative Repayment up to previous Year	0.00	9.24	66.15
Net Loan-Opening	288.92	674.25	759.30
Addition due to Additional Capitalization	394.57	141.97	0.00
Repayment during the year	9.24	56.91	62.26
Net Loan-Closing	674.25	759.30	697.04
Average Loan	481.58	716.77	728.17
Weighted Average Rate of Interest on Loan	8.1309%	8.1291%	8.1309%
<b>Interest on Loan</b>	<b>9.87</b>	<b>58.27</b>	<b>59.21</b>

<b>Asset-III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Gross Normative Loan	1237.09	1707.36
Cumulative Repayment up to previous Year	0.00	73.32
Net Loan-Opening	1237.09	1634.04
Addition due to Additional Capitalization	470.27	172.86
Repayment during the year	73.32	135.30
Net Loan-Closing	1634.04	1671.59
Average Loan	1435.56	1652.81
Weighted Average Rate of Interest on Loan	8.4415%	8.4404%
<b>Interest on Loan</b>	<b>80.01</b>	<b>139.50</b>

<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Gross Normative Loan	589.06	623.80
Cumulative Repayment up to previous Year	0.00	21.30
Net Loan-Opening	589.06	602.49
Addition due to Additional Capitalization	34.74	109.39
Repayment during the year	21.30	51.18
Net Loan-Closing	602.49	660.70
Average Loan	595.77	631.60
Weighted Average Rate of Interest on Loan	7.3525%	7.3582%
<b>Interest on Loan</b>	<b>20.40</b>	<b>46.47</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Gross Normative Loan	358.74	391.90
Cumulative Repayment up to previous Year	0.00	9.23
Net Loan-Opening	358.74	382.67
Addition due to Additional Capitalization	33.16	105.30
Repayment during the year	9.23	33.53



<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Net Loan-Closing	382.67	454.43
Average Loan	370.70	418.55
Weighted Average Rate of Interest on Loan	7.2570%	7.2615%
<b>Interest on Loan</b>	<b>8.77</b>	<b>30.39</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Gross Normative Loan	1372.65	1690.75
Cumulative Repayment up to previous Year	0.00	53.36
Net Loan-Opening	1372.65	1637.39
Addition due to Additional Capitalization	318.10	191.87
Repayment during the year	53.36	123.28
Net Loan-Closing	1637.39	1705.98
Average Loan	1505.02	1671.69
Weighted Average Rate of Interest on Loan	7.6589%	7.6567%
<b>Interest on Loan</b>	<b>58.74</b>	<b>128.00</b>

### **Depreciation**

47. Depreciation has been dealt with in line of Regulation 27 of 2014 Tariff Regulations. The instant transmission Asset was put under commercial operation during 2016-17 & 2016-17. Accordingly, it will complete 12 years after 2018-19. As such, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations. The details of depreciation allowed is as under:-

(₹ in lakh)

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Gross Block	674.17	758.79	910.20
Additional Capital expenditure	84.62	151.41	0.00
Closing Gross Block	758.79	910.20	910.20
Average Gross Block	716.48	834.49	910.20
Rate of Depreciation	5.2800%	5.2800%	5.2800%
Depreciable Value	674.89	743.02	182.37
Remaining Depreciable Value	674.89	726.44	121.73
<b>Depreciation</b>	<b>16.58</b>	<b>44.06</b>	<b>48.06</b>

<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>



<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Gross Block	412.74	976.41	1179.22
Additional Capital expenditure	563.67	202.81	0.00
Closing Gross Block	976.41	1179.22	1179.22
Average Gross Block	694.58	1077.82	1179.22
Rate of Depreciation	5.2800%	5.2800%	5.2800%
Depreciable Value	625.12	970.04	1061.30
Remaining Depreciable Value	625.12	960.79	995.15
<b>Depreciation</b>	<b>9.24</b>	<b>56.91</b>	<b>62.26</b>

<b>Asset- III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Gross Block	1767.26	2439.08
Additional Capital expenditure	671.82	246.94
Closing Gross Block	2439.08	2686.02
Average Gross Block	2103.17	2562.55
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	1892.86	2306.30
Remaining Depreciable Value	1892.86	2232.98
<b>Depreciation</b>	<b>73.32</b>	<b>135.30</b>

<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Gross Block	841.50	891.13
Additional Capital expenditure	49.63	156.27
Closing Gross Block	891.13	1047.40
Average Gross Block	866.32	969.26
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	779.68	872.34
Remaining Depreciable Value	779.68	851.03
<b>Depreciation</b>	<b>21.30</b>	<b>51.18</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Gross Block	512.48	559.85
Additional Capital expenditure	47.37	150.42
Closing Gross Block	559.85	710.27
Average Gross Block	536.17	635.06
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	482.55	571.56
Remaining Depreciable Value	482.55	562.33
<b>Depreciation</b>	<b>9.23</b>	<b>33.53</b>



<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Opening Gross Block	1960.92	2415.35
Additional Capital expenditure	454.43	274.10
Closing Gross Block	2415.35	2689.45
Average Gross Block	2188.14	2552.40
Rate of Depreciation	4.7851%	4.8300%
Depreciable Value	1969.32	2242.51
Remaining Depreciable Value	1969.32	2189.15
<b>Depreciation</b>	<b>53.36</b>	<b>123.28</b>

### **Operation and Maintenance Expenses (O&M Expenses):-**

48. The Petitioner vide affidavit dated 29.11.2016 has claimed the following O&M expenses:-

(₹ in lakh)			
<b>Asset- Name</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Asset-II	16.44	66.51	68.71
Asset-III & IV	-	87.96	137.42
Asset-IX	-	33.96	68.71

*The Petitioner has not claimed O&M expenses for Asset-I, V, VI, VII & VIII.*

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

50. Norms for O&M expenditure for Transmission System have been specified under section 29 (4) of Tariff Regulation are as follows:-



(₹ in lakh)			
Element	2016-17	2017-18	2018-19
400 kV Bay	64.37	66.51	68.71

51. We have considered the submissions made by the Petitioner. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. Accordingly, the O&M Expenses allowed is as under:-

(₹ in lakh)			
Details	2016-17	2017-18	2018-19
<b>Asset-II (COD: 30.12.2016)</b>			
1 No. 400 kV Bus reactor bay at Durgapur	16.44	66.51	68.71
<b>Asset-III &amp; IV (COD: 3.8.2017)</b>			
2 Nos. 400 kV Bus reactor bays at Rengali	-	87.96	137.42
<b>Asset-IX (COD: 27.9.2017)</b>			
1 No. 400 KV Bay at Gajuwaka	-	33.99	68.71

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

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

**a) Maintenance spares:**

Maintenance spares @ 15 % of Operation and Maintenance expenses specified in Regulation 28.

**b) O & M expenses:**

O&M expenses have been considered for one month of the O&M expenses.

**c) Receivables:**

The receivables have been worked out on the basis of 2 months' of annual fixed cost as worked out above.





**d) Rate of interest on working capital:**

As per Clause 28 (3) of the 2014 Tariff Regulations, SBI Base Rate plus 350 BPS have been considered as the rate of interest on working capital for the asset for respective tariff year.

53. Accordingly, the interest on working capital is summarized as under:-

(₹ in lakh)

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	0.00	0.00	0.00
Maintenance Spares	0.00	0.00	0.00
Receivables	20.39	23.35	24.88
<b>Total</b>	<b>20.39</b>	<b>23.35</b>	<b>24.88</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest (pro-rata)</b>	<b>1.14</b>	<b>2.99</b>	<b>3.19</b>

<b>Asset - II</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	5.44	5.54	5.73
Maintenance Spares	9.78	9.98	10.31
Receivables	31.31	42.08	44.55
<b>Total</b>	<b>46.53</b>	<b>57.60</b>	<b>60.58</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest (pro-rata)</b>	<b>1.50</b>	<b>7.37</b>	<b>7.75</b>

<b>Asset- III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	11.10	11.45
Maintenance Spares	19.98	20.61
Receivables	83.95	96.53
<b>Total</b>	<b>115.03</b>	<b>128.60</b>
Rate of Interest	12.60%	12.60%
<b>Interest (pro-rata)</b>	<b>9.57</b>	<b>16.20</b>

<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	0.00	0.00
Maintenance Spares	0.00	0.00
Receivables	23.92	26.33
<b>Total</b>	<b>23.92</b>	<b>26.33</b>
Rate of Interest	12.60%	12.60%
<b>Interest (pro-rata)</b>	<b>1.40</b>	<b>3.32</b>



<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	0.00	0.00
Maintenance Spares	0.00	0.00
Receivables	14.77	17.24
<b>Total</b>	<b>14.77</b>	<b>17.24</b>
Rate of Interest	12.60%	12.60%
<b>Interest (pro-rata)</b>	<b>0.61</b>	<b>2.17</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
O & M Expenses	10.01	10.31
Maintenance	5.56	5.73
Receivables	71.05	80.38
<b>Total</b>	<b>86.62</b>	<b>96.41</b>
Rate of Interest	12.60%	12.60%
<b>Interest (pro-rata)</b>	<b>5.56</b>	<b>12.15</b>

### Annual Transmission Charges

54. Accordingly, the annual transmission charges being allowed for the instant assets are as under:-

(₹ in lakh)

<b>Asset-I</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	16.58	44.06	48.06
Interest on Loan	17.42	43.95	44.51
Return on Equity	18.48	49.09	53.55
Interest on working capital	1.14	2.99	3.19
O & M Expenses	0.00	0.00	0.00
<b>Total</b>	<b>53.63</b>	<b>140.10</b>	<b>149.30</b>

<b>Asset-II</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	9.24	56.91	62.26
Interest on Loan	9.87	58.27	59.21
Return on Equity	10.30	63.41	69.37
Interest on working capital	1.50	7.37	7.75
O & M Expenses	16.44	66.51	68.71
<b>Total</b>	<b>47.35</b>	<b>252.47</b>	<b>267.31</b>



<b>Asset- III &amp; IV</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Depreciation	73.32	135.30
Interest on Loan	80.01	139.50
Return on Equity	81.70	150.76
Interest on working capital	9.57	16.20
O & M Expenses	87.96	137.42
<b>Total</b>	<b>332.56</b>	<b>579.18</b>

<b>Asset-VI</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Depreciation	21.30	51.18
Interest on Loan	20.40	46.47
Return on Equity	23.74	57.02
Interest on working capital	1.40	3.32
O & M Expenses	0.00	0.00
<b>Total</b>	<b>66.85</b>	<b>157.99</b>

<b>Asset-VII (b)</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Depreciation	9.23	33.53
Interest on Loan	8.77	30.39
Return on Equity	10.28	37.36
Interest on working capital	0.61	2.17
O & M Expenses	0.00	0.00
<b>Total</b>	<b>28.89</b>	<b>103.46</b>

<b>Asset-IX</b>		
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>
Depreciation	53.36	123.28
Interest on Loan	58.74	128.00
Return on Equity	65.60	150.16
Interest on working capital	5.56	12.15
O & M Expenses	33.99	68.71
<b>Total</b>	<b>217.24</b>	<b>482.29</b>

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

55. 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 is 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.

### **License Fee and RLDC Fees and Charges**

56. 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 license fee and RLDC fees and charges in accordance with Clause (2) (b) and (2) (a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

### **Goods and Services Tax**

57. The Petitioner has prayed for reimbursement of tax, if any, on account of proposed implementation of GST. GST is not levied on transmission service at present and we are of the view that Petitioner's prayer is premature.

### **Sharing of Transmission Charges**

58. Transmission charges for all the assets allowed in this order shall be recovered on monthly basis in accordance with Regulation 43 of the 2014 Tariff Regulations. 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.

59. This order disposes of Petition No. 38/TT/2017.

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

Sd/-  
**(P. K. Pujari)**  
**Chairperson**

