

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 233/TT/2016**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson**  
**Shri A. K. Singhal, Member**  
**Shri A. S. Bakshi, Member**  
**Dr. M. K. Iyer, Member**

**Date of Order : 19 .09.2017**

**In the matter of:**

Approval of transmission tariff of **Asset-I** Conversion of 50 MVAR Line Reactor (presently installed at Jeerat end of 400 kV Baharampur – Jeerat TL) as Bus Reactor in parallel with existing Bus Reactor at Jeerat, **Asset II:** Installation of 01 no. 125 MVAR Bus Reactor at Maithon sub-station with GIS bays, **Asset III:** 04 nos 220 kV GIS Line Bays at Kishanganj sub-station and **Asset IV:** Shifting of 1X315 MVA, 400/220 kV ICT from Patna (after replacement of 1X500 MVA ICT) and install it at 400/220 kV Jamshedpur Sub-station as 3rd ICT alongwith associated bays; Modification of 132 kV Bus arrangement with GIS bays at 220/132 kV Purnea sub-station; Shifting of 1X315 MVA ICT from Pusauli and install it at Farakka alongwith associated bays; and Modification of 132 kV Bus arrangement at 220/132 kV Siliguri Sub-station with GIS bays under ERSS XII Project in Eastern Region from COD to 31.3.2019 under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

**And in the matter of:**

Power Grid Corporation of India Limited  
“Soudamini”, Plot No. 2, Sector 29  
Gurgaon -122001

**....Petitioner**

**Vs**

1. Bihar State Power (Holding) Co. Ltd.



(Formerly Bihar State Electricity Board)  
Vidyut Bhawan, Bailey Road  
Patna - 800 001

2. West Bengal State Electricity Distribution Company Limited  
Bidyut Bhawan, Bidhan Nagar  
Block DJ, Sector-II, Salt Lake City  
Calcutta - 700 091
3. Grid Corporation of Orissa Ltd.  
Shahid Nagar, Bhubaneswar - 751007
4. Damodar Valley Corporation  
DVC Tower, Maniktala Civic Centre,  
VIP Road,  
Calcutta - 700 054
5. Power Department  
Govt. of Sikkim,  
Gangtok - 737 101
6. Jharkhand State Electricity Board  
In Front of Main Secretariat  
Doranda, Ranchi - 834002

.....Respondents

**For petitioner** : Shri S.K. Venkatesan, PGCIL  
Shri S.S. Raju, PGCIL  
Shri Jasbir Singh, PGCIL  
Shri Rakesh Prasad, PGCIL

**For respondents** : Shri R. B. Sharma, BSPHCL

### **ORDER**

The present petition has been filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission charges for **Asset-I** Conversion of 50 MVAR Line Reactor (presently installed at Jeerat end of 400 kV Baharampur–Jeerat TL) as



Bus Reactor in parallel with existing Bus Reactor at Jeerat, **Asset II:** Installation of 01 no. 125 MVAR Bus Reactor at Maithon Sub-station with GIS bays, **Asset III:** 04 nos 220 kV GIS Line Bays at Kishanganj Sub-station and **Asset IV:** Shifting of 1X315 MVA, 400/220 kV ICT from Patna and install it at 400/220 kV Jamshedpur Sub-station as 3rd ICT alongwith associated bays; Modification of 132 kV Bus arrangement with GIS bays at 220/132 kV Purnea Sub-station; Shifting of 1X315 MVA ICT from Pusauli and install it at Farakka alongwith associated bays; and Modification of 132 kV Bus arrangement at 220/132 kV Siliguri Sub-station with GIS bays (hereafter referred to as 'transmission assets') under ERSS XII Project in Eastern Region (hereafter referred to as 'transmission scheme'), from the date of commercial operation to 31.3.2019 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The petitioner has been entrusted with the implementation of Augmentation of transformation capacity in Eastern Region. In Eastern Region augmentation of transformation capacity is envisaged at Patna, Pusauli, Purnea Birpara and Siliguri Sub-stations. An additional 125 MVAR bus reactor at Birpara and Maithan and conversion 50 MVAR line reactor as Bus Rector at Jeerat Sub-station is envisaged to contain high voltage situation. The aforesaid system requirements for Eastern Region was agreed in the 25th TCC and ERPC Meeting and SCM on Power System Planning in ER on 27.8.2013. The Investment Approval (IA) was accorded by the Board of Directors of the petitioner company on 13.05.2014 vide Memorandum No. C/CP/ERSS-XII dated 19.5.2014 for ₹52229 lakh including an IDC of ₹ 3324 lakh (based on February, 2014



price level). As per the Investment Approval, the commissioning schedule of the project was 30 months from the date of Investment Approval. The date of Investment Approval being 13.5.2014, the assets were to be commissioned in the progressive manner upto November, 2016. Therefore, the scheduled date of commissioning of the transmission system was 13.11.2016. The scope of work covered under the instant transmission scheme is broadly as follows:-

(i) Reactive Compensation at 400 kV Sub-stations

- Installation of 1X125 MVAR Bus Reactor at Baripada with GIS bay.
- Installation of 1X125 MVAR Bus Reactor at Maithon with GIS bay.
- Conversion of 50 MVAR Line Reactor presently installed at Jeerat end of Baharampur – Jeerat 400 kV line as Bus Reactor in parallel with existing Bus Reactor at Jeerat.

(ii) Augmentation of Transformation Capacity

- Addition of 1x500 MVA, 400/220 kV ICT with GIS bays at Baripada 400/220/132 kV Sub-station of POWERGRID
- Replacement of 2X315 MVA, 400/220 kV ICTs with 2X500 MVA, 400/220 kV ICTs at Purnea #
- Replacement of 2X315 MVA, 400/220 kV ICTs with 2X500 MVA, 400/220 kV ICTs at Patna #
- Replacement of 2X315 MVA, 400/220 kV ICTs with 2X500 MVA, 400/220 kV ICTs at Pusauli #
- Shifting of 1X315 MVA, 400/220 kV ICT from any suitable location (after replacement by 1x500 MVA ICT) and install it at Jamshedpur 400/220 kV Sub-station as 3rd ICT alongwith associated bays.



- Shifting of 1X315 MVA, 400/220 kV ICT from any suitable location (after replacement by 1x500 MVA ICT) and install it at Farakka 400/220 kV Sub-station as 2nd ICT alongwith associated bays.

# Out of the 6 nos. 315 MVA ICTs released from Purnea, Patna & Pusauli Sub-stations, one each would be kept as spare at Patna and Pusauli Sub-station, one each would be diverted to Jamshedpur and Farakka Sub-station and remaining 2x315 MVA, 400/220 kV ICTs would be utilized as Regional Spare.

- Replacement of 1X100 MVA (3rd ICT), 220/132 kV ICTs with 1X160 MVA, 220/132 kV ICT at Purnea 220/132 kV Sub-station of POWERGRID, along with necessary bay equipment /protection system.
- Replacement of existing 100 MVA, 220/132 kV ICTs with 1X160 MVA, 220/132 kV ICT at Siliguri 220/132 kV Sub-station of POWERGRID, along with necessary bay equipment /protection system
- Replacement of existing 100 MVA, 220/132 kV ICTs with 1X160 MVA, 220/132 kV ICT at Birpara 220/132 kV Sub-station of POWERGRID, along with necessary bay equipment /protection system.

100 MVA ICTs thus released from Purnea, Siliguri & Birpara shall be kept in the regional pool of spare ICTs:

- (iii) 2 no. 500 MVA Single Phase Spare Unit of 765/400 kV ICT for Eastern Region Procurement of two 500 MVA, Single Phase unit of 765/400 kV ICT for Eastern Region to be stationed at Angul and Jharsuguda Sub-stations.
- (iv) 1 no. Spare unit of 765 kV, 110 MVAR Single Phase Reactor to be stationed at Sasaram.



- (v) Modification of 132 kV bus arrangement including switchgear to Double Main Scheme at 220/132 kV Siliguri and Purnea Sub-station with GIS bays
- (vi) Construction of 4 nos. 220 kV line bays at Kishanganj Sub-station of POWERGRID

3. Subsequently, the Revised Cost Estimates (RCE) was approved vide Memorandum No. C/CP/PA1617-03-OAE-RCE019 dated 30.3.2017 for ₹ 55018 lakh including an IDC of ₹ 1700 lakh (based on December 2016 price level). It has been observed that communication relating to RCE has not been certified by the Company Secretary of the Petitioner. The Petitioner is directed to furnish the copy of RCE duly certified by the Company Secretary at the time of truing up. The scope of work covered under the scheme under RCE is broadly same as approved in original approval.

4. The scope of the scheme has been covered in different petitions. The details of assets covered in the instant scheme along with the petition numbers are given below:-

S N	Name of Asset	Anticipated /Actual DOCO	Petition Status
1	Asset-I: Replacement of existing 100 MVA, 220/132 ICT with 01 No. 1X160 MVA ICT at 220/132 kV Birpara Sub-station alongwith associated bays at Birpara Sub-station	1.1.2016	Covered under 69/TT/2016 Final tariff order issued.
2	Asset-II: Replacement of existing 100 MVA, 220/132 ICT with 1x160 MVA, 220/132 kV ICT at 220/132 kV Siliguri Sub-station along with necessary bay eqpt/ protection system at Siliguri Sub-station	2.2.2016	
3	Asset III: Replacement of 315 MVA 400/220 Kv ICT I with 500 MVA 400/220 kV ICT at Patna Sub-station	15.4.2016	
4	Asset IV: Replacement of 315 MVA 400/220 Kv ICT II with 500 MVA 400/220 kV ICT at Patna Sub-station	15.5.2016	



5	Asset V: Replacement of 315 MVA 400/220 Kv ICT I with 500 MVA 400/220 kV ICT at Pusauli Sub-station	1.5.2016	
6	<b>Asset VI:</b> Replacement of 315 MVA 400/220 Kv ICT II with 500 MVA 400/220 kV ICT at Pusauli Sub-station	<b>15.5.2016</b>	
7	<b>Asset VII:</b> Replacement of 315 MVA 400/220 Kv ICT II with 500 MVA 400/220 kV ICT at Purnea	<b>30.5.2016</b>	
8	<b>Asset VIII:</b> Replacement of 1x 100 MVA (3 <sup>rd</sup> ) ICT with 1x160 MVA220/132 kV ICT at Purnea Sub-station	<b>29.2.2016</b>	
9	<b>Asset-IX:</b> 01 NO of 1X125 MVAR Bus Reactor at Baripada Sub-station with GIS bay	<b>31.5.2016</b>	
10	<b>Asset-X:</b> 01 Nos of 1X500 MVA , 400/220/132 kV ICT at 400/220/132 kV VBaripada Sub-station alongwith GIS bays	<b>31.5.2016</b>	
11	<b>Asset-I</b> Replacement of 315 MVA 400/220 Kv ICT I with 500 MVA 400/220 kV ICT at Purnea Sub-station	<b>13.7.2015</b>	<b>Covered under 232/TT/2015 Final tariff order issued.</b>
12	<b>Asset-I</b> Conversion of 50 MVAR Line Reactor (presently installed at Jeerat end of 400 kV Baharampur – Jeerat TL) as Bus Reactor in parallel with existing Bus Reactor at Jeerat	29.8.2016 (Actual)	<b>Covered under present petition</b>
13	<b>Asset II:</b> Installation of 01 no. 125 MVAR Bus Reactor at Maithon S/S with GIS bays	6.10.2016  (Actual)	
14	<b>Asset III:</b> 04 nos 220 kV GIS Line Bays at Kishanganj Sub-station	20.10.2016	
15	<b>Asset IV:</b> Shifting of 1X315 MVA, 400/220 kV ICT from Patna (after replacement of 1X500 MVA ICT) and install it at 400/220 kV Jamshedpur Sub-station as 3rd ICT alongwith associated bays; Modification of 132 kV Bus arrangement with GIS bays at 220/132 kV Purnea Sub-station; Shifting of 1X315 MVA ICT from Pusauli and install it at Farakka alongwith associated bays; and Modification of 132 kV Bus arrangement at 220/132 kV Siliguri Sub-station with GIS bays	1.12.2016 (Anticipated)	

5. The petitioner vide affidavit dated 3.3.2017 has submitted the updated status of COD of assets covered in the present petition and that Asset-IV has been split into two



assets i.e. Asset-IV(a) and Asset-IV(b). Asset-IV(a) was put into commercial operation on 30.11.2016 whereas Asset-IV(b) is yet to be put into commercial operation. The petitioner has not submitted certificate from RLDC for COD of Asset-IV (b). Thus, petitioner is directed to file fresh petition in respect of Asset-IV (b) after the commissioning of same. The date of commercial operation, submitted in the petition alongwith the details of the instant assets are as under:-

Particulars	Name of the Asset	COD		Delay
		Scheduled	Actual	
Asset-I	Conversion of 50 MVAR Line Reactor (presently installed at Jeerat end of 400 kV Baharampur – Jeerat TL) as Bus Reactor in parallel with existing Bus Reactor at Jeerat	13.11.2016	29.8.2016	No delay
Asset-II	Installation of 01 no. 125 MVAR Bus Reactor at Maithon Sub-station with GIS bays		6.10.2016	No delay
Asset-III	04 nos 220 kV GIS Line Bays at Kishanganj Sub-station**		20.10.2016	No delay
Asset-IV(a)	Modification of 132 kV Bus arrangement at 220/132 kV Siliguri Sub-station with GIS bays	13.11.2016	30.11.2016	19 days
Asset-IV(b)	Shifting of 1X315 MVA, 400/220 kV ICT from Patna (after replacement of 1X500 MVA ICT) and install it at 400/220 kV Jamshedpur Sub-station as 3rd ICT alongwith associated bays; Modification of 132 kV Bus arrangement with GIS bays at 220/132 kV Purnea Sub-station; Shifting of 1X315 MVA ICT from Pusauli and install it at Farakka alongwith associated bays		15.4.2017 (Anticipated)	

\*\*COD of Asset-III has been dealt in para 15,16,17 and 18.

6. Annual Fixed Cost for the purpose of inclusion in the POC charges was granted for the instant transmission assets vide order dated 21.01.2017 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations, subject to proviso (iii) and (iv) of the said Regulation.





7. The details of the transmission charges claimed by the petitioner are as under:-

(₹ in lakh)

Particulars	Asset-I		
	2016-17 (Pro-rata)	2017-18	2018-19
Depreciation	9.39	27.47	32.76
Interest on Loan	11.10	31.09	34.73
Return on Equity	10.47	30.60	36.50
Interest on Working Capital	2.67	5.42	5.86
O & M Expenses	38.07	66.51	68.71
<b>Total</b>	<b>71.70</b>	<b>161.09</b>	<b>178.56</b>
Particulars	Asset-II		
	2016-17 (Pro-rata)	2017-18	2018-19
Depreciation	85.75	290.81	318.14
Interest on Loan	91.76	297.77	302.27
Return on Equity	95.54	324.03	354.47
Interest on Working Capital	7.35	22.87	24.32
O & M Expenses	26.77	56.84	58.73
<b>Total</b>	<b>307.17</b>	<b>992.32</b>	<b>1057.93</b>
Particulars	Asset-III		
	2016-17 (Pro-rata)	2017-18	2018-19
Depreciation	82.94	213.80	230.64
Interest on Loan	89.24	218.20	218.14
Return on Equity	92.27	237.84	256.58
Interest on Working Capital	10.00	24.34	25.44
O & M Expenses	80.91	186.20	192.40
<b>Total</b>	<b>355.36</b>	<b>880.38</b>	<b>923.20</b>
Particulars	Asset-IV(a)		
	2016-17 (Pro-rata)	2017-18	2018-19
Depreciation	51.43	185.43	202.04
Interest on Loan	53.64	184.28	186.30
Return on Equity	57.30	206.60	225.12
Interest on Working Capital	3.54	12.56	13.37
O & M Expenses	0.00	0.00	0.00
<b>Total</b>	<b>165.91</b>	<b>588.87</b>	<b>626.83</b>

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



(₹ in lakh)

Particulars	Asset-I		
	2016-17	2017-18	2018-19
O & M expenses	5.36	5.54	5.73
Maintenance Spares	9.66	9.98	10.31
Receivables	20.21	26.85	29.76
<b>Total</b>	<b>35.23</b>	<b>42.37</b>	<b>45.79</b>
Interest Rate	12.80%	12.80%	12.80%
Interest	4.51	5.42	5.86
<b>Interest (pro-rata)</b>	<b>2.67</b>	<b>5.42</b>	<b>5.86</b>
Particulars	Asset-II		
	2016-17	2017-18	2018-19
O & M expenses	4.58	4.74	4.89
Maintenance Spares	8.25	8.53	8.81
Receivables	105.22	165.39	176.32
<b>Total</b>	<b>118.06</b>	<b>178.65</b>	<b>190.03</b>
Interest Rate	12.80%	12.80%	12.80%
Interest	15.11	22.87	24.32
<b>Interest (pro-rata)</b>	<b>7.35</b>	<b>22.87</b>	<b>24.32</b>
Particulars	Asset-III		
	2016-17	2017-18	2018-19
O & M expenses	15.02	15.52	16.03
Maintenance Spares	27.03	27.93	28.86
Receivables	131.93	146.73	153.87
<b>Total</b>	<b>173.98</b>	<b>190.18</b>	<b>198.76</b>
Interest Rate	12.80%	12.80%	12.80%
Interest	22.27	24.34	25.44
<b>Interest (pro-rata)</b>	<b>10.00</b>	<b>24.34</b>	<b>25.44</b>
Particulars	Asset-IV(a)		
	2016-17	2017-18	2018-19
O & M expenses	0.00	0.00	0.00
Maintenance Spares	0.00	0.00	0.00
Receivables	82.27	98.14	104.47
<b>Total</b>	<b>82.27</b>	<b>98.14</b>	<b>104.47</b>
Interest Rate	12.80%	12.80%	12.80%
Interest	10.53	12.56	13.37
<b>Interest (pro-rata)</b>	<b>3.54</b>	<b>12.56</b>	<b>13.37</b>

9. 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. Bihar State Power (Holding) Company Ltd (BSP(H)CL), Respondent No. 1 has filed reply dated 21.12.2016. BSP(H)CL has raised issues like time over-run, cost



variation, initial spares, effective tax rate etc.. The petitioner has filed its rejoinder to the reply filed by BSP(H)CL, vide affidavit dated 10.1.2017. The objections raised by the respondent and the clarifications given by the petitioner are addressed in the relevant paragraphs of this order.

10 BSP(H)CL has submitted that the petitioner has not furnished the Transmission Service Agreement (TSA) between the transmission licensee and the designated Inter-State customers as per the provisions of Regulation 3(63) of the 2014 Tariff Regulations. BSP(H)CL has also pointed that the discussions held in ERPC as cited by the petitioner cannot be treated as 'TSA'.

11. In response, the petitioner in its rejoinder has submitted that the issue of signing of TSA with Bihar State Power (Holding) Company Ltd. was taken up with them, time and again, but it has not been signed by them so far. However, in the absence of the same, the model TSA (approved by the Commission) holds good as per the Regulation 2(5) of CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010. The petitioner has also furnished copies of correspondence made by it with BSP Holding Co Ltd/BSPTCL.

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



## **Date of commercial operation**

13 Regulation 4(1) of the 2014 Tariff Regulations provides the methodology for declaration of commercial operation date and Regulation 5 of the 2014 Tariff Regulations provides for the trial operation of the transmission system. This provision is further superceded by the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016. As per these Regulations, the commercial operation of the transmission system shall fulfill the following requirements:-

- a) successful charging of the transmission system or an element thereof for 24 hours at continuous flow of power;
- b) transmission of communication signal from the sending end to the receiving end and with requisite metering system, telemetry and protection system in service;
- c) A certificate from the concerned Regional Load Despatch Centre regarding the above requirements;
- d) CMD/CEO/MD of the Company shall certify that the transmission line, sub-station and communication system conform to the relevant Grid Standard and Grid Code, and are capable of operation to their full capacity;
- e) An element shall be declared to have achieved COD only after all the elements which are pre-required to achieve COD as per the Transmission Services Agreement are commissioned.



14. The CEA and the RLDC certificates submitted by the petitioner meets the requirement of COD as per the 2014 Tariff Regulations, for Asset I and Asset II. Thus COD for Asset-I and Asset-II has been considered the same as claimed by the petitioner i.e. 29.8.2016 and 6.10.2016 respectively. On the basis of claim of petitioner duly supported with certificates from the CEA and the RLDC, the COD of Asset-IV (a) has been considered as 30.11.2016.

15. However, as regards Asset-III, the petitioner has submitted that the 220 kV 2 X D/C Kishanganj (PG) – Kishanganj (BSPTCL) transmission line of BSPTCL was planned for safe evacuation of the power from the 400/220 kV Kishanganj Sub-station (PGCIL). The 04 nos 220 kV GIS line bays for these above mentioned transmission lines were under the scope of the petitioner. The petitioner in its petition and further vide affidavit dated 3.3.2017 has submitted that it was mentioned by BSPTCL in the 33rd ERPC and 4<sup>th</sup> Standing Committee meeting of Eastern Region that the construction works and commissioning works of 220 kV 2 X D/C Kishanganj (PG) – Kishanganj (BSPTCL) line shall be matching with the construction of 04 nos 220 kV GIS line bays at Kishanganj Sub-station (PGCIL). The petitioner has submitted that based on assurance provided by BSPTCL, it proceeded with the construction works. The petitioner has also submitted that it followed up continuously with BSPTCL for commissioning of their downstream lines matching with the 220 kV line bays at Kishanganj Sub-station (PGCIL). The petitioner has further submitted that the petitioner and BSPTCL were able to match only a part of their corresponding networks on 20.10.2016 with the commissioning of 02 nos 220 kV line bays and corresponding one nos. 220 kV D/C Kishanganj (PG) – Kishanganj (BSPTCL) line. However, in the



absence of completion of the other 220 kV D/C Kishanganj (PG) – Kishanganj (BSPTCL) line of BSPTCL, the rest of the corresponding 02 no. 220 kV line bays at Kishanganj (PGCIL) could not be utilized. The petitioner submitted that it was not feasible to delay the petitioner's project further to match with the downstream as further time extension would have a bearing on the project cost. The petitioner has accordingly commissioned part of Asset III (i.e. non-matching 02 nos 220 kV line bays) on 20.10.2016 at no load. Accordingly, the petitioner has prayed for approval of COD of part of Asset-III i.e. non-matching 02 nos 220 kV line bays out of total 04 nos 220 kV line bays under proviso (ii) of clause 3 of Regulation 4 of the 2014 Tariff Regulations.

16. The petitioner was directed to submit the status of commissioning of the downstream lines of Kishanganj Sub-station. The petitioner, vide affidavit dated 31.7.2017 has submitted the status of commissioning as per which one no. 220 kV D/C Kishanganj (PG) – Kishanganj [Bihar State Power holding Company Limited (BSPHCL)] was charged on 20.10.2016 and the other 220 kV D/C Kishanganj (PG) – Kishanganj (BSPHCL) was charged on 10.3.2017. The petitioner has submitted that part of downstream network was commissioned on 20.10.2016 and the rest was commissioned on 10.3.2017. 02 nos 220 kV line bays out of total 04 nos 220 kV, were corresponding to the matching transmission line charged on 20.10.2016 and the rest 02 nos 220 kV line bays were corresponding to the transmission line charged on 10.3.2017. Therefore, no COD approval has been sought for the part of Asset-III which is 02 nos 220 bays only (i.e. bays with matching commissioning with corresponding to



the transmission line charged on 20.10.2016) under proviso (ii) of clause 3 of Regulation 4 of the 2014 Tariff Regulations.

17. It has been observed that the BSPHCL commissioned part of its scope i.e. one no. 220 kV D/C Kishanganj (PG) – Kishanganj (BSPHCL) line on 20.10.2016 matching with the commissioning of 220 kV line bays at Kishanganj Sub-station (PGCIL). As per the petitioner submission dated 31.7.2017 regarding the status of downstream system, the downstream line of remaining two bays has been commissioned on 10.3.2017 matching with downstream system i.e. the charging of BSPTCL's other 220 kV D/C Kishanganj (PG) – Kishanganj (BSPHCL) line. These remaining two bays are being utilized from 10.3.2017.

18. We have considered the submissions made by the petitioner regarding the COD of Asset-III. Out of the four bays covered in Asset-III, the COD of two bays is allowed matching with downstream line on 20.10.2016. The COD of remaining two bays as claimed by the petitioner under Regulation 4(3)(ii) is not admissible. The COD for remaining two bays is allowed on 10.3.2017 matching with commissioning of downstream system. The IDC/IEDC in respect of two bays which is considered as commissioned on 10.3.2017 shall not be capitalized and same (from 20.10.2016 to 9.3.2017) shall be borne by the BSPTCL.



### Time Over-run

19. As per the investment approval, assets covered in the instant petition were scheduled to be commissioned within 30 months from the date of investment approval dated 13.5.2014. Accordingly, the assets were to be commissioned by 12.11.2016, against which the subject assets were commissioned and put under commercial operation as per the details given below:-

Asset	SCOD	COD	Delay
Asset-I	12.11.2016	29.8.2016	No Delay
Asset-II		6.10.2016	No Delay
Asset-III		Two bays 20.10.2016	No Delay
		Two bays 10.3.2017 (Actual utilization)	
Asset-IV (a)		30.11.2016	19 ays

20. As regard time over run of 19 days in case of Asset-IV, the petitioner has submitted that the Siliguri Sub Station plays vital role in evacuation of power from generating stations of Sikkim and supply of power to North Bengal. Due to the system constraints, the petitioner was unable to get requisite shutdowns of elements in time at Siliguri Sub-station. The requests of petitioners were rejected number of times. Based on information furnished by the petitioner, detail of activity wise shutdown delay is tabulated below:-





Sr. No.	Name of Element	Date of applied Shut Down	Date of shut down approval or Rejected	Total Delays in Days
1	132 kV Siliguri-Melli	8.8.2016	Rejected	
	132 kV Siliguri-Kurseong	8.8.2016	11.8.2016	3 days
2	160MVA ICT-I	12.8.2016	13.8.2016	1 day
3	132 kV Siliguri-Melli	Earlier on 8.8.2016 now on 23.9.2016	24.9.2016	45 Days
4	132 kV Siliguri-Melli	30.9.2016	Rejected	--
	132 kV Siliguri-Kurseong	30.9.2016	Rejected	--
5	132 kV Siliguri-Melli	4.10.2016	Rejected	~
	132 kV Siliguri-Kurseong	4.10.2016	05.10.2016	6 days
6	132 kV Siliguri-Melli	21.11.2016	28.11.2016	56 Days

21. A delay of about 56 days that occurred in availing shut down of Siliguri-Melli 132 kV Line has resulted in delay in progress of construction activities as well as delay in completion of the modification work at Siliguri Sub-station. The petitioner has further submitted that due to heavy rainfall during last season (Month of July & August), the construction of BUS Duct foundation of GIS elements could not be completed in time due to erosion of soil & water logging at pits of foundations. Hence the construction activity at site got delayed by more than 3 weeks.

22. We have perused the chronology of events, documents and correspondence made by the petitioner with authorities submitted by the petitioner to substantiate the reasons for time over-run. A delay of about 56 days occurred in availing shut down of Siliguri-Melli 132 kV Line has resulted in delay in progress of construction activities as well as



delay in completion of the modification work at Siliguri Sub-station. Heavy rainfall during last season (Month of July & August) also caused the delay in construction of BUS Duct foundation of GIS elements due to erosion of soil & water logging at pits of foundations. We are of the view that the delay of around 56 days in availing shut down and delayed construction due to heavy rains cannot be attributed to the petitioner. As such, we are of the view that the time over-run from 12.11.2016 to 30.11.2016 (19 days) in case of Asset-IV(a) is not attributable to the petitioner. Therefore, the delay of 19 days is condoned.

### **Capital cost**

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

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

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

(a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;

(b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;

(c) Increase in cost in contract packages as approved by the Commission;



(d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;

(e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;

(f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;”

(g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and

(h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

24. The details of the revised approved apportioned capital cost, capital cost as on the date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred for the transmission assets as submitted by the petitioner are as given hereunder:-

Particulars	Approved apportioned cost as per FR	Approved apportioned cost (RCE)	Cost as on COD	Additional capital expenditure incurred/projected to be incurred			Total estimated completion cost
				2016-17	2017-18	2018-19	
Asset-I	351.04	671.44	182.98	237.48	200.00	-	620.46
Asset-II	5249.00	6197.65	1720.42	3304.93	1000.00	-	6025.35
Asset-III	4637.80	4669.14	3153.96	759.31	298.84	298.85	4510.96
Asset-IV(a)	5912.15	3942.07	2634.32	596.13	596.12	-	3826.57

*Capital cost is as per Auditor Certificate dated 11.01.2017, 09.07.2017 and 31.01.2017 for the Assets I,II,III and IV(a) respectively based on Audited statement of Accounts of PGCIL ERTS-II Kolkata.*

### **Cost over-run**



25. The respondent, BSP (Holding)Co. Ltd vide affidavit dated 21.12.2016 has submitted that there is Cost Overrun in Asset-I and in Asset-II. BSP(Holding)Co. Ltd has also pointed out that the reasons cited for cost overrun in Form 5 for respective assets indicating Element wise Break-up for these Assets are very casual. The Respondent has also submitted that Form-5 indicated that the entire cost overrun is in the 'Foundation for structures', Substation equipments and Emergency D.G. Sets. The Respondent has requested that since reasons for their cost variations and cost overrun have not been properly explained, the cost overrun in respect of Asset-I and Asset-II should not be allowed.

26. The petitioner has submitted that the price variation of various items of cost could be bifurcated into two parts i.e., one from FR to Award of various Contract and other from Contract to final execution. As regard price variation from FR to award of various contracts, petitioner submitted that the Contracts for various packages covered under instant petition were awarded to the lowest evaluated and responsive bidder, on the basis of Open Competitive Bidding. The award prices represent the lowest prices available at the time of bidding of various packages, thus capturing the price level at the bidding stage. The price variation from Award to final execution is mainly on the basis of PV based on indices as per provision of respective contracts. Cost variation of supply period (2016) is mainly attributable to inflationary trends prevalent during the execution of project and also market forces prevailing at the time of bidding process of various packages. The petitioner has also submitted that



the cost of Land & site preparation (Survey & soil investigation and infrastructure) also increased from apportioned FR cost as the actual cost of land is as per the assessment made by concerned Govt. officials/ revenue authority of states. The FR costs of individual items/materials are exclusive of taxes and duties which have been indicated under a separate head while the cost of items as per the actual expenditure is inclusive of taxes and duties. Increase mainly on accounts of actual Taxes & duties, Octroi, Custom duty, excise duty etc paid.

27. The petitioner vide affidavit dated 3.3.2017 has also submitted the detailed break up of price variations in terms of escalation index of metal and explained that the increase of the price is attributable to inflationary trends prevalent during execution of project from December, 2013 (first OBD under the project) to December, 2016 (period of major supplies). The petitioner has also prayed that cost variation may be allowed as the cost overrun is beyond the control of the petitioner.

28. We have considered the submissions of the respondents and the clarifications given by the petitioner. The variation in cost of the elements is allowed as the price variation is due to market trend and the overall cost of all assets covered in the present petition is within the revised estimates of cost.

### **Treatment of IDC and IEDC**



29. The petitioner has claimed Interest During Construction (IDC) of ₹6.57 lakh, ₹42.40 lakh, ₹127.90 lakh and ₹60.88 lakh for Asset-I, Asset-II, Asset-III and Asset-IV(a) respectively. It is observed that the loan amount indicated for Bond LV in the IDC statement, and Form-9C and Form-12B, submitted by the petitioner do not match. Therefore, we have considered the loan drawn upto actual COD (as per Form-9C and Form-12B) to compute the actual IDC on cash basis. The petitioner has also submitted the details of discharge of IDC as follows:-

Particulars	(₹ in lakh)			
	Asset-I	Asset-II	Asset-III	Asset-IV(a)
Upto COD	5.29	7.21	87.56	25.46
2016-17	0.77	0.16	1.09	2.17
2017-18	0.51	35.03	39.26	33.25

30. Accordingly, IDC, as on respective COD, considered for the purpose of tariff determination in this order is as under:-

Particulars	(₹ in lakh)		
	IDC as on COD		
	Claimed	Disallowed	Allowed
Asset-I	6.57	0.00	6.57
Asset-II	42.40	0.07	42.33
Asset-III	127.90	0.16	127.74
Asset-IV(a)	60.88	0.21	60.67

31. Similarly, the petitioner has claimed IEDC of ₹1.10 lakh, ₹15.74 lakh, ₹250.96 lakh and ₹12.96 lakh, as on COD, in respect of Assets-I, II, III and IV(a) respectively. The IEDC amount claimed is within the percentage on Hard Cost as submitted in the Abstract Cost Estimate. Thus, the amount of ₹1.10 lakh, ₹15.74 lakh, ₹250.96 lakh and



₹12.96 lakh for Assets-I, II,III and IV(a) respectively has been considered, for the purpose of tariff in this order.

## **Initial Spares**

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

### **“13. Initial Spares**

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

(d) Transmission system

(i) Transmission line -1.00%

(ii) Transmission Sub-station (Green Field)-4.00%

(iii) Transmission Sub-station (Brown Field)-6.00%

(iv) Series Compensation devices and HVDC Station-4.00%

(v) Gas Insulated Sub-station (GIS)-5.00%

(vi) Communication system-3.5%

Provided that:

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) -----

(iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost



of civil works. The transmission licensee shall submit the break up of head wise IDC & IEDC in its tariff application.

33. The petitioner has claimed initial spares for the assets as given in table below:-

(₹ in lakh)

Description	Plant & Machinery Cost as on cut-off date based on Auditor's Certificate (a)	Initial spares claimed (b)
Asset-I	612.79	40.15
Asset-II	5967.21	449.07
Asset-III	3934.11	196.71
Asset-IV(a)	3752.73	205.96

34. Initial spares is allowed considering the hard costs upto available cut-off date i.e. expenditure up to 2018-19 for both the assets. The initial spares calculated and allowed in this order is given under:-

(₹ in lakh)

Asset	Total Capital cost*	Initial spares Claimed	Ceiling Limit	Initial spares worked out	Excess initial spares
Asset-I	612.79	40.15	6.00%	36.55	3.60
Asset-II	5967.21	449.07	6.00%	352.22	96.85
Asset-III	3934.11	196.71	5.00%	196.71	Nil
Asset- IV(a)	3752.73	205.96	5.00%	186.67	19.29

\*(plant and machinery cost excluding IDC, IEDC, land cost and cost of civil works up to cut-off date)

35. Accordingly, capital cost as on the date of commercial operation for the instant transmission assets after adjustment of IDC and IEDC and initial spares is considered as per Regulation 9(2) of the 2014 Tariff Regulations and is under:-





(₹ in lakh)

Particulars	Cost claimed as on COD (Cash Basis)	IDC disallowed	Initial spares disallowed	Capital cost considered as on COD
Asset-I	181.70	0.00	3.60	178.10
Asset-II	1685.24	0.07	96.85	1588.32
Asset-III**	3113.61	0.16	0.00	3113.45
Asset- IV(a)	2599.11	0.21	19.29	2579.61

\*\*COD of 2 bays has been considered 20.10.2016 and COD of remaining 2 bays has been considered as 10.3.2017

### Additional Capital Expenditure

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

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

- (i) Undischarged liabilities recognised to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law or compliance of any existing law.”

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

37. 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;”

38. The cut-off date in the case of instant transmission assets is 31.3.2019.

39. The petitioner has claimed additional capital expenditure in respect of instant assets to be on account of retention and balance payments. The details of additional capital expenditure claimed by the petitioner are as under:-

(₹ in lakh)

Particulars	From COD to 31.3.2017	2017-18	2018-19
Asset-I	238.25	200.51	0.00
Asset-II	3305.09	1034.96	0.00
Asset-IV(a)	598.30	629.37	0.00

(₹ in lakh)

Particulars	From COD to 9.3.2017	10.3.217 to 31.3.2017	2017-18	2018-19
Asset-III	328.88	431.51	337.94	298.85

40. The following capital Cost and additional capital expenditure is considered for the purpose of tariff:-

(₹ in lakh)

Assets	Capital Cost as on COD	2016-17	2017-18	2018-19	Capital Cost as on 31.3.2019
Asset-I	178.10	238.25	200.51	0.00	616.86
Asset-II	1588.32	3305.09	1034.96	0.00	5928.37
Asset-IV(a)	2579.61	598.30	629.37	0.00	3807.28

(₹ in lakh)



<b>Asset-III</b>	<b>2016-17</b> <b>20.10.2016</b> <b>to 9.3.2017</b>	<b>2016-17</b> <b>10.3.2017</b> <b>To 31.3.2017</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Capital Cost	*1556.72	*3771.21	3873.84	4211.78
Add: ACE	328.88	102.63	337.94	298.85
Closing Capital Cost	1885.61	3873.84	4211.78	4510.63

\* COD of 2 bays has been considered 20.10.2016 and COD of remaining 2 bays has been considered as 10.3.2017

## Debt- Equity ratio

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

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

Provided that:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.

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

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



42. The capital cost on the dates of commercial operation arrived at as above and additional capitalization allowed have been considered in the normative debt-equity ratio of 70:30. The details of debt-equity as on dates of commercial operation, add-cap and as on 31.3.2019 considered on normative basis are as under:-

(₹ in lakh)

Assets	Gross Loan 70% as on COD	Equity 30% as on COD	Capital Cost as on COD	Gross Loan 70% as on 31.3.2019	Equity 30% as 31.3.2019	Capital Cost as on 31.3.2019
Asset-I	124.67	53.43	178.10	431.80	185.06	616.86
Asset-II	1111.82	476.50	1588.32	4149.86	1778.51	5928.37
Asset-IV(a)	1805.73	773.88	2579.61	2665.10	1142.19	3807.28

(₹ in lakh)

Assets –III	Capital cost 20.10.2016-9.3.2017 for 2 Bays	Capital cost as on 10.3.2017- 31.3.2017	Capital Cost as on 31.3.2019
Gross Loan 70%	1089.71	2711.69	3157.44
Equity 30%	467.02	1162.15	1353.19
<b>Total</b>	<b>1556.72</b>	<b>3873.84</b>	<b>4510.63</b>

### Return on equity

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

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

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

Provided that:



- (i) in case of projects commissioned on or after 1st April, 2014, an additional return of **0.50 %** shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:
- (ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:
- (iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
- (iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
- (v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
- (vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.”

“25. Tax on Return on Equity:

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

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

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

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the



relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess."

44. The petitioner has submitted that RoE has been calculated at the rate of 19.61% after grossing up the RoE with MAT rate of 20.96%, as per the above Regulations. The petitioner has further submitted that as per Regulation 25(3) of the 2014 Tariff Regulations, 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. 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.

45. BSP(Holding) Co. Ltd. has submitted that the petitioner has not mentioned the effective tax rate for each year of tariff period for all the four assets. The petitioner may be directed to furnish details in the working of effective tax rate along with tax audit report for financial year 2014-15 and the reasons for opting MAT. The petitioner may also be directed to supply information the date from which the petitioner intends to avail benefits of Section 80 IA of the Income Tax Act, 1961 since the petitioner is entitled for



Tax Holiday for new transmission project. In response, the petitioner has submitted that as per Income Tax Act, 1961, MAT rate is the minimum tax rate to be paid by the company. The petitioner has submitted that it is availing tax benefits under provisions of Section 80IA of Income Tax Act, 1961 for computing normal income tax. However, under Section 115JB of Income Tax Act, 1961 company is liable for payment of Minimum Alternate Tax (MAT) @ 18.5% plus surcharge and Cess as applicable. As per Regulation 25(3), any over/under recovery of grossed up rate on RoE shall be adjusted at the time of truing up on the basis of actual tax paid including interest and additional demand by the IT authorities. The tax audit report will be submitted after the assessment and will be taken care at the time of truing-up. Further, as per Clause 40 of the 2014 Tariff Regulations, the deferred tax liability before 1.4.2009 shall be recovered from the beneficiaries or the long term transmission customers/DICs as the case may be, as and when the same gets materialized. As the present asset has been put under commercial operation during 2014-19, the same is not applicable.

46. We have considered the submissions of the petitioner and BRPL. 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 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. Accordingly, the RoE allowed is given below:-

Particulars	Asset-I		
	2016-17	2017-18	2018-19
	(pro-rata)		
Opening Equity	53.43	124.91	185.06
Addition due to Additional Capitalization	71.48	60.15	0.00
Closing Equity	124.91	185.06	185.06
Average Equity	89.17	154.98	185.06
Return on Equity (Base Rate )	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-Tax )	19.610%	19.610%	19.610%
Return on Equity (Pre-Tax)	<b>10.30</b>	<b>30.39</b>	<b>36.29</b>
Particulars	Asset-II		
	2016-17	2017-18	2018-19
	(pro-rata)		
Opening Equity	476.50	1468.02	1778.51
Addition due to Additional Capitalization	991.53	310.49	0.00
Closing Equity	1468.02	1778.51	1778.51
Average Equity	972.26	1623.27	1778.51
Return on Equity (Base Rate )	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-Tax )	19.610%	19.610%	19.610%
Return on Equity (Pre-Tax)	92.46	318.32	348.77

(₹ in lakh)

Particulars	Asset-III			
	2016-17	2016-17	2017-18	2018-19
	20.10.2016-9.3.2017	10.3.2017-31.3.2017		
Opening Equity	467.02	1131.36	1162.15	1263.54
Addition due to Additional Capitalization	98.67	30.79	101.38	89.66
Closing Equity	565.68	1162.15	1263.54	1353.19
Average Equity	516.35	1146.76	1212.84	1308.36
Return on Equity (Base Rate )	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-Tax)	19.610%	19.610%	19.610%	19.610%





Return on Equity (Pre-Tax)	39.12	13.55	237.84	256.57
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(₹ in lakh)

Particulars	Asset-IV(a)		
	2016-17 (pro-rata)	2017-18	2018-19
Opening Equity	773.82	953.25	1142.06
Addition due to Additional Capitalization	179.43	188.81	0.00
Closing Equity	953.25	1142.06	1142.06
Average Equity	863.53	1047.65	1142.06
Return on Equity (Base Rate )	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-Tax )	19.610%	19.610%	19.610%
Return on Equity (Pre-Tax)	56.60	205.44	223.96

### Interest on Loan (IoL)

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

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

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

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

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

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



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

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

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

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

(a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition;

(b) The yearly repayment for the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for that year;

(c) Notwithstanding moratorium availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed;

(d) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan;

(e) As per Regulation 26(5) only actual loans have been considered for computation of weighted average rate of interest.



49. The petitioner has submitted that the interest on loan has been considered on the basis of rate prevailing as on COD of assets and the change in interest due to floating rate of interest applicable, if any, for the project needs to be claimed/ adjusted over the tariff block 2014-19. We would like to clarify that the interest on loan has been calculated on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing-up.

50. Detailed calculations in support of interest on loan have been calculated as given at **Annexure I** of this order.

51. The details of Interest on Loan calculated are as under:-

Particulars	(₹ in lakh)		
	Asset-I		
	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	124.67	291.45	431.80
Cumulative Repayment upto Previous Year	0.00	9.24	36.52
Net Loan-Opening	124.67	282.20	395.28
Addition due to Additional Capitalisation	166.78	140.36	0.00
Repayment during the year	9.24	27.28	32.57
Net Loan-Closing	282.20	395.28	362.71
Average Loan	203.44	338.74	379.00
Weighted Average Rate of Interest on Loan	9.1205%	9.1164%	9.1148%
<b>Interest on Loan</b>	<b>10.93</b>	<b>30.88</b>	<b>34.54</b>
<b>Particulars</b>	<b>Asset-II</b>		



	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	
	<b>(pro-rata)</b>			
Gross Normative Loan	1111.82	3425.39	4149.86	
Cumulative Repayment upto Previous Year	0.00	82.98	368.68	
Net Loan-Opening	1111.82	3342.41	3781.18	
Addition due to Additional Capitalisation	2313.56	724.47	0.00	
Repayment during the year	82.98	285.69	313.02	
Net Loan-Closing	3342.41	3781.18	3468.17	
Average Loan	2227.11	3561.79	3624.67	
Weighted Average Rate of Interest on Loan	8.223%	8.216%	8.209%	
<b>Interest on Loan</b>	<b>88.81</b>	<b>292.64</b>	<b>297.56</b>	
<b>Particulars</b>	<b>Asset-III</b>			
	<b>2016-17</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>20.10.2016-9.3.2017</b>	<b>10.3.2017-31.3.2017</b>		
Gross Normative Loan	1089.71	2639.85	2711.69	2948.25
Cumulative Repayment upto Previous Year	0.00	35.16	47.34	261.13
Net Loan-Opening	1089.71	2604.69	2664.35	2687.12
Addition due to Additional Capitalisation	230.22	71.84	236.56	209.20
Repayment during the year	35.16	12.18	213.79	230.63
Net Loan-Closing	1284.77	2664.35	2687.12	2665.69
Average Loan	1187.24	2634.52	2675.74	2676.40
Weighted Average Rate of Interest on Loan	8.269%	8.269%	8.264%	8.259%
<b>Interest on Loan</b>	<b>37.92</b>	<b>13.13</b>	<b>221.12</b>	<b>221.06</b>

<b>Particulars</b>	<b>Asset-IV(a)</b>		
	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>(pro-rata)</b>		
Gross Normative Loan	1805.58	2224.24	2664.80
Cumulative Repayment upto Previous Year	0.00	50.80	235.19
Net Loan-Opening	1805.58	2173.44	2429.62
Addition due to Additional Capitalisation	418.66	440.56	0.00
Repayment during the year	50.80	184.39	201.00
Net Loan-Closing	2173.44	2429.62	2228.61
Average Loan	1989.51	2301.53	2329.12
Weighted Average Rate of	7.967%	7.963%	7.959%



Interest on Loan			
<b>Interest on Loan</b>	<b>52.98</b>	<b>183.27</b>	<b>185.38</b>

## Depreciation

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

### "27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a

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

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

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

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

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



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

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

(4) Land other than the land held under lease and the land for reservoir in case of

hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

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

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

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

53. The petitioner has claimed actual depreciation. In our calculations, depreciation has been calculated in accordance with Regulation 27 extracted above.

54. The transmission assets were put under commercial operation during 2014- 15. Accordingly, they 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.



55. The details of the depreciation worked out are as under:-

Particulars	(₹ in lakh)			
	Asset-I			
	2016-17 (pro-rata)	2017-18	2018-19	
Gross Block as on COD	178.10	416.35	616.86	
Addition during 2014-19 due to Projected Additional Capitalisation	238.25	200.51	0.00	
Gross Block as on 31 <sup>st</sup> March	416.35	616.86	616.86	
Average Gross Block	297.23	516.61	616.86	
Rate of Depreciation	5.28%	5.28%	5.28%	
Depreciable Value	267.51	464.95	555.18	
Remaining Depreciable Value	267.51	258.26	230.98	
<b>Depreciation</b>	<b>9.24</b>	<b>27.28</b>	<b>32.57</b>	
Particulars	Asset-II			
	2016-17 (pro-rata)	2017-18	2018-19	
Gross Block as on COD	1588.32	4893.41	5928.37	
Addition during 2014-19 due to Projected Additional Capitalisation	3305.09	1034.96	0.00	
Gross Block as on 31 <sup>st</sup> March	4893.41	5928.37	5928.37	
Average Gross Block	3240.86	5410.89	5928.37	
Rate of Depreciation	5.28%	5.28%	5.28%	
Depreciable Value	2916.78	4869.80	5335.53	
Remaining Depreciable Value	2916.78	2833.80	4501.12	
<b>Depreciation</b>	<b>82.98</b>	<b>285.69</b>	<b>313.02</b>	
Particulars	Asset-III			
	2016-17	2016-17	2017-18	2018-19
	20.10.2016-9.3.2017	10.3.2017-31.3.2017		
Gross Block as on COD	1556.72	3771.21	3873.84	4211.78
Addition during 2014-19 due to Projected Additional Capitalisation	328.88	102.63	337.94	298.85
Gross Block as on 31 <sup>st</sup> March	1885.61	3873.84	4211.78	4510.63
Average Gross Block	1721.16	3822.53	4042.81	4361.21
Rate of Depreciation	5.29%	5.29%	5.29%	5.29%



Depreciable Value	1549.05	3440.28	3638.53	3925.09
Remaining Depreciable Value	1,549.05	3,405.12	3,591.19	3,663.96
<b>Depreciation</b>	<b>35.16</b>	<b>12.18</b>	<b>213.79</b>	<b>230.63</b>
<b>Particulars</b>	<b>Asset-IV(a)</b>			
	<b>2016-17 (pro-rata)</b>	<b>2017-18</b>	<b>2018-19</b>	
Gross Block as on COD	2579.40	3177.49	3806.86	
Addition during 2014-19 due to Projected Additional Capitalisation	598.09	629.37	0.00	
Gross Block as on 31 <sup>st</sup> March	3177.49	3806.86	3806.86	
Average Gross Block	2878.45	3492.18	3806.86	
Rate of Depreciation	5.28%	5.28%	5.28%	
Depreciable Value	2590.60	3142.96	3426.17	
Remaining Depreciable Value	2590.60	2539.80	2304.62	
<b>Depreciation</b>	<b>50.80</b>	<b>184.39</b>	<b>201.00</b>	

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

56. O&M Expenses allowed for the instant assets as provided under Regulation 29(4)(a) of the 2014 Tariff Regulations are as under:-

Assets	(₹ in lakh)		
	2016-17 (pro-rata)	2017-18	2018-19
Asset-I	37.91	66.51	68.71
Asset-II	26.68	56.84	58.73
Asset- IV(a)	0.00	0.00	0.00

Assets	(₹ in lakh)			
	2016-17 20.10.2016- 9.3.2017	2016-17 10.3.2017- 31.3.2017	2017-18	2018-19
Asset-III	34.81	10.86	186.20	192.40





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

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

### **Interest on working capital**

59. Clause 1 (c) and 3 of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as follows:-

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

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

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



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

(iii) Operation and maintenance expenses for one month”

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

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

60. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 12.80% (SBI Base Rate of 9.30% plus 350 basis points). The interest on working capital as determined is shown in the table below:-

Particulars	Asset-I		
	2016-17	2017-18	2018-19
	(pro-rata)		
Maintenance Spares	5.69	9.98	10.31
O & M expenses	3.16	5.54	5.73
Receivables	11.84	26.75	29.66
<b>Total</b>	20.68	42.26	45.69
Interest Rate	12.80%	12.80%	12.80%
<b>Interest</b>	2.65	5.41	5.85
Particulars	Asset-II		
	2016-17	2017-18	2018-19
	(pro-rata)		
Maintenance Spares	4.00	8.53	8.81
O & M expenses	2.22	4.74	4.89
Receivables	49.68	162.67	173.68
<b>Total</b>	55.91	175.93	187.38



Interest Rate	12.80%	12.80%	12.80%
<b>Interest</b>	<b>7.16</b>	<b>22.52</b>	<b>23.98</b>
<b>Particulars</b>	<b>Asset-III</b>		
	<b>2016-17</b>	<b>2016-17</b>	<b>2017-18</b>
	<b>20.10.2016-9.3.2017</b>	<b>10.3.2017-31.3.2017</b>	<b>2018-19</b>
Maintenance Spares	5.22	1.63	27.93
O & M expenses	2.90	0.91	15.52
Receivables	25.21	8.52	147.23
<b>Total</b>	<b>33.33</b>	<b>11.06</b>	<b>199.25</b>
Interest Rate	12.80%	12.80%	12.80%
<b>Interest</b>	<b>4.27</b>	<b>1.42</b>	<b>24.41</b>
<b>Particulars</b>	<b>Asset-IV(a)</b>		
	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>(pro-rata)</b>		
Maintenance Spares	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00
Receivables	27.31	97.60	103.94
<b>Total</b>	<b>27.31</b>	<b>97.60</b>	<b>103.94</b>
Interest Rate	12.80%	12.80%	12.80%
<b>Interest</b>	<b>3.50</b>	<b>12.49</b>	<b>13.30</b>

### Transmission charges

61. The transmission charges allowed for the transmission assets are summarized as under:-

(₹ in lakh)

<b>Particulars</b>	<b>Asset-I</b>		
	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	9.24	27.28	32.57
Interest on Loan	10.93	30.88	34.54
Return on Equity	10.30	30.39	36.29
Interest on Working Capital	2.65	5.41	5.85
O & M Expenses	37.91	66.51	68.71



<b>Total</b>	<b>71.03</b>	<b>160.47</b>	<b>177.96</b>	
<b>Particulars</b>	<b>Asset-II</b>			
	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	
Depreciation	82.98	285.69	313.02	
Interest on Loan	88.81	292.64	297.56	
Return on Equity	92.46	318.32	348.77	
Interest on Working Capital	7.16	22.52	23.98	
O & M Expenses	26.68	56.84	58.73	
<b>Total</b>	<b>298.08</b>	<b>976.01</b>	<b>1,042.06</b>	
<b>Particulars</b>	<b>Asset-III</b>			
	<b>2016-17</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	<b>20.10.2016-9.3.2017</b>	<b>10.3.2017-31.3.2017</b>		
Depreciation	35.16	12.18	213.79	230.63
Interest on Loan	37.92	13.13	221.12	221.06
Return on Equity	39.12	13.55	237.84	256.57
Interest on Working Capital	4.27	1.42	24.41	25.50
O & M Expenses	34.81	10.86	186.20	192.40
<b>Total</b>	<b>151.27</b>	<b>51.14</b>	<b>883.35</b>	<b>926.16</b>
<b>Particulars</b>	<b>Asset-IV(a)</b>			
	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	
Depreciation	50.80	184.39	201.00	
Interest on Loan	52.98	183.27	185.38	
Return on Equity	56.60	205.44	223.96	
Interest on Working Capital	3.50	12.49	13.30	
O & M Expenses	0.00	0.00	0.00	
<b>Total</b>	<b>163.88</b>	<b>585.60</b>	<b>623.64</b>	

### Filing Fee and the Publication Expenses

62. 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.



### **License Fee and RLDC fees and Charges**

63. 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.

### **Sharing of Transmission Charges**

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

65. This order disposes of Petition No. 233/TT/2016.

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

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

**(A.K. Singhal)**  
Member

**(Gireesh B Pradhan)**  
Chairperson



**Annexure-I****CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN****Asset-I****(₹ in lakh)**

Sl. no.	Name of loan	Particulars	2016-17	2017-18	2018-19
1	SBI 10000 (01.05.2014)	Net opening loan	89.00	89.00	89.00
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-	-	
		Net Closing Loan	89.00	89.00	89.00
		Average Loan	89.00	89.00	89.00
		Rate of Interest	9.5500%	9.5500%	9.5500%
		Interest	8.50	8.50	8.50
		Rep Schedule			
2	Bond L	Net opening loan	12.50	12.50	12.50
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-		
		Net Closing Loan	12.50	12.50	12.50
		Average Loan	12.50	12.50	12.50
		Rate of Interest	8.4000%	8.4000%	8.4000%
		Interest	1.05	1.05	1.05
		Rep Schedule		12 equal instalments from 20.10.2018	
3	Bond LI	Net opening loan	1.50	1.50	1.50
		Add: Addition du. the period			
		Less: Repayment du. the period	-		-
		Net Closing Loan	1.50	1.50	1.50
		Average Loan	1.50	1.50	1.50
		Rate of Interest	8.4000%	8.4000%	8.4000%
		Interest	0.13	0.13	0.13
		Rep Schedule		12 equal instalments from 14.09.2019	
4	Proposed Loan 2016-17 (7.97%)	Net opening loan	24.19	24.19	24.19
		Add: Addition du. the period			
		Less: Repayment du. the period			
		Net Closing Loan	24.19	24.19	24.19
		Average Loan	24.19	24.19	24.19
		Rate of Interest	7.9700%	7.9700%	7.9700%
		Interest	1.93	1.93	1.93
		Rep Schedule			
4	Proposed Loan 2016-17 (7.97%)	Net opening loan	-	0.54	0.54
		Add: Addition du. the period	0.54		
		Less: Repayment du. the period			



		Net Closing Loan	0.54	0.54	0.54
		Average Loan	0.27	0.54	0.54
		Rate of Interest	7.9700%	7.9700%	7.9700%
		Interest	0.02	0.04	0.04
	Rep Schedule				
5	Proposed Loan 2016-17 (7.97%)	Net opening loan	-	-	0.36
		Add: Addition du. the period	-	0.36	
		Less: Repayment du. the period			
		Net Closing Loan	-	0.36	0.36
		Average Loan	-	0.18	0.36
		Rate of Interest	7.9700%	7.9700%	7.9700%
		Interest	-	0.01	0.03
	Rep Schedule				
	Gross Total	Net opening loan	127.19	127.73	128.09
		Add: Addition du. the period	0.54	0.36	0.00
		Less: Repayment du. the period	0.00	0.00	0.00
		Net Closing Loan	127.73	128.09	128.09
		Average Loan	127.46	127.91	128.09
		Rate of Interest	9.1205%	9.1164%	9.1148%
		Interest	11.62	11.66	11.68

**Asset-II**

Sl. no.	Name of loan	Particulars	2016-17	2017-18	2018-19
1	SBI 2014-15	Net opening loan		126.00	126.00
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-	-	
		Net Closing Loan	126.00	126.00	126.00
		Average Loan	126.00	126.00	126.00
		Rate of Interest	9.3500%	9.3500%	9.3500%
		Interest	11.78	11.78	11.78
	Rep Schedule				
2	Bond L	Net opening loan	3.61	3.61	3.61
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-		
		Net Closing Loan	3.61	3.61	3.61
		Average Loan	3.61	3.61	3.61
		Rate of Interest	8.4000%	8.4000%	8.4000%
		Interest	0.30	0.30	0.30



	Rep Schedule	12 equal instalments from 20.10.2018			
3	Bond LIII	Net opening loan	900.00	900.00	900.00
		Add: Addition du. the period			
		Less: Repayment du. the period	-		-
		Net Closing Loan	900.00	900.00	900.00
		Average Loan	900.00	900.00	900.00
		Rate of Interest	8.1300%	8.1300%	8.1300%
		Interest	73.17	73.17	73.17
	Rep Schedule				
4	Bond LIV	Net opening loan	100.00	100.00	100.00
		Add: Addition du. the period			
		Less: Repayment du. the period			
		Net Closing Loan	100.00	100.00	100.00
		Average Loan	100.00	100.00	100.00
		Rate of Interest	7.9700%	7.9700%	7.9700%
		Interest	7.97	7.97	7.97
	Rep Schedule				
4	Bond LV	Net opening loan	50.05	50.16	74.68
		Add: Addition du. the period	0.11	24.52	
		Less: Repayment du. the period			
		Net Closing Loan	50.16	74.68	74.68
		Average Loan	50.11	62.42	74.68
		Rate of Interest	7.5500%	7.5500%	7.5500%
		Interest	3.78	4.71	5.64
	Rep Schedule				
	Gross Total	Net opening loan	1179.66	1179.77	1204.29
		Add: Addition du. the period	0.11	24.52	0.00
		Less: Repayment du. the period	0.00	0.00	0.00
		Net Closing Loan	1179.77	1204.29	1204.29
		Average Loan	1179.72	1192.03	1204.29
		Rate of Interest	8.2229%	8.2160%	8.2092%
		<b>Interest</b>	<b>97.01</b>	<b>97.94</b>	<b>98.86</b>

### Asset-III

Sl. no.	Name of loan	Particulars	2016-17	2017-18	2018-19
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1	SBI 2014-15	Net opening loan	223.47	223.47	223.47
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-	-	
		Net Closing Loan	<b>223.47</b>	<b>223.47</b>	<b>223.47</b>
		Average Loan	223.47	223.47	223.47
		Rate of Interest	9.3500%	9.3500%	9.3500%
		<b>Interest</b>	<b>20.89</b>	<b>20.89</b>	<b>20.89</b>
	Rep Sheduled				
2	<b>Bond L</b>	Net opening loan	146.90	146.90	146.90
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-		
		Net Closing Loan	<b>146.90</b>	<b>146.90</b>	<b>146.90</b>
		Average Loan	146.90	146.90	146.90
		Rate of Interest	8.4000%	8.4000%	8.4000%
		<b>Interest</b>	<b>12.34</b>	<b>12.34</b>	<b>12.34</b>
	<b>Rep Sheduled</b>	<b>12 equal instalments from 20.10.2018</b>			
3	<b>Bond LI</b>	Net opening loan	750.00	750.00	750.00
		Add: Addition du. the period			
		Less: Repayment du. the period	-		-
		Net Closing Loan	<b>750.00</b>	<b>750.00</b>	<b>750.00</b>
		Average Loan	750.00	750.00	750.00
		Rate of Interest	8.4000%	8.4000%	8.4000%
		<b>Interest</b>	<b>63.00</b>	<b>63.00</b>	<b>63.00</b>
	<b>Rep Sheduled</b>				
4	Bond LIII	Net opening loan	547.75	547.75	547.75
		Add: Addition du. the period			
		Less: Repayment du. the period			
		Net Closing Loan	<b>547.75</b>	<b>547.75</b>	<b>547.75</b>
		Average Loan	547.75	547.75	547.75
		Rate of Interest	8.1300%	8.1300%	8.1300%
		<b>Interest</b>	<b>44.53</b>	<b>44.53</b>	<b>44.53</b>
	<b>Rep Sheduled</b>				
4	Bond LIV	Net opening loan	200.00	200.00	200.00
		Add: Addition du. the period	-	-	
		Less: Repayment du. the period			
		Net Closing Loan	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>
		Average Loan	200.00	200.00	200.00
		Rate of Interest	7.9700%	7.9700%	7.9700%
		<b>Interest</b>	<b>15.94</b>	<b>15.94</b>	<b>15.94</b>
	<b>Rep Sheduled</b>				



5	Bond LV	Net opening loan	311.45	312.21	339.69
		Add: Addition du. the period	0.76	27.48	
		Less: Repayment du. the period			
		Net Closing Loan	<b>312.21</b>	<b>339.69</b>	<b>339.69</b>
		Average Loan	311.83	325.95	339.69
		Rate of Interest	7.5500%	7.5500%	7.5500%
		<b>Interest</b>	<b>23.54</b>	<b>24.61</b>	<b>25.65</b>
	<b>Rep Sheduled</b>				
	<b>Gross Total</b>	Net opening loan	2179.57	2180.33	2207.81
		Add: Addition du. the period	0.76	27.48	0.00
		Less: Repayment du. the period	0.00	0.00	0.00
		Net Closing Loan	2180.33	2207.81	2207.81
		Average Loan	2179.95	2194.07	2207.81
		<b>Rate of Interest</b>	<b>8.2685%</b>	<b>8.2639%</b>	<b>8.2594%</b>
		Interest	180.25	181.32	182.35

#### Asset-IV(a)

(Rs. in lakh)

Sl. no.	Name of loan	Particulars	2016-17	2017-18	2018-19
1	SBI 2014-15	Net opening loan	292.34	292.34	292.34
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-	-	
		Net Closing Loan	<b>292.34</b>	<b>292.34</b>	<b>292.34</b>
		Average Loan	292.34	292.34	292.34
		Rate of Interest	9.3500%	9.3500%	9.3500%
		<b>Interest</b>	<b>27.33</b>	<b>27.33</b>	<b>27.33</b>
	Rep Sheduled				
2	<b>Bond L</b>	Net opening loan	71.30	71.30	71.30
		Add: Addition du. the period	-		
		Less: Repayment du. the period	-		
		Net Closing Loan	<b>71.30</b>	<b>71.30</b>	<b>71.30</b>
		Average Loan	71.30	71.30	71.30
		Rate of Interest	8.4000%	8.4000%	8.4000%
		<b>Interest</b>	<b>5.99</b>	<b>5.99</b>	<b>5.99</b>
	<b>Rep Sheduled</b>		<b>12 equal instalments from 20.10.2018</b>		
3	<b>Bond LI</b>	Net opening loan	14.00	14.00	14.00
		Add: Addition du. the period			
		Less: Repayment du. the	-		-



		period			
		Net Closing Loan	<b>14.00</b>	<b>14.00</b>	<b>14.00</b>
		Average Loan	14.00	14.00	14.00
		Rate of Interest	8.4000%	8.4000%	8.4000%
		<b>Interest</b>	<b>1.18</b>	<b>1.18</b>	<b>1.18</b>
	<b>Rep Sheduled</b>				
4	Bond LIII	Net opening loan	200.00	200.00	200.00
		Add: Addition du. the period			
		Less: Repayment du. the period			
		Net Closing Loan	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>
		Average Loan	200.00	200.00	200.00
		Rate of Interest	8.1300%	8.1300%	8.1300%
		<b>Interest</b>	<b>16.26</b>	<b>16.26</b>	<b>16.26</b>
	<b>Rep Sheduled</b>				
4	Bond LIV	Net opening loan	200.00	200.00	200.00
		Add: Addition du. the period	-	-	
		Less: Repayment du. the period			
		Net Closing Loan	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>
		Average Loan	200.00	200.00	200.00
		Rate of Interest	7.9700%	7.9700%	7.9700%
		<b>Interest</b>	<b>15.94</b>	<b>15.94</b>	<b>15.94</b>
	<b>Rep Sheduled</b>				
4	Bond LV	Net opening loan	834.74	834.74	834.74
		Add: Addition du. the period			
		Less: Repayment du. the period			
		Net Closing Loan	<b>834.74</b>	<b>834.74</b>	<b>834.74</b>
		Average Loan	834.74	834.74	834.74
		Rate of Interest	7.5500%	7.5500%	7.5500%
		<b>Interest</b>	<b>63.02</b>	<b>63.02</b>	<b>63.02</b>
	<b>Rep Sheduled</b>				
5	Proposed Loan 2016-17 (7.36%)	Net opening loan	206.85	208.37	231.64
		Add: Addition du. the period	1.52	23.27	
		Less: Repayment du. the period			
		Net Closing Loan	<b>208.37</b>	<b>231.64</b>	<b>231.64</b>
		Average Loan	207.61	220.01	231.64
		Rate of Interest	7.3600%	7.3600%	7.3600%
		<b>Interest</b>	<b>15.28</b>	<b>16.19</b>	<b>17.05</b>
	<b>Rep Sheduled</b>				
	<b>Gross Total</b>	Net opening loan	1819.23	1820.75	1844.02
		Add: Addition du. the period	1.52	23.27	0.00
		Less: Repayment du. the period	0.00	0.00	0.00
		Net Closing Loan	1820.75	1844.02	1844.02



		Average Loan	1819.99	1832.39	1844.02
		<b>Rate of Interest</b>	<b>7.9672%</b>	<b>7.9631%</b>	<b>7.9593%</b>
		Interest	145.00	145.91	146.77

