

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 85/TT/2015

Coram:

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

Date of Order : 24.02.2017

In the matter of:

Approval of transmission tariff for 8 Nos. assets under Eastern Region Strengthening Scheme-III (ERSS-III) in Eastern Region for 2014-19 tariff block 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. North Bihar Power Distribution Company Limited (NBPDC),
Vidyut Bhawan, Bailey Road,
Patna-800 001
2. South Bihar Power Distribution Company Limited (SBPDCL),
Vidyut Bhawan, Bailey Road,
Patna-800 001
3. West Bengal State Electricity Distribution Company Limited,
Bidyut Bhawan, Bidhan Nagar,
Block DJ, Sector-II, Salt Lake City, Kolkatta-700 091
4. Grid Corporation of Orissa Limited,
Shahid Nagar, Bhubaneswar-751 007



5. Damodar Valley Corporation,
DVC Tower, Maniktala, Civic Centre,
VIP Road, Kolkatta-700 054
6. Power Department,
Government of Sikkim, Gangtok-737 101
7. Jharkhand State Electricity Board,
In front of Main Secretariat,
Doranda, Ranchi-834 002

For petitioner : Shri M.M. Mondal, PGCIL
Shri S.K. Venkatesan, PGCIL
Shri S.S. Raju, PGCIL
Shri Upendra Pande, PGCIL
Ms. Sangeeta Edwards, PGCIL

For respondents: None

ORDER

The present petition is filed by Power Grid Corporation of India Limited (PGCIL) seeking approval of transmission charges for 8 Nos. assets (hereinafter referred to as “transmission assets”) under Eastern Region Strengthening Scheme-III (ERSS-III) in Eastern Region, 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 was entrusted with the implementation of transmission system associated with Eastern Region Strengthening Scheme-III (ERSS-III) covering establishment of 7 nos. of new 400 kV sub-stations, 2 in Bihar viz. Lakhisarai and Banka, 2 in Jharkhand viz. Daltonganj and Chaibasa and 3 in Orissa viz. Bolangir, Keonjhar and Sundargarh. The scheme was discussed and agreed in the meeting of



Standing Committee on Power System Planning in Eastern Region held on 8.11.2008 at Bhubaneswar and 8thERPC meeting dated 21.11.2008 followed by special meeting of Eastern Regional Power Committee held on 30.12.2008 at Kolkata.

3. The Investment Approval (IA) and expenditure sanction for the transmission system was accorded by the Board of Directors of the petitioner vide Memorandum No. C/CP/ERSS-III dated 7.7.2010 at an estimated cost of ₹127280 lakh including an IDC of ₹8152 lakh (based on 1st Qtr.of 2010 price level).The petitioner vide affidavit dated 19.1.2016 submitted the Revised Cost Estimate (RCE) of the project for ₹173110 lakh including IDC of ₹15131 lakh at October, 2015 price level. The project was scheduled to be commissioned within 28 months from the date of IA. Therefore, the scheduled date of commissioning of the transmission system was 6.11.2012.The scope of work covered under the scheme is broadly as follows:-

Transmission Lines:

- (a) Sasaram-Daltonganj 400 kV D/C Line;
- (b) Mendhasal-Uttara 400 kV D/C Line;
- (c) LILO of Kahalgaon-Biharsharif 400 kV D/C Line (1st line) at Lakhisarai;
- (d) LILO of Kahalgaon-Biharsharif 400 kV D/C Line (2nd line) at Banka;
- (e) LILO of Meramundali-Jeypore 400 kV S/C Line at Bolangir;
- (f) LILO of Rengali-Baripada 400 kV S/C Line at Keonjhar;
- (g) LILO of one circuit of Baripada-Mendhasal 400 kV D/C Line at Dubri (OTPCL);
- (h) LILO of both circuits of Jamshedpur-Rourkela 400 kV D/C Transmission Line at Chaibasa (out of the two LILOs bussing of one LILO at Chaibasa,



the 2nd LILO would be routed through Chaibasa but presently not bussed at Chaibasa);

Sub-stations:

- (a) 2x315 MVA, 400/220 kV sub-station at Daltonganj (New);
- (b) 2x315 MVA, 400/220 kV sub-station at Lakhisarai (New);
- (c) 2x315 MVA, 400/220 kV sub-station at Banka (New);
- (d) 2x315 MVA, 400/220 kV sub-station at Bolangir (New);
- (e) 2x315 MVA, 400/220 kV sub-station at Keonjhar (New);
- (f) 2x315 MVA, 400/220 kV sub-station at Chaibasa (New);
- (g) 2x315 MVA, 400/220 kV sub-station at Uttara (New);
- (h) Extension of 400 kV Sasaram Sub-station (POWERGRID) and 400 kV Dubri (OTPCL) and Mendhasal Sub-station (OTPCL).

4. The following assets are covered in the instant petition:-

Particulars
Asset-1: Combined assets of LILO of Ckt.-I of 400 kV D/C Kahalgaon-Biharsharif at Lakhisarai alongwith associated bays; 400/132 kV 200 MVA ICT-I at Lakhisarai Sub-station alongwith associated bays; 400 kV 80 MVAR Bus Reactor alongwith associated bays at Lakhisarai Sub-station and 2 nos. 132 kV line bays at Lakhisarai Sub-station
Asset-2: 400/132 kV 200 MVA ICT-II alongwith associated bays at Lakhisarai Sub-station
Asset-3: LILO of Ckt.-II of 400 kV D/C Kahalgaon-Biharsharif at Lakhisarai alongwith associated bays with 2 nos. of 50 MVAR line reactor
Asset-4: 2 nos. 132 Line bays at Lakhisarai Sub-station
Asset-5: LILO of one circuit of Jamshedpur-Rourkela 400 kV D/C Transmission line at Chaibasa
Asset-6: 2 nos. 220 kV Line bays at Chaibasa
Asset-7: 80 MVAR Bus Reactor alongwith associated bay at Chaibasa Sub-station
Asset-8: 400/220 kV 315 MVA ICT-II alongwith associated bays at Chaibasa Sub-station



5. The petitioner initially claimed approval of the transmission charges from the actual/anticipated dates of commercial operation (COD) based on the Auditors' Certificates dated 31.10.2014 in respect of Assets-1, 2, 3, 4 and 7 and on the basis of Management Certificates in respect of Asset-5, 6 and 8 for expenditure incurred/projected to be incurred as on COD/anticipated COD and upto 31.3.2019. Later, the petitioner vide affidavit dated 30.12.2015 submitted the Auditors' Certificates alongwith revised tariff forms in respect of Assets-5, 6 and 8.

6. Annual fixed Charges was granted for the above mentioned transmission assets vide order dated 29.4.2015 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations, subject to proviso (iii) and (iv) of the said Regulation. The petitioner has claimed annual fixed charges for the instant assets as under:-

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	322.11	384.15	431.13	454.60	454.60
Interest on Loan	396.12	439.20	459.64	448.99	409.48
Return on equity	395.47	466.85	521.11	548.24	548.24
Interest on Working Capital	44.66	49.36	52.81	54.41	54.19
O & M Expenses	344.43	355.87	367.68	379.90	392.50
Total	1502.79	1695.43	1832.37	1886.14	1859.01
Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	63.13	96.85	114.35	123.11	123.11
Interest on Loan	85.74	122.40	135.02	135.28	124.29
Return on equity	81.47	122.45	142.96	153.22	153.22
Interest on Working Capital	9.47	13.03	14.36	14.98	14.92
O & M Expenses	75.38	93.45	96.55	99.76	103.07
Total	315.19	448.18	503.24	526.35	518.61
Asset-3					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	65.59	131.41	146.73	154.40	154.40
Interest on Loan	80.33	151.90	158.03	154.00	140.58
Return on equity	78.30	156.11	173.76	182.58	182.58
Interest on Working Capital	9.42	17.73	18.88	19.43	19.39



O & M Expenses	77.06	137.82	142.40	147.13	152.00
Total	310.70	594.97	639.80	657.54	648.95
Asset-4					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	8.19	23.99	30.66	34.01	34.01
Interest on Loan	14.39	37.00	43.08	44.45	41.46
Return on equity	13.83	36.82	44.92	48.98	48.98
Interest on Working Capital	2.52	5.69	6.29	6.61	6.66
O & M Expenses	30.49	62.30	64.36	66.50	68.72
Total	69.42	165.80	189.31	200.55	199.83
Asset-5					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	44.17	154.53	180.95	191.17	191.17
Interest on Loan	52.50	174.82	191.97	187.99	171.37
Return on equity	50.84	177.72	208.30	220.13	220.13
Interest on Working Capital	5.77	19.16	21.11	21.78	21.66
O & M Expenses	43.00	135.46	139.96	144.61	149.39
Total	196.28	661.69	742.29	765.68	753.72
Asset-6					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	12.40	45.41	56.81	61.29	61.29
Interest on Loan	18.81	64.09	73.64	73.71	68.11
Return on equity	16.75	59.52	72.24	77.24	77.24
Interest on Working Capital	2.63	8.71	9.64	10.03	10.07
O & M Expenses	27.69	87.22	90.12	93.10	96.20
Total	78.28	264.95	302.45	315.37	312.91
Asset-7					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17.33	54.27	59.14	61.52	17.33
Interest on Loan	21.20	63.31	64.38	62.02	21.20
Return on equity	20.56	64.42	70.31	73.18	20.56
Interest on Working Capital	2.56	7.75	8.14	8.32	2.56
O & M Expenses	21.63	64.37	66.51	68.71	21.63
Total	83.28	254.12	268.48	273.75	83.28
Asset-8					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	27.50	105.92	125.11	132.54	132.54
Interest on Loan	33.59	122.85	137.37	135.60	123.93
Return on equity	32.58	125.42	149.22	158.48	158.48
Interest on Working Capital	4.01	14.00	15.52	16.07	16.00
O & M Expenses	33.62	105.91	109.43	113.06	116.81
Total	131.30	474.10	536.65	555.75	547.76



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

(₹ in lakh)

Particulars	Asset-1				
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	51.66	53.38	55.15	56.99	58.88
O & M expenses	28.70	29.66	30.64	31.66	32.71
Receivables	250.47	282.57	305.40	314.36	309.84
Total	330.83	365.61	391.19	403.01	401.43
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	44.66	49.36	52.81	54.41	54.19
Particulars	Asset-2				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	13.57	14.02	14.48	14.96	15.46
O & M expenses	7.54	7.79	8.05	8.31	8.59
Receivables	63.04	74.70	83.87	87.73	86.44
Total	84.15	96.51	106.40	111.00	110.49
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	11.36	13.03	14.36	14.99	14.92
Particulars	Asset-3				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	20.01	20.67	21.36	22.07	22.80
O & M expenses	11.11	11.49	11.87	12.26	12.67
Receivables	89.62	99.16	106.63	109.59	108.16
Total	120.74	131.32	139.86	143.92	143.63
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	16.30	17.73	18.88	19.43	19.39
Particulars	Asset-4				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	9.05	9.35	9.65	9.98	10.31
O & M expenses	5.03	5.19	5.36	5.54	5.73
Receivables	22.89	27.63	31.55	33.43	33.31
Total	36.97	42.17	46.56	48.95	49.35
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	2.52	5.69	6.29	6.61	6.66
Particulars	Asset-5				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	19.67	20.32	20.99	21.69	22.41
O & M expenses	10.93	11.29	11.66	12.05	12.45
Receivables	99.75	110.28	123.72	127.61	125.62
Total	130.35	141.89	156.37	161.35	160.48



Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	5.77	19.16	21.11	21.78	21.66
Particulars	Asset-6				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.66	13.08	13.52	13.97	14.43
O & M expenses	7.04	7.27	7.51	7.76	8.02
Receivables	39.78	44.16	50.41	52.56	52.15
Total	59.48	64.51	71.44	74.29	74.60
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	2.63	8.71	9.64	10.03	10.07
Particulars	Asset-7				
	2014-15 (pro-rata)	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	-	9.34	9.66	9.98	10.31
O & M expenses	-	5.19	5.36	5.54	5.73
Receivables	-	39.97	42.35	44.75	45.63
Total	-	54.50	57.37	60.27	61.67
Interest Rate	-	13.50%	13.50%	13.50%	13.50%
Interest	-	2.56	7.74	8.14	8.33
Particulars	Asset-8				
	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	15.38	15.89	16.41	16.96	17.52
O & M expenses	8.54	8.83	9.12	9.42	9.73
Receivables	66.73	79.02	89.44	92.63	91.29
Total	90.65	103.74	114.97	119.01	118.54
Interest Rate	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	4.01	14.00	15.52	16.07	16.00

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

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

10. This order has been issued after considering petitioner's affidavits dated 17.12.2015, 30.12.2015, 21.1.2016 and 19.5.2016.



Date of commercial operation(COD)

11. The petitioner initially in the petition claimed tariff for Assets-1, 2, 3, 4, 5, 6 and 8 on the basis of actual COD and tariff of Asset-7 on anticipated COD. Later, vide affidavit dated 17.12.2015, it was submitted that Asset-7 was commissioned on 26.11.2015.

The date of commercial operation claimed by the petitioner are as follows:-

Particulars	COD
Asset-1	1.4.2014
Asset-2	1.6.2014
Asset-3	3.9.2014
Asset-4	29.9.2014
Asset-5	3.12.2014
Asset-6	3.12.2014
Asset-7	26.11.2015
Asset-8	3.12.2014

12. The petitioner vide affidavit dated 21.1.2016 has submitted that the Lakhisarai (PG)-Lakhisarai [Bihar State Transmission Company Limited (BSPTCL)] 132 kV D/C Line and Lakhisarai (PG)-Jamui (BSPTCL) 132 kV D/C Line of BSPTCL was planned for safe evacuation of the power from the 400/132 kV Lakhisarai Sub-station (PGCIL). The 2X200 MVA, 400/132kV ICTs and 4 Nos. of 132 kV line bays for termination of these lines at Lakhisarai Sub-station was under the scope of the petitioner. The petitioner has submitted that vide letters dated 30.7.2013, 28.8.2013, 10.10.2013 and 16.1.2014, it intimated the construction status of 132 kV bays along with other assets at Lakhisarai Sub-station and requested BSPTCL to expedite the construction work of evacuation scheme from Lakhisarai Sub-station matching with the construction of Lakhisarai Sub-station and associated transmission system. The status of the Lakhisarai Sub-station (PGCIL) was discussed in 94th OCC meeting held on 21.2.2014



of Eastern Region. In this meeting, the petitioner informed that the assets of Lakhisarai Sub-station will be commissioned by February/March, 2014 progressively. In subsequent OCC meetings, the readiness of Lakhisarai Sub-station was also informed by the petitioner and requested for timely completion of downstream network matching with completion schedule of Lakhisarai Sub-station. The petitioner has submitted that it continuously followed with the BSPTCL for timely commissioning of downstream network matching with the Lakhisarai Sub-station (PG). However, it was not feasible to delay the petitioner's project further to match with the downstream as the said time extensions would have a bearing on the project cost. The petitioner has accordingly commissioned Assets-1, 2 3 and 4 at Lakhisarai Sub-station on 1.4.2014, 1.6.2014, 3.9.2014 and 29.9.2014 respectively.

13. As regards Chaibasa Sub-station, the petitioner has submitted that the downstream system network is in the scope of JSEB (Jharkhand State Electricity Board) and 2X315 MVA,400/220 kV ICTs and 4 Nos. of 220 kV line bays for termination of 220 kV lines at Chaibasa Sub-station of the petitioner is executed by the petitioner. The petitioner has submitted that vide letter dated 10.5.2014, it had intimated the construction status of 220 kV bays along with other assets at the Chaibasa Sub-station and requested JSEB to expedite the construction work of evacuation scheme from Chaibasa Sub-station, matching with the construction of Chaibasa Sub-station and associated transmission system. The petitioner has continuously followed up with the JSEB for timely commissioning of downstream network matching with the Chaibasa Sub-station (PGCIL). However, it is not feasible to delay the petitioner's project further



to match with the downstream as these time extensions would have a bearing on the project cost. The petitioner has submitted that it accordingly commissioned Assets 5, 6 and 8 on 3.12.2014 and Asset 7 on 26.11.2015. The petitioner prayed for approval of COD of Assets 1 to 8 under proviso (ii) of clause 3 of Regulation 4 of the 2014 Tariff Regulations.

14. The petitioner was directed to submit the status of commissioning of the downstream lines of Lakhisarai Sub-station and Chaibasa Sub-station. In response, the petitioner vide affidavit dated 17.12.2015 and 21.1.2016 has submitted that Ckt-I of 132 kV D/C Lakhisarai (PG)-Lakhisarai [Bihar State Power Holding Company Limited (BSPHCL)] was charged on 27.9.2014, the remaining Ckt. of 132 kV D/C Lakhisarai (PG)-Lakhisarai (BSPHCL) was charged on 5.10.2015, the Ckt-I of 132 kV D/C Lakhisarai (PG)-Jamui (BSPHCL) was charged on 27.9.2014 and remaining Ckt. of 132 kV D/C Lakhisarai (PG)-Jamui (BSPHCL) was charged on 5.10.2015. The petitioner has submitted that the part of downstream network was commissioned on 27.9.2014 and the rest was commissioned on 5.10.2015. Hence, the complete downstream network corresponding to Lakhisarai Sub-station was available with effect from 5.10.2015. The 132 kV line bays, corresponding to transmission lines commissioned on 27.9.2014, were commissioned on 29.9.2014 i.e. after the commissioning of part of downstream network. Therefore, no COD approval has been sought for these bays (i.e. Asset-4) under proviso (ii) of clause 3 of Regulation 4 of the 2014 Tariff Regulations.



15. As regards the Chaibasa Sub-station, during the hearing on 16.4.2015, the petitioner was directed to submit the status of the downstream lines for which 220 kV bays at Chaibasa Sub-station has been claimed. In response, the petitioner has submitted that the downstream system network connected with 400/220 kV Chaibasa Sub-station is under the scope of JSEB and out of 4 Nos. of 220 kV downstream line bays, 2 Nos. were commissioned with effect from 3.12.2014 and are part of instant petition (Asset-6). The other 2 Nos. 220 kV line bays are not commissioned and are part of Petition No. 278/TT/2015 (Asset 5). The 220 kV Chaibasa (PG)-Chaibasa [Jharkhand Urja Sancharan Nigam Limited (JUSNL)] D/C line was charged on 26.12.2015. However, further downstream from 220 kV Chaibasa Sub-station (JUSNL) being executed by JUSNL is not yet ready and it is anticipated to be commissioned during 2016-17. Another 220 kV LILO of Ramchandrapur-Joda line at 220 kV Chaibasa Sub-station (JUSNL) is also still under construction.

16. The petitioner has submitted that due to non-readiness of downstream system, it is not able to provide service for reasons not attributable to the petitioner, its suppliers or contractors. The petitioner has submitted that the instant case qualifies for approval of the date of commercial operation under the second proviso (ii) to clause (3) of Regulation 4 of the 2014 Tariff Regulations.

17. As per 2014 Tariff Regulations, in case of non-readiness of downstream system, the transmission licensee shall approach the Commission for approval of the COD of such transmission system. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-



“4. Date of Commercial Operation: The date of commercial operation of a generating station or unit or block thereof or a transmission system or element thereof shall be determined as under:

xxx]

(3) Date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:

Provided that:

(i) where the transmission line or Sub-station is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavour to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:

(ii) in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof.”

18. We have considered the submissions of the petitioner. It is observed that the petitioner was ready with its assets and was not able to put them into service as the downstream assets of Lakhisarai Sub-station and Chaibasa Sub-station, executed by BSPTCL and JUSNL, were not ready, as such, the assets were not put into regular service for reasons not attributable to the petitioner, its contractors or suppliers. Accordingly, the COD of Assets 1 to 4 and 5 to 8 are allowed as prayed by the petitioner.

Capital Cost

19. 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; 39

(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.

20. The petitioner has submitted that the details of the approved apportioned capital cost, capital cost as on the date of commercial operation (COD) and estimated additional capital expenditure incurred or projected to be incurred for the instant transmission assets vide affidavit dated 30.12.2015. The details as submitted by the petitioner and considered for the purpose of tariff are as follows:-



(₹ in lakh)

Particulars	Apportioned approved cost	Cost as on COD	Additional capital expenditure Incurred/projected			Total estimated completion cost
			COD to 31.3.2015	2015-16	2016-17	
Asset-1	9337.02	5969.93	1504.53	922.32	922.29	9319.07
Asset-2	2874.90	1416.64	490.37	348.69	348.71	2604.41
Asset-3	3268.05	2103.69	399.94	299.94	299.94	3103.51
Asset-4	835.24	373.21	183.74	137.80	137.80	832.55
Asset-5	4032.47	2623.16	112.68	603.60	402.38	3741.82
Asset-6	1152.00	869.03	19.31	254.73	169.83	1312.90
Asset-7	1197.47	999.21	48.92	97.96	97.91	1244.00
Asset-8	2715.00	1518.76	388.53	471.92	314.62	2693.83

Cost over-run

21. The total estimated completion cost of ₹24852.09 lakh is within the approved apportioned cost of ₹25412.15. Accordingly, there is no cost over-run in case of the instant assets.

Time over-run

22. The project was scheduled to be commissioned within 28 months from the date of investment approval of 7.7.2010. Accordingly, the scheduled COD works out to 6.11.2012, against this the instant assets were commissioned after the scheduled date. Thus, there is time over-run in the commissioning of all the instant assets. The details of the date of actual commissioning and time over-run in case of the instant assets are as under:-

Particulars	Scheduled COD	COD	Time over-run
Asset-1	6.11.2012	1.4.2014	16 Months 23 Days
Asset-2		1.6.2014	18 Months 23 days
Asset-3		3.9.2014	21 Months 26 Days
Asset-4		29.9.2014	22 Months 21 Days
Asset-5		3.12.2014	24 Months 26 Days
Asset-6		3.12.2014	24 Months 26 Days
Asset-7		26.11.2015	36 Months 19 Days
Asset-8		3.12.2014	24 Months 26 Days



23. During the hearing on 16.4.2015, the petitioner was directed to submit the details of time over-run and chronology of activities. In response, the petitioner vide affidavit dated 17.12.2015 has submitted that the time over-run is due to delay in acquisition of land and delay in commencement of civil works is due to rain. The petitioner has submitted the following reasons for time over-run.

Time over-run due to delay in acquisition of land

Lakhisarai

(i) There is a time over-run of 16 to 22 months in commissioning of Assets-1, 2, 3 and 4. The reason for time over-run is mainly due to delay in acquisition of sub-station land, which was inordinately delayed and also due to onset of monsoon season. Request for acquisition of land was submitted on 2.11.2009, around 9 months before the investment approval, however the actual possession of land was obtained in August, 2012 after around 33 months.

Chronology of events related to land acquisition is mentioned below:-

Srl. No.	Activity	Date
1	Request for acquisition of land submitted	2.11.2009
2	Demand Note for depositing 80% cost received	24.11.2009
3	80% Cost of land deposited by POWERGRID	8.3.2010
4	Section IV notification by State Government	20.1.2011
5	Section VI notification by State Government	21.1.2011
6	Section VII issued by appropriate authority	19.5.2011
7	Award made under Section IX & XI	11.7.2011 to 10.8.2011
8	Finalization of rate	21.11.2011
9	Preparation of Final estimate	15.2.2012
10	Revised Demand note received	16.2.2012
11	Deposit of balance revised cost	23.2.2012
12	Certificate of possession received	31.3.2012
13	Actual possession of land	August, 2012



(ii) Even after getting certificate for possession of land on 31.3.2012, local people and affected land owners continued their objection and obstructed the land acquisition process. The regular communication and follow up with the district authority was made through letters dated 16.5.2012, 5.7.2012 and 13.8.2012 regarding the problems in acquiring the sub-station land.

(iii) After rigorous follow up and regular persuasion of District Administration, actual possession of the land could be obtained in August, 2012 against the L2 Network schedule of March, 2011, i.e. with a delay of around 17-18 months.

(iv) To expedite commissioning of the project, after getting the possession of land in August, 2012, activities of soil investigation, site development, site leveling, design & engineering, procurement of equipment/materials, civil works, installation of equipment/materials, testing and commissioning were taken up and were completed by squeezing the completion schedules to the extent possible. Time period of execution of various activities was reduced by extending the working hours, wherever possible and critical issues related to supply and erection were resolved expeditiously to save time. Even after prioritizing the commissioning of different elements, it was not possible to commission all the elements at a time and therefore the commissioning of various elements was staggered.

Chaibasa

(i) There is time over-run of 22 to 24 months in commissioning of assets related to Chaibasa Sub-station and the delay is mostly attributed to land acquisition for Chaibasa Sub-station. The request for acquisition of around 40 acre land (22 acre



Government land and around 18 acre private land) near Mauza Anchu on the Chaibasa-Saraikela road was submitted to Deputy Commissioner, Chaibasa on 31.8.2009, almost one year prior to investment approval to facilitate timely completion of the Project.

(ii) However, the process of land acquisition, for the land initially identified by PGCIL near village Anchu could not be taken up by the authority due to objection and stiff resistance of local villagers. An alternate land near village Ulijharee was suggested by the Authority and suitability of the land was sought from PGCIL vide letter 12.8.2010. Suitability of the land was communicated by PGCIL vide letter dated 16.9.2010. However, acquisition of this land was also delayed, since as per the records of the revenue authority, a proposal was earlier sent by them for acquisition of this land for Rungata Mines Limited.

(iii) In the meantime, the matter was pursued by the petitioner with the state government for expeditious acquisition of land. Later, a meeting was held in the office of Principal Secretary (Revenue) Government of Jharkhand on 2.6.2011 wherein it was informed that the subject land is already identified for Rungata Mines Limited, and therefore requested district authorities to expedite the process of acquisition of the 2nd alternative land identified by the petitioner. The petitioner had to put up a fresh request for acquisition for 2nd alternate land which was adjacent to the earlier proposed land vide its letter dated 21.5.2011. This alternate land comprised of 8.44 acre Government land and 38.86 acre of private land. The procedure for acquisition of private land under Jharkhand Voluntary Land



Acquisition Rule, 2010 required agreement with Land Acquisition Office of Jharkhand and individual land owners.

(iv) The acquisition process inter-alia required preparation of upto date land holding details for entering into agreement as per the Rule. For Government land the proposal was initially started for transferring of land to the petitioner as freehold land. However, later, the government land was transferred to the petitioner on lease basis and lease amount to be paid yearly. The process for both these lands (Government and Private) was initiated simultaneously by Revenue Authority. In spite of regular follow-up at different levels of state government, the possession of land could be handed over to the petitioner in April, 2013.

A chronology of events related to land acquisition

Private land

Srl. No.	Activity	Date
1	Request for acquisition of land submitted	31.8.2009
2	Letter of SDO regarding difficulty in acquisition	12.8.2010
3	Acceptance of alternate land conveyed to SDO, Chaibasa	16.9.2010
4	Fresh proposal submitted by PGCIL for second alternate	19.5.2011
5	Meeting in the office of Principal Secretary (Rev)	2.6.2011
6	Section IV notification by State Government	3.6.2011
7	80% Cost of land deposited by PGCIL	20.8.2011
8	Gram Sabha at Anchu Village in presence of State Government officials	14.12.2011
9	Section VI notification by State Government	16.6.2012
10	Agreement signed with land owners	17.7.2012
11	20% cost of land deposited by PGCIL	14.2.2013
12	Payment disbursement to land owners	30.3.2013
13	Date of issue of certificate of possession	22.4.2013



Government land

Srl. No.	Activity	Date
1	Request for acquisition of land submitted	31.8.2009
2	Letter of SDO regarding difficulty in acquisition	12.8.2010
3	Acceptance of alternate land conveyed to SDO, Chaibasa	16.9.2010
4	Fresh proposal submitted by PGCIL for second alternate land	19.5.2011
5	Meeting in the office of Principal Secretary (Rev)	2.6.2011
6	80% Cost of land deposited by PGCIL	12.8.2011
7	NOC issued by Government of Jharkhand	9.9.2011
8	Lease Agreement between PGCIL and Government of Jharkhand	18.6.2013

Delay in commencement of civil works due to rain

24. The physical possession of land was obtained in August, 2012 when full monsoon was active in the area and execution of land filling and boundary wall was severely affected due to water accumulation and intensive rains. Full-fledged work could be started only after October, 2012 and around 2 to 3 months were lost on this account.

Delay in diversion of JUSNL Transmission Line:-

25. The 220 kV transmission line (Ramchandrapur-Joda) of Jharkhand Urja Sancharan Nigam Limited (JUSNL, formerly JSEB) was passing through the 400/220 kV Chaibasa Sub-station of the petitioner. This line was so located that construction work of few elements of Chaibasa Sub-station was not possible without diversion of line. The land for Chaibasa Sub-station was acquired in April, 2013 (Private land) and June, 2013 (Government land). However, this issue of passing over of JUSNL transmission line over Chaibasa Sub-station land was identified and correspondences were made to the JUSNL as early as August, 2012 and requests were made to local JUSNL officials



several times. After the diversion of line, the works related to 80 MVAR Bus Reactor was completed in November, 2015. Thus, the process of diversion of JUSNL Transmission Line from Chaibasa Sub-station took almost around 24 months (in addition to land acquisition delay which took almost around 44-45 months).

26. The petitioner has submitted that the time over-run was beyond its control and requested to condone the time over-run in commissioning of instant assets.

27. We have considered the submissions of the petitioner. As regards Assets-1, 2, 3 and 4, there is delay of 16 months 23 days in Asset-1, 18 months and 23 days in Asset-2, 21 months and 26 days in Asset-3 and 22 months and 21 days in Asset-4 respectively. The petitioner started the process of land acquisition on 2.11.2009 and the certificate of possession was received on 31.3.2009, however, the actual possession of land was received only in August, 2012. The total time taken for acquisition of land is 33 months. On perusal of information submitted by the petitioner, it is observed that the petitioner approached the District Land Acquisition Officer for acquisition of land on 2.11.2009 that is 9 months before the Investment Approval. The petitioner vide letter dated 4.8.2010 requested Land Acquisition Officer, Lakhisarai for acquisition of land at Lakhisarai for construction of 400 kV Sub-station at Lakhisarai. Thereafter, the petitioner vide letter dated 2.12.2010, after a delay of approximately 4 months, deposited four crore rupees towards land acquisition and requested the DC, Lakhisarai for early issue of Section IV and VI notifications. The petitioner, vide letter dated 24.9.2011, requested DC, Lakhisari for allotment of land and followed it up with letters dated 21.10.2011, 31.10.2011, 15.11.2011, 21.12.2011, 30.12.2011, 23.2.2012 and 31.3.2012 to District



Land Acquisition Officer/DM/SDM. The petitioner obtained certificate of possession of land on 31.3.2012. The petitioner also wrote various letters to District Magistrate regarding the land acquisition problems and the last such letter was on 26.9.2013. The time delay from 4.8.2010 to 26.9.2013 is 27 months 22 days. The petitioner has claimed delay of 2 to 3 months (August to October 2012) due to water accumulation and heavy rains. Rains during August to October 2012 are a normal phenomenon. Though the petitioner has submitted the images of rain effected area, the petitioner has not submitted any valid documentary evidence to substantiate that rain and water accumulation was abnormal. Hence, the delay due to rain and water accumulation is not condoned. It is observed that the petitioner wrote a letter to the District Land Acquisition Officer on 9.8.2010 and the next letter was written on 2.12.2010 to the District Officer requesting for land for sub-station in Lakhisarai. The details of the period of time over-run condoned and not condoned in the case of Lakhisarai are given below:-

9.8.2010 to 2.12.2010	The petitioner wrote a letter to the District Land Acquisition Officer on 9.8.2010 and the next letter was written on 2.12.2010 to the District Officer requesting for land for sub-station in Lakhisarai. The petitioner has not explained intervening period between 9.8.2010 to 2.12.2010. Hence, the time over-run of 3 months 23 days is not condoned.
2.12.2010 to 31.3.2012	The petitioner received the certificate of possession of land on 31.3.2012. It took 15 months 29 days to get the letter of possession of land. Normally, land acquisition process involves various steps like social impact assessment, expert group appraisal, preliminary notification, declaration to award, and award to possession of land by collector which the petitioner is expected to factor in the time schedule. The petitioner has not explained the period between 2.12.2010 to 31.3.2012 and it is difficult to assess the time taken at various stages of land acquisition. As such, we are not inclined to condone time over-run of 12 months on this account. Accordingly, out of 15 months 29



	days period, 3 months 29 days is condoned.
31.3.2012 to Actual possession of Land i.e. August, 2012.	Though the certificate of possession of land was received on 31.3.2012, the actual possession of the land was received only in August, 2012. It took 4 months to get possession of land. During this period, the petitioner took various steps to get possession of land and we are of the view that the delay in getting actual possession of land is beyond the control of the petitioner. Accordingly, the time delay of 4 months is condoned.
August, 2012 to 26.9.2013	There is time over-run of 13 months 25 days. The petitioner has not submitted any documentary evidence for delay between August, 2012 to 27.5.2013. Hence, the period from August, 2012 to 27.5.2013 is not condonable. The time period from 28.5.2013 to 26.9.2016 (4 months 28 days):- Regarding this period, the petitioner has submitted two letters dated 28.5.2013 and 26.9.2013 written to District Administration, to establish that it was pursuing the matter. On perusal of the letter dated 26.9.2013 submitted by the petitioner, it is observed that out of 1.5 acres of additional land required, 0.55 acres of land was handed over in May, 2013 and 0.95 acres of land was not handed over to the petitioner. Hence, the time over-run from the period 28.5.2013 to 26.9.2016 (4 months 28 days) is not attributable to the petitioner and is condoned.
Time over-run condoned	Time over-run of 12 months and 27 days is condoned in case of Assets-1, 2, 3 and 4.

28. There is a time over-run of 24 months 26 days in case of Assets-5, 6 and 8. The petitioner has submitted that the process of acquisition of private land started on 31.8.2009. A letter from SDO regarding difficulty in acquisition of land was received on 12.8.2010. Fresh proposal for alternate land was submitted on 19.5.2011 and agreement signed with land owner on 17.7.2012 and possession of land was received on 22.4.2013. The process of acquisition of government land started simultaneously on



31.8.2009 and land was acquired on 18.6.2013. The process of acquisition of alternate land started on 31.8.2009 and acceptance for alternate land was given on 16.9.2010 by the petitioner and rigorous efforts made by the petitioner resulted in getting possession of private alternate land on 22.4.2013. The process took 44 months to acquire the land. On perusal of information submitted by the petitioner, it is observed that the petitioner approached Land Acquisition Officer, Chaibasa for acquisition of land (both private and government land) on 31.8.2009 that is 10 months 6 days before the Investment Approval. Thereafter, the petitioner vide letter dated 7.10.2010 wrote a letter to Chairman, JUSNL with regard to acquisition of land at Chaibasa. The petitioner vide letter dated 19.5.2011 requested DC, Chaibasa for alternate land. The petitioner also wrote various letters dated 31.8.2009, 12.8.2010, 25.6.2010, 23.9.2010, 9.10.2010, 23.10.2010, 8.6.2011, 29.6.2011, 27.7.2011, 17.8.2011, 9.9.2011, 4.6.2012, 20.4.2013, 19.6.2013 to District Land Acquisition Officer, Chaibasa/Dy. Commissioner, Chaibasa. The petitioner obtained certificate of possession of land on 4.6.2012. The petitioner wrote letter to District Administration on land acquisition and the last letter in this regards was on 31.1.2013. The details of the period of time over condoned and not condoned in the case of Chaibasa are given below:-

<p>7.7.2010 to 19.5.2011 (10 months 12 days)</p>	<p>Time period 7.7.2010 to 19.5.2011. The petitioner has submitted the copy of the correspondence made with the Deputy Commissioner, Chaibasa vide letters dated 25.6.2010, 22.10.2010 regarding land acquisition for construction of 400/220 kV sub-station at Chaibasa. Therefore, the time over-run of 3 months 15 days is condoned. However, the petitioner has not explained the period between 22.10.2010 to 19.5.2011 (6 Months 27 days) and hence we are of the view that the delay 6 months 27</p>
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	days is attributable to the petitioner and hence it is not condoned. Accordingly, out of 10 months and 12 days, 3 months and 15 days is condoned.
19.5.2011 to 22.4.2013 (23 months 17 days)	<p>Time period – 19.5.2011 to 22.4.2013. The petitioner has submitted documentary evidence explaining the action taken during the period 19.5.2011 and 20.8.2011 (3 months). Accordingly, the time over-run of 3 months is condoned.</p> <p>The petitioner has not explained the period from 14.12.2011 to 16.6.2012(6 months 2 days) through any evidence and hence the time over-run of 6 months 2 days is not condoned.</p> <p>The petitioner has submitted that an agreement was signed with land owners on 17.7.2012. However, the petitioner has not submitted any documentary evidence. The period from 16.6.2012 to 14.2.2013 has not been explained by the petitioner. Hence, we are not inclined to condone time over-run of 7 months 29 days on this account.</p> <p>The time taken for acquisition of government land i.e. up to 31.1.2013, is subsumed in the time taken for acquisition of private land.</p>
Time over-run condoned	The time over-run of 6 months and 15 days is condoned in case of Assets-4, 5 and 8.

29. There is a time over of 36 months and 19 days in case of Asset-7. The petitioner has submitted that time over-run of 24 months (August 2012 to August 2014) was on account of time taken in diversion of Ramchandrapur-Joda line of JUSNL which was passing over Chaibasa Sub-station which affected the construction at location of 80 MVAR Bus Reactor. It is observed that the petitioner took approximately 47 months (August 2009 to June 2013) for land acquisition. The delay beyond investment approval is 10 months 76 days. The delay of 6 months and 15 days due to land acquisition is condoned. The time over-run of 14 months (from July 2013 to August 2014) which is



due to diversion of transmission line of JUSNL is beyond the control of petitioner and hence it is condoned. The details of time over-run condoned and not condoned in case of the instant assets are summarized below:-

Assets	Time over-run in commissioning of asset	Time over-run condoned	Time over-run not condoned
Asset-1	16 months 23 days	12 months 27 days	3 months 26 days
Asset-2	18 months 23 days	12 months 27 days	5 months 26 days
Asset-3	21 months 26 days	12 months 27 days	8 months 29 days
Asset-4	22 months 21 days	12 months 27 days	9 months 24 days
Asset-5	24 months 26 days	6 months 15 days	18 months 11 days
Asset-6	24 months 26 days	6 months 15 days	18 months 11 days
Asset-7	36 months 19 days	20 months 15 days	16 months 04 days
Asset-8	24 months 26 days	6 months 15 days	18 months 11 days

Interest During Construction (IDC)

30. The petitioner, vide affidavit dated 30.12.2015, has claimed the following Interest During Construction (IDC) discharged up to scheduled date of commercial Operation (SCOD)/ actual date of commercial operation (COD) as below:-

Asset	IDC discharged up to SCOD	IDC discharged from SCOD to COD	Total IDC discharged upto COD and claimed in tariff
Asset-1	281.28	169.75	451.03
Asset-2	80.91	54.60	135.51
Asset-3	112.75	88.48	201.23
Asset-4	19.67	16.03	35.70
Asset-5	169.30	150.89	320.19
Asset-6	41.56	37.04	78.60
Asset-7	61.08	80.00	141.08
Asset-8	87.51	78.00	165.51

31. IDC has been worked out based on the loans deployed for the assets as per Form-9C of the petition on cash basis assuming that the petitioner has not made any default in the payment of interest. Loans designated as "Proposed Loan" have not been



considered for IDC calculations. Further, IDC for the period of time over not condoned is not allowed. Thus, the IDC allowable on cash basis up to the SCOD plus the period of delay condoned for the instant assets is given below:-

(₹ in lakh)

Assets	IDC allowable date	IDC worked out upto IDCD allowable date	IDC disallowed	Total IDC discharged upto COD and claimed in tariff
Asset-1	3.12.2013	451.03	-	451.03
Asset-2	3.12.2013	135.51	-	135.51
Asset-3	3.12.2013	181.31	19.92	201.23
Asset-4	3.12.2013	21.94	13.76	35.70
Asset-5	21.5.2013	81.42	238.77	320.19
Asset-6	21.5.2013	19.00	59.60	78.60
Asset-7	21.7.2013	79.08	62.00	141.08
Asset-8	21.5.2013	32.08	133.43	165.51

Incidental Expenses During Construction (IEDC)

32. The petitioner, vide affidavit dated 30.12.2015, has claimed the following Incidental Expenditure during Construction (IEDC) discharged up to SCOD/COD:-

(₹ in lakh)

Asset	IEDC discharged up to SCOD	IEDC discharged from SCOD to COD	Total IEDC discharged upto COD and claimed in tariff
Asset-1	164.38	99.20	263.58
Asset-2	39.03	26.34	65.37
Asset-3	54.38	42.68	97.06
Asset-4	9.48	7.73	17.21
Asset-5	66.35	59.14	125.49
Asset-6	22.77	20.30	43.07
Asset-7	23.32	30.55	53.87
Asset-8	38.99	34.75	73.74

33. Total IEDC claimed is within the percentage on Hard Cost as indicated in the Abstract Cost Estimate. We have adopted similar approach in Petition No.109/TT/2013. The time over-run in case of the instant assets is partially condoned as discussed



above. IEDC assumed to be discharged up to the “IEDC allowable date” (SCOD plus the period of time over-run condoned) is worked out on pro-rata basis for the instant assets as given below:-

(₹ in lakh)						
Asset	IDC allowable date	IEDC discharged up to SCOD	Pro-rata IEDC worked out from SCOD to IEDC allowable date	Total pro-rata IEDC deemed to be discharged up to IEDC allowable date	IEDC dis-allowed	Total IEDC discharged upto COD and claimed in tariff
Asset-1	03.12.2013	164.38	76.14	240.52	23.06	263.58
Asset-2	03.12.2013	39.03	18.07	57.10	8.27	65.37
Asset-3	03.12.2013	54.38	25.15	79.53	17.53	97.06
Asset-4	03.12.2013	9.48	4.38	13.86	3.35	17.21
Asset-5	21.05.2013	66.35	15.37	81.72	43.77	125.49
Asset-6	21.05.2013	22.77	5.28	28.05	15.02	43.07
Asset-7	21.07.2013	23.32	17.05	40.37	13.50	53.87
Asset-8	21.05.2013	38.99	9.03	48.02	25.72	73.74

Initial Spares

34. 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 triung 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 breakup of head wise IDC & IEDC in its tariff application.”

35. The petitioner has claimed the following Initial Spares in respect of the instant assets, corresponding to Transmission Lines and Sub-Stations:-

(₹ in lakh)			
Asset	Transmission Lines	Sub-station	Total
Asset-1	35.62	115.22	150.84
Asset-2	-	60.19	60.19
Asset-3	7.03	54.75	61.78
Asset-4	-	9.47	9.47
Asset-5	19.97	42.00	61.97
Asset-6	-	40.00	40.00
Asset-7	-	40.35	40.35
Asset-8	-	84.00	84.00

36. Initial spares in respect of all the assets, except Asset-7 are within the normative limits specified in Regulation 13 of the 2014 Tariff Regulations. As such, Initial Spares in respect of Asset-7, corresponding to sub-station is adjusted while determining tariff of the asset. Accordingly, the Initial Spares claimed by the petitioner for Assets-1 to 6 and 8 are allowed. The details of the Initial Spares claimed, allowed and disallowed in respect of Asset-7 is given below:-

(₹ in lakh)				
Total capital cost (Plant and machinery cost excluding IDC, IEDC, land cost and cost of civil works)	Initial spares claimed	Ceiling limit as per the 2014 Tariff Regulations	Initial spares worked out	Excess initial spares disallowed
938.29	40.35	4.00%	37.41	2.94



37. The details of the capital cost admitted for the purpose of transmission tariff considering the IEDC and IDC and initial spares is given below :-

(₹ in lakh)

Assets	Capital cost considered for the purpose of tariff before scrutiny of IEDC/IDC & initial spares, if any, as on COD) (a)	Disallowed IDC (b)	Disallowed IEDC (c)	Disallowed excess initial spares (d)	Capital cost considered for the purpose of tariff after scrutiny of IEDC/IDC & Initial Spares, if any, as on COD (e)=(a)-(b)-(c)-(d)
Asset-1	5969.93	0.00	23.06	-	5946.87
Asset-2	1416.64	0.00	8.27	-	1408.37
Asset-3	2103.69	19.92	17.53	-	2066.24
Asset-4	373.21	13.76	3.35	-	356.10
Asset-5	2623.16	238.77	43.77	-	2340.62
Asset-6	869.03	59.60	15.02	-	794.41
Asset-7	999.21	62.00	13.50	2.94	920.78
Asset-8	1518.76	133.43	25.72	-	1359.61

Additional Capitalisation and Decapitalisation

38. 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.



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

“cut-off date” means 31st 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 31st March of the year closing after three years of the year of commercial operation”.

40. The cut-off date in the case of instant transmission assets is 31.3.2017.

41. The petitioner has claimed the following Additional Capital Expenditure for the period from COD to 31.3.2019, as per Regulation 14(1) of the 2014 Tariff Regulations:-

(₹ in lakh)

Assets	2014-15	2015-16	2016-17	Total
Asset-1	1504.53	922.32	922.29	3349.14
Asset-2	490.37	348.69	348.71	1187.77
Asset-3	399.94	299.94	299.94	999.82
Asset-4	183.74	137.80	137.80	459.34
Asset-5	112.68	603.60	402.38	1118.66
Asset-6	19.31	254.73	169.83	443.87
Asset-7	48.92	97.96	97.91	244.79
Asset-8	388.53	471.92	314.62	1175.07

42. In case of Asset-6 and Asset-7, the capital cost claimed by the petitioner is more than the apportioned approved cost. Hence, the petitioner’s claim is restricted to the apportioned approved cost. Additional capital expenditure relating for the 2016-17 for the Asset-6 has been reduced by ₹86.28 lakh. However, after adjustment of IDC/IEDC and Initial Spares, the capital cost of Asset-7 is within the apportioned approved cost. The additional capital expenditure claimed during 2014-19 is towards balance and retention payment and within cut-off date and accordingly it is allowed. Therefore, the capital cost incurred as on COD and additional capital expenditure incurred/projected to be incurred have been allowed. The details in this regard are tabulated as below:-



(₹ in lakh)

Assets	Capital Cost allowed as on COD	Additional Capital expenditure (actual / proposed) allowed			Total estimated capital cost allowed as on 31.3.2017
		2014-15	2015-16	2016-17	
Asset-1	5946.87	1504.53	922.32	922.29	9296.01
Asset-2	1408.37	490.37	348.69	348.71	2596.14
Asset-3	2066.24	399.94	299.94	299.94	3066.06
Asset-4	356.10	183.74	137.80	137.80	815.44
Asset-5	2340.62	112.68	603.60	402.38	3459.28
Asset-6	794.41	19.31	254.73	83.55	1152.00
Asset-7	920.78	48.92	97.96	97.91	1165.57
Asset-8	1359.61	388.53	471.92	314.62	2534.68

Debt- Equity ratio

43. Clause 3 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(3) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2014, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered”

44. The capital cost as 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 and 31.3.2014 considered on normative basis are as follows:-

(₹ in lakh)

Asset-1	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	4,162.81	70.00	6507.21	70.00
Equity	1,784.06	30.00	2788.81	30.00
Total	5946.87	100.00	9296.01	100.00
Asset-2	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	985.86	70.00	1817.29	70.00
Equity	422.51	30.00	778.84	30.00
Total	1408.37	100.00	2596.14	100.00
Asset-3	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	1446.37	70.00	2146.24	70.00
Equity	619.87	30.00	919.82	30.00



Total	2066.24	100.00	3066.06	100.00
Asset-4	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	249.27	70.00	570.81	70.00
Equity	106.83	30.00	244.63	30.00
Total	356.10	100.00	815.44	100.00
Asset-5	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	1,638.43	70.00	2421.49	70.00
Equity	702.19	30.00	1037.79	30.00
Total	2340.62	100.00	3459.28	100.00
Asset-6	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	556.09	70.00	806.40	70.00
Equity	238.32	30.00	345.60	30.00
Total	794.41	100.00	1152.00	100.00
Asset-7	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	644.55	70.00	815.90	70.00
Equity	276.24	30.00	349.67	30.00
Total	920.78	100.00	1165.57	100.00
Asset-8	As on COD		As on 31.3.2014	
	Amount	%	Amount	%
Debt	951.73	70.00	1774.28	70.00
Equity	407.88	30.00	760.40	30.00
Total	1359.61	100.00	2534.68	100.00

Debt – equity ratio for the additional capital expenditure has been considered in the ratio of 70:30.

Return on equity

45. Clause (1) and (2) of Regulation 24 and Clause (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.”

46. The petitioner has submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate as per the above regulations. The petitioner has further submitted that the grossed up RoE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

47. The Return on Equity allowed are given as under:-

(₹ in lakh)

Asset- 1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	1784.06	2235.42	2512.12	2788.81	2788.81
Addition due to Additional Capitalisation	451.36	276.70	276.69	0.00	0.00
Closing Equity	2235.42	2512.12	2788.81	2788.81	2788.81
Average Equity	2009.74	2373.77	2650.46	2788.81	2788.81
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	394.11	465.50	519.76	546.88	546.88
Asset- 2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	422.51	569.62	674.23	778.84	778.84
Addition due to Additional Capitalisation	147.11	104.61	104.61	0.00	0.00
Closing Equity	569.62	674.23	778.84	778.84	778.84
Average Equity	496.07	621.92	726.53	778.84	778.84
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%



Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	81.07	121.96	142.47	152.73	152.73
Asset- 3					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	619.87	739.85	829.84	919.82	919.82
Addition due to Additional Capitalisation	119.98	89.98	89.98	0.00	0.00
Closing Equity	739.85	829.84	919.82	919.82	919.82
Average Equity	679.86	784.85	874.83	919.82	919.82
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	76.71	153.91	171.55	180.38	180.38
Asset- 4					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	106.83	161.95	203.29	244.63	244.63
Addition due to Additional Capitalisation	55.12	41.34	41.34	0.00	0.00
Closing Equity	161.95	203.29	244.63	244.63	244.63
Average Equity	134.39	182.62	223.96	244.63	244.63
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	13.29	35.81	43.92	47.97	47.97
Asset - 5					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	702.19	735.99	917.07	1037.79	1037.79
Addition due to Additional Capitalisation	33.80	181.08	120.71	0.00	0.00
Closing Equity	735.99	917.07	1037.79	1037.79	1037.79
Average Equity	719.09	826.53	977.43	1037.79	1037.79
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	45.97	162.08	191.67	203.51	203.51
Asset - 6					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	238.32	244.11	320.53	345.60	345.60
Addition due to Additional Capitalisation	5.79	76.42	25.07	0.00	0.00
Closing Equity	244.11	320.53	345.60	345.60	345.60
Average Equity	241.22	282.32	333.07	345.60	345.60
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%



Return on Equity (Pre Tax)	15.42	55.36	65.31	67.77	67.77
Asset-7					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	-	276.24	290.91	320.30	349.67
Addition due to Additional Capitalisation		14.68	29.39	29.37	0.00
Closing Equity		290.91	320.30	349.67	349.67
Average Equity		283.57	305.61	334.99	349.67
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)		19.35	59.93	65.69	68.57
Asset-8					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	407.88	524.44	666.02	760.40	760.40
Addition due to Additional Capitalisation	116.56	141.58	94.39	0.00	0.00
Closing Equity	524.44	666.02	760.40	760.40	760.40
Average Equity	466.16	595.23	713.21	760.40	760.40
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	29.80	116.72	139.86	149.11	149.11

48. 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.

49. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. 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.

Interest on loan

50. Regulation 26 of the 2014 Tariff Regulations are provides 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 65 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 decapitalization 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 66 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.”

51. The petitioner’s entitlement to interest on loan has been calculated as per the provisions of Regulation 26 of the 2014 Tariff Regulations as detailed below:-

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



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

(c) 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.

(d) The petitioner has indicated Proposed Loan in Form-9C for the Asset-2, Asset-3, Asset-4 and Asset-7; for which they have not submitted any details. These loans have not been considered for working out Weighted Average Rate of Interest on Loan.

52. The petitioner has submitted that the interest on loan has been considered on the basis of rate prevailing as on respective CODs 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. 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.

53. Detailed calculations in support of interest on loan have been calculated as given at Annexure I to Annexure XIII of this order. The details of Interest on Loan calculated are as under:-



(₹ in lakh)

Asset-1					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	4162.81	5215.98	5861.61	6507.21	6507.21
Cumulative Repayment up to Previous year	0.00	320.88	703.82	1133.72	1587.11
Net Loan-Opening	4162.81	4895.10	5157.79	5373.48	4920.10
Addition due to Additional Capitalization	1053.17	645.62	645.60	0.00	0.00
Repayment during the year	320.88	382.94	429.90	453.39	453.39
Net Loan-Closing	4895.10	5157.79	5373.48	4920.10	4466.71
Average Loan	4528.95	5026.44	5265.64	5146.79	4693.40
Weighted Avg. Rate of Interest on Loan	8.7164%	8.7130%	8.7074%	8.7037%	8.7048%
Interest	394.76	437.96	458.50	447.96	408.55
Asset-2					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	985.86	1329.11	1573.20	1817.29	1817.29
Cumulative Repayment up to Previous year	0.00	62.77	159.18	273.10	395.77
Net Loan-Opening	985.86	1266.35	1414.02	1544.19	1421.52
Addition due to Additional Capitalization	343.26	244.08	244.10	0.00	0.00
Repayment during the year	62.77	96.41	113.92	122.67	122.67
Net Loan-Closing	1266.35	1414.02	1544.19	1421.52	1298.85
Average Loan	1126.10	1340.18	1479.11	1482.86	1360.19
Weighted Avg. Rate of Interest on Loan	9.0137%	9.0187%	9.0168%	9.0091%	9.0187%
Interest	84.59	120.87	133.37	133.59	122.67
Asset-3					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	1446.37	1726.33	1936.29	2146.24	2146.24
Cumulative Repayment up to Previous year	0.00	64.18	193.60	338.36	490.78
Net Loan-Opening	1446.37	1662.15	1742.68	1807.89	1655.47
Addition due to Additional Capitalization	279.96	209.96	209.96	0.00	0.00
Repayment during the year	64.18	129.43	144.75	152.42	152.42
Net Loan-Closing	1662.15	1742.68	1807.89	1655.47	1503.05
Average Loan	1554.26	1702.42	1775.28	1731.68	1579.26
Weighted Avg. Rate of Interest on Loan	8.6992%	8.6955%	8.6860%	8.6794%	8.6807%
Interest	77.79	148.03	154.20	150.30	137.09
Asset-4					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	249.27	377.89	474.35	570.81	570.81



Cumulative Repayment up to Previous year	0.00	7.71	30.80	60.56	93.66
Net Loan-Opening	249.27	370.18	443.55	510.25	477.15
Addition due to Additional Capitalization	128.62	96.46	96.46	0.00	0.00
Repayment during the year	7.71	23.09	29.76	33.10	33.10
Net Loan-Closing	370.18	443.55	510.25	477.15	444.05
Average Loan	309.73	406.87	476.90	493.70	460.60
Weighted Avg. Rate of Interest on Loan	8.8193%	8.8193%	8.8106%	8.7998%	8.7996%
Interest	13.77	35.88	42.02	43.44	40.53
Asset-5					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	1638.43	1717.30	2139.82	2421.49	2421.49
Cumulative Repayment up to Previous year	0.00	39.79	180.19	346.13	522.29
Net Loan-Opening	1638.43	1677.52	1959.64	2075.36	1899.20
Addition due to Additional Capitalization	78.88	422.52	281.67	0.00	0.00
Repayment during the year	39.79	140.40	165.95	176.16	176.16
Net Loan-Closing	1677.52	1959.64	2075.36	1899.20	1723.03
Average Loan	1657.97	1818.58	2017.50	1987.28	1811.11
Weighted Avg. Rate of Interest on Loan	8.7840%	8.7705%	8.7685%	8.7681%	8.7753%
Interest	47.48	159.50	176.90	174.25	158.93
Asset-6					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	556.09	569.60	747.91	806.40	806.40
Cumulative Repayment up to Previous year	0.00	11.24	52.92	103.52	156.32
Net Loan-Opening	556.09	558.37	694.99	702.88	650.08
Addition due to Additional Capitalization	13.52	178.31	58.49	0.00	0.00
Repayment during the year	11.24	41.69	50.60	52.80	52.80
Net Loan-Closing	558.37	694.99	702.88	650.08	597.29
Average Loan	557.23	626.68	698.94	676.48	623.69
Weighted Avg. Rate of Interest on Loan	9.5380%	9.5220%	9.5223%	9.5256%	9.5601%
Interest	17.33	59.67	66.55	64.44	59.62
Asset-7					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan		644.55	678.79	747.36	815.90
Cumulative Repayment up to Previous year		0.00	16.24	66.47	121.47
Net Loan-Opening		644.55	662.55	680.89	694.43
Addition due to Additional Capitalization		34.24	68.57	68.54	0.00



Repayment during the year		16.24	50.23	55.00	57.38
Net Loan-Closing		662.55	680.89	694.43	637.05
Average Loan		653.55	671.72	687.66	665.74
Weighted Avg. Rate of Interest on Loan		8.7794%	8.7727%	8.7601%	8.7483%
Interest		19.96	58.93	60.24	58.24
Asset-8					
Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	951.73	1223.70	1554.05	1774.28	1774.28
Cumulative Repayment up to Previous year	0.00	25.01	123.13	239.84	363.97
Net Loan-Opening	951.73	1198.69	1430.91	1534.44	1410.31
Addition due to Additional Capitalization	271.97	330.34	220.23	0.00	0.00
Repayment during the year	25.01	98.12	116.70	124.14	124.14
Net Loan-Closing	1198.69	1430.91	1534.44	1410.31	1286.17
Average Loan	1075.21	1314.80	1482.68	1472.38	1348.24
Weighted Avg. Rate of Interest on Loan	8.7648%	8.7014%	8.6968%	8.6877%	8.6768%
Interest	30.73	114.41	128.95	127.91	116.98

Depreciation

54. 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.”

55. The petitioner has claimed actual depreciation as a component of annual fixed charges. In our calculations, depreciation has been calculated in accordance with Regulation 27 of the 2014 Tariff Regulations extracted above. The instant transmission assets were put under commercial operation during 2014 and 2015 and 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. Accordingly, depreciation has been worked out on the basis of



capital expenditure as on COD and additional capitalization incurred / projected to be incurred thereafter, wherein depreciation for the first year has been calculated on pro rata basis for the year / part of year.

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

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	5946.87	7451.40	8373.72	9296.01	9296.01
Addition during 2014-15 due to Projected Additional Capitalisation	1504.53	922.32	922.29	0.00	0.00
Closing Gross Block	7451.40	8373.72	9296.01	9296.01	9296.01
Average Gross Block	6699.14	7912.56	8834.87	9296.01	9296.01
Rate of Depreciation	4.7899%	4.8396%	4.8660%	4.8772%	4.8772%
Depreciable Value	5484.84	6575.75	7404.83	7819.36	7819.36
Remaining Depreciable Value	5484.84	6254.87	6701.01	6685.63	6232.24
Depreciation	320.88	382.94	429.90	453.39	453.39
Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	1408.37	1898.74	2247.43	2596.14	2596.14
Addition during 2014-15 due to Projected Additional Capitalisation	490.37	348.69	348.71	0.00	0.00
Closing Gross Block	1898.74	2247.43	2596.14	2596.14	2596.14
Average Gross Block	1653.55	2073.08	2421.78	2596.14	2596.14
Rate of Depreciation	4.5551%	4.6508%	4.7039%	4.7251%	4.7251%
Depreciable Value	1293.68	1670.67	1984.00	2140.66	2140.66
Remaining Depreciable Value	1293.68	1607.90	1824.81	1867.56	1744.89
Depreciation	62.77	96.41	113.92	122.67	122.67
Asset-3					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	2066.24	2466.18	2766.12	3066.06	3066.06
Addition during 2014-15 due to Projected Additional Capitalisation	399.94	299.94	299.94	0.00	0.00
Closing Gross Block	2466.18	2766.12	3066.06	3066.06	3066.06
Average Gross Block	2266.21	2616.15	2916.09	3066.06	3066.06
Rate of Depreciation	4.9220%	4.9472%	4.9640%	4.9711%	4.9711%
Depreciable Value	1903.44	2217.99	2487.61	2622.41	2622.41
Remaining Depreciable Value	1903.44	2153.82	2294.00	2284.06	2131.64
Depreciation	64.18	129.43	144.75	152.42	152.42
Asset-4					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	356.10	539.84	677.64	815.44	815.44



Addition during 2014-15 due to Projected Additional Capitalisation	183.74	137.80	137.80	0.00	0.00
Closing Gross Block	539.84	677.64	815.44	815.44	815.44
Average Gross Block	447.97	608.74	746.54	815.44	815.44
Rate of Depreciation	3.4145%	3.7923%	3.9866%	4.0591%	4.0591%
Depreciable Value	267.02	411.33	535.01	596.86	596.86
Remaining Depreciable Value	267.02	403.62	504.22	536.30	503.20
Depreciation	7.71	23.09	29.76	33.10	33.10
Asset - 5					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	2340.62	2453.30	3056.90	3459.28	3459.28
Addition during 2014-15 due to Projected Additional Capitalisation	112.68	603.60	402.38	0.00	0.00
Closing Gross Block	2453.30	3056.90	3459.28	3459.28	3459.28
Average Gross Block	2396.96	2755.10	3258.09	3459.28	3459.28
Rate of Depreciation	5.0911%	5.0960%	5.0933%	5.0925%	5.0925%
Depreciable Value	2051.05	2373.24	2825.70	3006.68	3006.68
Remaining Depreciable Value	2051.05	2333.45	2645.51	2660.55	2484.39
Depreciation	39.79	140.40	165.95	176.16	176.16
Asset - 6					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	794.41	813.72	1068.45	1152.00	1152.00
Addition during 2014-15 due to Projected Additional Capitalisation	19.31	254.73	83.55	0.00	0.00
Closing Gross Block	813.72	1068.45	1152.00	1152.00	1152.00
Average Gross Block	804.06	941.08	1110.22	1152.00	1152.00
Rate of Depreciation	4.2859%	4.4295%	4.5575%	4.5831%	4.5831%
Depreciable Value	564.35	687.49	839.41	876.89	876.89
Remaining Depreciable Value	564.35	676.25	786.49	773.37	720.57
Depreciation	11.24	41.69	50.60	52.80	52.80
Asset-7					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block		920.78	969.70	1067.66	1165.57
Addition during 2014-15 due to Projected Additional Capitalisation		48.92	97.96	97.91	0.00
Closing Gross Block		969.70	1067.66	1165.57	1165.57
Average Gross Block		945.24	1018.68	1116.62	1165.57
Rate of Depreciation		4.9364%	4.9314%	4.9256%	4.9231%
Depreciable Value		789.37	855.41	943.44	987.46
Remaining Depreciable Value		789.37	839.17	876.97	865.99
Depreciation		16.24	50.23	55.00	57.38
Asset-8					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	1359.61	1748.14	2220.06	2534.68	2534.68
Addition during 2014-15 due to Projected Additional Capitalisation	388.53	471.92	314.62	0.00	0.00
Closing Gross Block	1748.14	2220.06	2534.68	2534.68	2534.68



Average Gross Block	1553.88	1984.10	2377.37	2534.68	2534.68
Rate of Depreciation	4.9371%	4.9454%	4.9089%	4.8975%	4.8975%
Depreciable Value	1292.28	1679.34	2033.06	2174.55	2174.55
Remaining Depreciable Value	1292.28	1654.33	1909.92	1934.71	1810.57
Depreciation	25.01	98.12	116.70	124.14	124.14

Operation & Maintenance Expenses (O&M Expenses)

57. Regulation 29(4) (a) of the 2014 Tariff Regulations specifies the norms for operation and maintenance expenses for the transmission system based on the type of sub-station and the transmission line. Order norms specified for instant assets are as follows:

Element	2014-15	2015-16	2016-17	2017-18	2018-19
D/C twin conductor conductor T/L (₹ lakh/km)	0.707	0.731	0.755	0.780	0.806
S/C twin conductor conductor T/L (₹lakh/km)	0.404	0.418	0.432	0.446	0.461
400 kV bay (₹lakh/bay)	60.30	62.30	64.37	66.51	68.71
220 kV bay (₹lakh/bay)	42.21	43.61	45.06	46.55	48.10
132 kV and below bay (₹lakh/bay)	30.15	31.15	32.18	33.25	34.36

58. As per Regulation 29(4) of 2014 Tariff Regulation, the allowable O&M Expenses are as under:-

Assets	2014-15	2015-16	2016-17	2017-18	2018-19
(₹ in lakh)					
Asset - 1					
31.626 km 400 kV S/C twin conductor LILO of 400 kV D/C Ckt-I Kahalgaon-Biharshariff (COD: 1.4.2014)	12.78	13.22	13.66	14.11	14.58
4 nos. 400 kV bays	241.20	249.20	257.48	266.04	274.84
3 nos. 400 kV bays	90.45	93.45	96.54	99.75	103.08
Total	344.43	355.87	367.68	379.90	392.50
Asset-2:	(pro-rata)				
1 no. 400 kV Lakhisarai ICT-II bay at Lakhisarai	50.25	62.30	64.37	66.51	68.71
1 no. 132 kV Lakhisarai ICT-	25.13	31.15	32.18	33.25	34.36



II bay at Lakhisarai					
Total	75.38	93.45	96.55	99.76	103.07
Asset-3:	(pro-rata)				
31.626 km 400 kV S/C twin conductor LILO of 400 kV D/C Ckt-II Kahalgaon-Biharshariff T/L	7.38	13.22	13.66	14.11	14.58
2 nos 400 kV bays one each for Lakhisarai- Kahalgaon-II and Lakhisarai- Biharshariff - II	69.68	124.60	128.74	133.02	137.42
Total	77.06	137.82	142.40	147.13	152.00
Asset-4:	(pro-rata)				
2 nos. 132 kV bays at Lakhisarai	30.49	62.30	64.36	66.50	68.72
Total	30.49	62.30	64.36	66.50	68.72
Asset-5:	(pro-rata)				
29.71 km 400 kV D/C twin conductor LILO of 400 kV D/C Ckt-I Jamshedpur-Rourkela T/L at Chaibasa.	3.44	10.86	11.22	11.59	11.97
2 nos 400 kV bays one each for Chaibasa – Jamshedpur and Chaibasa- Rourkela	39.56	124.60	128.74	133.02	137.42
Total	43.00	135.46	139.96	144.61	149.39
Asset-6:	(pro-rata)				
2 nos 220 kV bays one each for Chaibasa line-I & II	27.69	87.22	90.12	93.10	96.20
Total	27.69	87.22	90.12	93.10	96.20
Asset-7:					
	(pro-rata)				
1 no 400 kV bay for Chaibasa 80 MVAR bus reactor	20.91	62.30	64.37	66.51	68.71
Total	20.91	62.30	64.37	66.51	68.71
Asset-8:	(pro-rata)				
1 no. 400 kV bay for Chaibasa ICT-I	19.78	62.30	64.37	66.51	68.71
1 no. 220 kV bay for Chaibasa ICT-I	13.84	43.61	45.06	46.55	48.10
Total	33.62	105.91	109.43	113.06	116.81

59. 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.

60. 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

61. Clause 1 (c) 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:

(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 72 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;”

62. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). Accordingly, the interest on working capital determined is as under :

(i) Maintenance spares:

Maintenance spares have been worked out based on 15% of Operation and Maintenance expenses specified in Regulation 28.

(ii) O & M expenses:

O&M expenses have been considered for one month of the recommended O&M expenses by Engineering Division.

(iii) Receivables:

The receivables have been worked out on the basis 2 months of annual transmission charges as worked out above.

(₹ in lakh)

Asset-1					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	51.66	53.38	55.15	56.99	58.88
O & M expenses	28.70	29.66	30.64	31.66	32.71
Receivables	249.79	281.92	304.76	313.74	309.24
Total	330.16	364.96	390.55	402.39	400.82
Interest	44.57	49.27	52.72	54.32	54.11
Asset-2					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19



Maintenance Spares	13.57	14.02	14.48	14.96	15.46
O & M expenses	7.54	7.79	8.05	8.31	8.59
Receivables	62.64	74.28	83.44	87.28	86.00
Total	83.75	96.08	105.96	110.56	110.05
Interest	9.42	12.97	14.31	14.93	14.86
Asset-3					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	20.09	20.67	21.36	22.07	22.80
O & M expenses	11.16	11.49	11.87	12.26	12.67
Receivables	88.36	97.79	105.27	108.25	106.85
Total	119.61	129.95	138.49	142.58	142.32
Interest	9.29	17.54	18.70	19.25	19.21
Asset-4					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	9.07	9.35	9.65	9.98	10.31
O & M expenses	5.04	5.19	5.36	5.54	5.73
Receivables	22.40	27.12	31.05	32.93	32.82
Total	36.51	41.65	46.06	48.44	48.85
Interest	2.48	5.62	6.22	6.54	6.60
Asset-5					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	19.78	20.32	20.99	21.69	22.41
O & M expenses	10.99	11.29	11.66	12.05	12.45
Receivables	92.88	102.59	115.75	119.88	118.11
Total	123.65	134.20	148.41	153.62	152.96
Interest	5.44	18.12	20.04	20.74	20.65
Asset-6					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	12.74	13.08	13.52	13.97	14.43
O & M expenses	7.08	7.27	7.51	7.76	8.02
Receivables	37.94	42.06	46.96	47.92	47.64
Total	57.76	62.41	67.99	69.64	70.09
Interest	2.54	8.43	9.18	9.40	9.46
Asset-7					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares		9.01	9.35	9.66	9.98
O & M expenses		5.01	5.19	5.36	5.54
Receivables		37.79	39.79	42.17	43.10
Total		51.81	54.32	57.19	58.62
Interest		2.43	7.33	7.72	7.91
Asset-8					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	15.47	15.89	16.41	16.96	17.52
O & M expenses	8.59	8.83	9.12	9.42	9.73
Receivables	62.87	74.77	84.98	88.28	87.08
Total	86.93	99.48	110.51	114.66	114.34



Interest	3.83	13.43	14.92	15.48	15.44
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Transmission charges

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

(₹ in lakh)

Asset-1	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	320.88	382.94	429.90	453.39	453.39
Interest on Loan	394.76	437.96	458.50	447.96	408.55
Return on Equity	394.11	465.50	519.76	546.88	546.88
Interest on Working Capital	44.57	49.27	52.72	54.32	54.11
O & M Expenses	344.43	355.87	367.68	379.90	392.50
Total	1498.76	1691.53	1828.56	1882.46	1855.44
Asset-2	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	62.77	96.41	113.92	122.67	122.67
Interest on Loan	84.59	120.87	133.37	133.59	122.67
Return on Equity	81.07	121.96	142.47	152.73	152.73
Interest on Working Capital	9.42	12.97	14.31	14.93	14.86
O & M Expenses	75.38	93.45	96.55	99.76	103.07
Total	313.22	445.66	500.61	523.68	516.00
Asset-3	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	64.18	129.43	144.75	152.42	152.42
Interest on Loan	77.79	148.03	154.20	150.30	137.09
Return on Equity	76.71	153.91	171.55	180.38	180.38
Interest on Working Capital	9.29	17.54	18.70	19.25	19.21
O & M Expenses	77.06	137.82	142.40	147.13	152.00
Total	305.02	586.73	631.61	649.47	641.10
Asset-4	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	7.71	23.09	29.76	33.10	33.10
Interest on Loan	13.77	35.88	42.02	43.44	40.53
Return on Equity	13.29	35.81	43.92	47.97	47.97
Interest on Working Capital	2.48	5.62	6.22	6.54	6.60
O & M Expenses	30.49	62.30	64.36	66.50	68.72
Total	67.74	162.70	186.28	197.56	196.92
Asset-5	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	39.79	140.40	165.95	176.16	176.16
Interest on Loan	47.48	159.50	176.90	174.25	158.93
Return on Equity	45.97	162.08	191.67	203.51	203.51
Interest on Working Capital	5.44	18.12	20.04	20.74	20.65
O & M Expenses	43.00	135.46	139.96	144.61	149.39
Total	181.68	615.56	694.52	719.27	708.64
Asset-6	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	11.24	41.69	50.60	52.80	52.80



Interest on Loan	17.33	59.67	66.55	64.44	59.62
Return on Equity	15.42	55.36	65.31	67.77	67.77
Interest on Working Capital	2.54	8.43	9.18	9.40	9.46
O & M Expenses	27.69	87.22	90.12	93.10	96.20
Total	74.22	252.37	281.77	287.51	285.86

Asset-7	2015-16	2016-17	2017-18	2018-19
Depreciation	16.24	50.23	55.00	57.38
Interest on Loan	19.96	58.93	60.24	58.24
Return on Equity	19.35	59.93	65.69	68.57
Interest on Working Capital	2.43	7.33	7.72	7.91
O & M Expenses	20.91	62.30	64.37	66.51
Total	78.89	238.73	253.02	258.62

Asset-8	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	25.01	98.12	116.70	124.14	124.14
Interest on Loan	30.73	114.41	128.95	127.91	116.98
Return on Equity	29.80	116.72	139.86	149.11	149.11
Interest on Working Capital	3.83	13.43	14.92	15.48	15.44
O & M Expenses	33.62	105.91	109.43	113.06	116.81
Total	122.99	448.59	509.86	529.71	522.48

Filing Fee and the Publication Expenses

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

Licence Fee and RLDC fees and Charges

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



Regulations.

Service Tax

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

Deferred Tax Liability

67. The petitioner has sought recovery of deferred tax liability accrued before 1.4.2009 from the beneficiaries or long term consumers/DICs as and when materialized under Regulation 49 of the 2014 Tariff Regulations. However, the instant assets were commissioned after 1.4.2014 and hence the petitioner's prayer is infructuous.

Sharing of Transmission Charges

68. In the instant case, the assets of the petitioner have been commissioned but the associated downstream system is not ready due to which assets are not in regular service. Standing committee minutes and RPC minutes in this regard provide as under:-

- (a) Minutes of the meeting of the Standing Committee on Power system Planning in Eastern Region held on 8th November, 2008 :

“The following system strengthening works for ER were agreed



iii) 400/132 kV 2X200 MVA S/S near Lakhisarai/Jamalpur) with LILO of both circuits of one of the Kahalgaon-Biharsharif 400 kV D/C line and space provisions for 3rd transformer and 4 nos. of 132 kV line bays.

It was agreed by all the constituents that all the above regional system strengthening work in ER should be pooled with the regional system of ER for the purpose of sharing of transmission charges with corresponding share of generation of ER included in the total ISGS capacity for sharing of transmission charges”.

(b) Minutes of the 8th meeting Eastern Regional Power Committee (ERPC) held on 21st November, 2008 is as follows:

“B. System strengthening works in ER

1. 400/132 kV 2X200 MVA S/S near Lakhisarai/Jamalpur) with LILO of both circuits of one of the Kahalgaon-Biharsharif 400 kV D/C line and space provisions for 3rd transformer and 4 nos. of 132 kV line bays.

In the Standing committee, it was also agreed that all the above regional system strengthening work in ER should be pooled with the regional system of ER for the purpose of sharing of transmission charges with corresponding share of generation of ER included in the total ISGS capacity for Sharing of transmission charges.”

C) Minutes of the Special meeting of Eastern Regional power Committee held on 30th December, 2008 is as follows:

“It was also agreed that proposal under item no.6, “Suitable interconnection for providing 2nd feeder to Dubri 400 kV sub-station of OPTCL by making LILO of one circuit of 400 kV Baripada-Mendhasal D/C line”, and item no.7(i),”Establishment of 400/220 kV sub-station at Chaibasa by making LILO of both the circuit of 400 kV Rourkela-Jamshedpur D/C line”, would be considered under system strengthening works in ER and treated on regular basis”.

The following system strengthening works for ER were agreed:

- a) 400/132 kV,2X200 MVA S/S near Lakhisarai with LILO of both circuits of one of the Kahalgaon-Biharshariff 400 kV D/C line and space provision for 3rd transformer and 4 nos. of 132 kV line bays.
- b) 400/132 kV,2X200 MVA S/S at Banka in Bihar with LILO of both circuits of one of the Kahalgaon-Biharshariff D/C line (line not be LILOed at Lakhisarai S/S) and provision of 4 nos. of 132 kV line bays.
- j) Establishment of 400/220 kV Chaibasa sub-station and LILO of one circuit of 400 kV Rourkela-Jamshedpur line at 400/220 kV Chaibasa.

69. It is observed that assets covered in the instant petition have been established



under system strengthening scheme for Eastern Region and sharing for which has been mentioned to be under ER pool. However, it can be seen that Lakhisarai Sub-station is primarily for feeding power to Bihar and Chaibasa Sub-station is for feeding power to Jharkhand. In this instant case, the drawal feeders from these sub-stations have not been commissioned/delayed due to which assets commissioned by petitioner were not put to regular use.

70. The petitioner has stated that it has continuously followed up with BSPTCL for timely commissioning of downstream network. However, it is observed that the petitioner has relied on the OCC meeting held on 21.2.2014 and subsequent meetings in support of its contention on coordination while the assets were to be commissioned in April, 2014. We are of the view that coordination has to be done well in advance and not just two months before commissioning of the assets. Accordingly, the petitioner is directed to coordinate in advance with STUs regarding the commissioning of its assets.

71. The Commission had earlier dealt with the issue of mismatch in commissioning of the transmission system by an ISTS licensee and upstream/downstream system of STU in order dated 4.1.2017 in Petition No. 155/MP/2016. The relevant portion of the order is extracted hereunder:-

“16. The next question arises that who shall bear the transmission charges of the elements from the date of SCOD till the commissioning of downstream asset by PSPCL. The issue regarding payment of transmission charges from the date of SCOD was deliberated in Petition No. 43/MP/2016 and the Commission vide order dated 21.9.2016 laid down the principles for such cases and observed as under:

“24. A related issue arises as to how recovery of transmission charges of transmission licensee shall be made when the transmission system under TBCB is ready as on its scheduled COD as per the provisions of the TSA but cannot be made operational or put to use due to non-availability/ delay in upstream/



downstream system. In our view, ISTS licensee executing the project under TBCB should enter into Implementation Agreement with CTU, STU, inter-State transmission licensee, or the concerned LTTC, as the case may be, who are responsible for executing the upstream/ downstream transmission system and clearly provide the liability for payment of transmission charges in case of the transmission line or upstream/downstream transmission assets. In the absence of Implementation Agreement, the payment liability should fall on the entity on whose account an element is not put to use. For example, if the transmission line is ready but terminal bays belonging to other licensees are not ready, the owners of upstream and downstream terminal bays shall be liable to pay the charges to the owner of transmission line in the ratio of 50:50 till the bays are commissioned. In case one end bays are commissioned, the owner of other end bays shall be liable to pay the entire transmission charges of the transmission line till its bays are commissioned. The above principle shall be followed by CTU in all cases of similar nature in future.”

As per the decision quoted above, if the downstream system of the elements in present case is not commissioned by the schedule date of commercial operation, the owner of the downstream system shall be liable to pay the transmission charges of the transmission system till the downstream system is commissioned. However, the Commission, vide order dated 19.4.2016 in Petition No. 100/TT/2014, observed as under:

“8. The petitioner has prayed for approval of COD under Regulation 4(3)(ii) of 2014 Tariff Regulations. Petitioner has submitted that the downstream system which is the associated 220 kV feeder connections was to be implemented by the RVPNL. The petitioner has made several correspondences to the RVPNL for making the associated 220 kV feeder connections available; however the downstream system was not implemented at the time of filing of this petition. The petitioner, vide its affidavit dated 9.3.2015, has submitted that out of the 6 nos. 220 kV feeders to be implemented by the RVPNL, two feeders have been commissioned.

9. Clause 3 (ii) of Regulation 4 of the 2014 Tariff Regulations provides as under:-

“in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof.”

10. Further, the Commission in its order dated 5.8.2015 in Petition No. 11/SM/2014 in the matter of Non-compliance of Sections 38 and 39 of the Electricity Act, 2003 has stated that:-

“20. Keeping in view the mismatch between commissioning of transmission system by an ISTS licensee and upstream/downstream system of STU, we are of the view that ISTS transmission licensees and STUs should also sign such Implementation Agreement for development of ISTS and downstream system in



coordinated way to avoid any mismatch. We direct staff of the Commission to examine this aspect and propose necessary changes required in the 2014 Tariff Regulations to enable an ISTS licensees and STUs to enter into Implementation Agreement.

21. Since, the process of amendment would take time, we direct STUs to expedite downstream system in a time bound manner so that the transmission system already commissioned is put to use. PGCIL is at liberty to approach the Commission for invoking Regulation 3(12) (c) of the 2009 Tariff Regulations or Regulation 4(3) (ii) of 2014 Tariff Regulations, as the case may be, for COD of the completed assets. Concerned STU, who had requested for provision of downstream line bays in the various meetings of Standing Committee/RPC, shall bear the transmission charges till completion of downstream system."

11. PSPCL submitted that the DOCO certificate given in the petition does not certify that the associated 220kV bays have been charged/commissioned. Hence, as per the certification given in the DOCO certificate, the 220kV bays are not certified to be commissioned. In absence of 220kV line bays, this entire substation/project becomes idle since the purpose of this new substation is to supply 220kV lines in Kotputli area.

12. The petitioner has already completed its work covered under their scope of work but the concerned STU has not completed their scope of work i.e. the implementation of associated 220 kV feeder connections. The petitioner in this matter has made regular correspondence which is evident from the copy of letters submitted to the RVPNL. Petitioner vide affidavit dated 1.2.2016 has submitted the status of 220KV feeders of Kotputli Sub-station. It is evident from the submission that commissioning of 220 KV feeders have been delayed.

13. In view of the above we are approving the COD of the Asset A & B (i) as 1.4.2014 and Asset B (ii) as 10.9.2014 under the Regulation 4 (3(ii)) of the 2014 Tariff Regulations. However, as regards the recovery of the transmission charges is concerned, the transmission charges is to be recovered from the concerned State Discoms in accordance with the transmission service agreements as set forth in forthcoming paragraph of this order. 14. Annual Fixed charges for 2014-19 tariff period are being determined in the succeeding paragraphs."

In the light of the above, PSPCL shall be liable to bear transmission charges from SCOD/actual commissioning whichever is later till commissioning of downstream system post which the assets shall be considered under POC.

17. The petitioner is directed to provide YTC details of its assets to NLDC and CTU. NLDC shall provide the same to RPC for inclusion in RTAs. The assets shall be billed along with bill 1 under the provisions of the Central Electricity Regulatory Commission (Sharing of inter-State Transmission charges and losses), Regulations, 2010 as amended from time to time. ISTS licensees shall forward the details of YTC to be recovered as per formats provided under the Sharing Regulations to NLDC. ISTS licensees shall forward the details of entity along with YTC details from whom it needs to be recovered as per applicable order`s of the Commission to NLDC (only



in cases of bilateral billing due to non-availability of upstream/downstream system). Based on the input received from respective licensees and the Commission`s order, NLDC shall provide details of billing pertaining to non-availability of upstream/downstream system to respective RPCs for incorporation in RTAs for all cases of bilateral billing. On this basis, CTU shall issue the bills. The process given in this para shall be applicable to all future cases of similar nature and all concerned shall duly comply with the same.”

72. The assets have been planned to cater to the drawal requirements of Bihar and Jharkhand Discoms. However, due to non-availability of downstream assets the instant assets have not been put to regular use. Accordingly, we are of the view that the transmission charges of Assets-1 to 4 and Assets-5 to 8, from the COD till the commissioning of downstream network will be borne by the Bihar Discoms and by Jharkhand discoms respectively. After that 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.

73. Further, as directed in order dated 5.8.2015 in Petition 11/SM/2014, the petitioner and the STUs should sign implementation Agreement for development of ISTS and downstream system in coordinated way to avoid any mismatch.

74. This order disposes of Petition No. 85/TT/2015.

sd/-

(A.S. Bakshi)
Member

sd/-

(A.K. Singhal)
Member

sd/-

(Gireesh B. Pradhan)
Chairperson



Annexure-I**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET I**

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXI					
	Gross loan opening	300.00	300.00	300.00	300.00	300.00
	Cumulative Repayment upto DOCO/previous year	25.00	50.00	75.00	100.00	125.00
	Net Loan-Opening	275.00	250.00	225.00	200.00	175.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	25.00	25.00	25.00	25.00	25.00
	Net Loan-Closing	250.00	225.00	200.00	175.00	150.00
	Average Loan	262.50	237.50	212.50	187.50	162.50
	Rate of Interest	8.90%	8.90%	8.90%	8.90%	8.90%
	Interest	23.36	21.14	18.91	16.69	14.46
	Rep Schedule	12 annual installments from 25.02.2014				
2	Bond XXXIII					
	Gross loan opening	300.00	300.00	300.00	300.00	300.00
	Cumulative Repayment upto DOCO/previous year	0.00	25.00	50.00	75.00	100.00
	Net Loan-Opening	300.00	275.00	250.00	225.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	25.00	25.00	25.00	25.00	25.00
	Net Loan-Closing	275.00	250.00	225.00	200.00	175.00
	Average Loan	287.50	262.50	237.50	212.50	187.50
	Rate of Interest	8.64%	8.64%	8.64%	8.64%	8.64%
	Interest	24.84	22.68	20.52	18.36	16.20
	Rep Schedule	12 annual installments from 08.07.2014				
3	Bond XXXIV					
	Gross loan opening	1000.00	1000.00	1000.00	1000.00	1000.00
	Cumulative Repayment upto DOCO/previous year	0.00	83.33	166.67	250.00	333.33
	Net Loan-Opening	1000.00	916.67	833.33	750.00	666.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	83.33	83.33	83.33	83.33	83.33
	Net Loan-Closing	916.67	833.33	750.00	666.67	583.33
	Average Loan	958.33	875.00	791.67	708.33	625.00
	Rate of Interest	8.84%	8.84%	8.84%	8.84%	8.84%
	Interest	84.72	77.35	69.98	62.62	55.25
	Rep Schedule	12 annual installments from 21.10.2014				



4	Bond XXXV					
	Gross loan opening	6.00	6.00	6.00	6.00	6.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.50	1.00	1.50
	Net Loan-Opening	6.00	6.00	5.50	5.00	4.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.50	0.50	0.50	0.50
	Net Loan-Closing	6.00	5.50	5.00	4.50	4.00
	Average Loan	6.00	5.75	5.25	4.75	4.25
	Rate of Interest	9.64%	9.64%	9.64%	9.64%	9.64%
	Interest	0.58	0.55	0.51	0.46	0.41
	Rep Schedule	12 annual installments from 31.05.2015.				
5	Bond XXXVI					
	Gross loan opening	30.00	30.00	30.00	30.00	30.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	2.00	4.00
	Net Loan-Opening	30.00	30.00	30.00	28.00	26.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	2.00	2.00	2.00
	Net Loan-Closing	30.00	30.00	28.00	26.00	24.00
	Average Loan	30.00	30.00	29.00	27.00	25.00
	Rate of Interest	9.35%	9.35%	9.35%	9.35%	9.35%
	Interest	2.81	2.81	2.71	2.52	2.34
	Rep Schedule	15annual installments from 29.08.2016.				
6	Bond XXXVIII					
	Gross loan opening	200.00	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	200.00	200.00	200.00	200.00	200.00
	Average Loan	200.00	200.00	200.00	200.00	200.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	18.50	18.50	18.50	18.50	18.50
	Rep Schedule	Bullet Payment as on 09.03.2027				
7	SBI (21.03.2012)					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00



	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	9.09	18.18
	Net Loan-Opening	100.00	100.00	100.00	90.91	81.82
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	9.09	9.09	9.09
	Net Loan-Closing	100.00	100.00	90.91	81.82	72.73
	Average Loan	100.00	100.00	95.45	86.36	77.27
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	10.25	10.25	9.78	8.85	7.92
	Rep Schedule	22 half yearly instalment from 31.08.2016				
8	Bond XLIII					
	Gross loan opening	509.95	509.95	509.95	509.95	509.95
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	42.50
	Net Loan-Opening	509.95	509.95	509.95	509.95	467.45
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	42.50	42.50
	Net Loan-Closing	509.95	509.95	509.95	467.45	424.96
	Average Loan	509.95	509.95	509.95	488.70	446.21
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	40.44	40.44	40.44	38.75	35.38
	Rep Schedule	12 annual installments from 28.05.2017				
9	Bond XLIV					
	Gross loan opening	1733.00	1733.00	1733.00	1733.00	1733.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	1733.00	1733.00	1733.00	1733.00	1733.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	577.67
	Net Loan-Closing	1733.00	1733.00	1733.00	1733.00	1155.33
	Average Loan	1733.00	1733.00	1733.00	1733.00	1444.17
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	150.77	150.77	150.77	150.77	125.64
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
	Total Loan					
	Gross loan opening	4178.95	4178.95	4178.95	4178.95	4178.95
	Cumulative Repayment upto DOCO/previous year	25.00	158.33	292.17	437.09	624.51



Net Loan-Opening	4153.95	4020.62	3886.78	3741.86	3554.44
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	133.33	133.83	144.92	187.42	765.09
Net Loan-Closing	4020.62	3886.78	3741.86	3554.44	2789.35
Average Loan	4087.28	3953.70	3814.32	3648.15	3171.90
Rate of Interest	8.7164%	8.7130%	8.7074%	8.7037%	8.7048%
Interest	356.26	344.49	332.13	317.52	276.11



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET II

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXIII					
	Gross loan opening	50.00	50.00	50.00	50.00	50.00
	Cumulative Repayment upto DOCO/previous year	0.00	4.17	8.33	12.50	16.67
	Net Loan-Opening	50.00	45.83	41.67	37.50	33.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	4.17	4.17	4.17	4.17	4.17
	Net Loan-Closing	45.83	41.67	37.50	33.33	29.17
	Average Loan	47.92	43.75	39.58	35.42	31.25
	Rate of Interest	8.64%	8.64%	8.64%	8.64%	8.64%
	Interest	4.14	3.78	3.42	3.06	2.70
	Rep Schedule	12 annual installments from 08.07.2014				
2	Bond XXXIV					
	Gross loan opening	200.00	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	16.67	33.33	50.00	66.67
	Net Loan-Opening	200.00	183.33	166.67	150.00	133.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	16.67	16.67	16.67	16.67	16.67
	Net Loan-Closing	183.33	166.67	150.00	133.33	116.67
	Average Loan	191.67	175.00	158.33	141.67	125.00
	Rate of Interest	8.84%	8.84%	8.84%	8.84%	8.84%
	Interest	16.94	15.47	14.00	12.52	11.05
	Rep Schedule	12 annual installments from 21.10.2014				
3	Bond XXXVI					
	Gross loan opening	10.00	10.00	10.00	10.00	10.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.67	1.33
	Net Loan-Opening	10.00	10.00	10.00	9.33	8.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.67	0.67	0.67
	Net Loan-Closing	10.00	10.00	9.33	8.67	8.00
	Average Loan	10.00	10.00	9.67	9.00	8.33
	Rate of Interest	9.35%	9.35%	9.35%	9.35%	9.35%
	Interest	0.94	0.94	0.90	0.84	0.78



	Rep Schedule	15annual installments from 29.08.2016.				
4	Bond XXXVIII					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	100.00	100.00	100.00	100.00	100.00
	Average Loan	100.00	100.00	100.00	100.00	100.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	9.25	9.25	9.25	9.25	9.25
	Rep Schedule	Bullet Payement as on 09.03.2027				
5	SBI (21.03.2012)					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	9.09	18.18
	Net Loan-Opening	100.00	100.00	100.00	90.91	81.82
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	9.09	9.09	9.09
	Net Loan-Closing	100.00	100.00	90.91	81.82	72.73
	Average Loan	100.00	100.00	95.45	86.36	77.27
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	10.25	10.25	9.78	8.85	7.92
	Rep Schedule	22 half yearly instalment from 31.08.2016				
6	Bond XL					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	8.33	16.67
	Net Loan-Opening	100.00	100.00	100.00	91.67	83.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33	8.33	8.33
	Net Loan-Closing	100.00	100.00	91.67	83.33	75.00
	Average Loan	100.00	100.00	95.83	87.50	79.17
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	9.30	9.30	8.91	8.14	7.36
	Rep Schedule	12 annual installments from 28.06.2016				
7	Bond XLI					



	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	8.33	16.67
	Net Loan-Opening	100.00	100.00	100.00	91.67	83.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33	8.33	8.33
	Net Loan-Closing	100.00	100.00	91.67	83.33	75.00
	Average Loan	100.00	100.00	95.83	87.50	79.17
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	8.85	8.85	8.48	7.74	7.01
	Rep Schedule	12 annual installments from 19.10.2016				
8	Bond XLIII					
	Gross loan opening	35.00	35.00	35.00	35.00	35.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	2.92
	Net Loan-Opening	35.00	35.00	35.00	35.00	32.08
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	2.92	2.92
	Net Loan-Closing	35.00	35.00	35.00	32.08	29.17
	Average Loan	35.00	35.00	35.00	33.54	30.63
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	2.78	2.78	2.78	2.66	2.43
	Rep Schedule	12 annual installments from 28.05.2017				
9	Bond XLIV					
	Gross loan opening	235.00	235.00	235.00	235.00	235.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	235.00	235.00	235.00	235.00	235.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	78.33
	Net Loan-Closing	235.00	235.00	235.00	235.00	156.67
	Average Loan	235.00	235.00	235.00	235.00	195.83
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	20.45	20.45	20.45	20.45	17.04
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
	Total Loan					
	Gross loan opening	930.00	930.00	930.00	930.00	930.00



Cumulative Repayment upto DOCO/previous year	0.00	20.83	41.67	88.92	139.10
Net Loan-Opening	930.00	909.17	888.33	841.08	790.90
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	20.83	20.83	47.26	50.17	128.51
Net Loan-Closing	909.17	888.33	841.08	790.90	662.39
Average Loan	919.58	898.75	864.70	815.99	726.65
Rate of Interest	9.0137%	9.0187%	9.0168%	9.0091%	9.0187%
Interest	82.89	81.06	77.97	73.51	65.53



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET III

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXIV					
	Gross loan opening	420.00	420.00	420.00	420.00	420.00
	Cumulative Repayment upto DOCO/previous year	0.00	35.00	70.00	105.00	140.00
	Net Loan-Opening	420.00	385.00	350.00	315.00	280.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	35.00	35.00	35.00	35.00	35.00
	Net Loan-Closing	385.00	350.00	315.00	280.00	245.00
	Average Loan	402.50	367.50	332.50	297.50	262.50
	Rate of Interest	8.84%	8.84%	8.84%	8.84%	8.84%
	Interest	35.58	32.49	29.39	26.30	23.21
	Rep Schedule	12 annual installments from 21.10.2014				
2	Bond XXXVIII					
	Gross loan opening	122.00	122.00	122.00	122.00	122.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	122.00	122.00	122.00	122.00	122.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	122.00	122.00	122.00	122.00	122.00
	Average Loan	122.00	122.00	122.00	122.00	122.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	11.29	11.29	11.29	11.29	11.29
	Rep Schedule	Bullet Payment as on 09.03.2027				
3	SBI (21.03.2012)					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	9.09	18.18
	Net Loan-Opening	100.00	100.00	100.00	90.91	81.82
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	9.09	9.09	9.09
	Net Loan-Closing	100.00	100.00	90.91	81.82	72.73
	Average Loan	100.00	100.00	95.45	86.36	77.27
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	10.25	10.25	9.78	8.85	7.92



	Rep Schedule	22 half yearly instalment from 31.08.2016				
4	Bond XLIII					
	Gross loan opening	363.05	363.05	363.05	363.05	363.05
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	30.25
	Net Loan-Opening	363.05	363.05	363.05	363.05	332.80
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	30.25	30.25
	Net Loan-Closing	363.05	363.05	363.05	332.80	302.54
	Average Loan	363.05	363.05	363.05	347.92	317.67
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	28.79	28.79	28.79	27.59	25.19
	Rep Schedule	12 annual installments from 28.05.2017				
5	Bond XLIV					
	Gross loan opening	372.50	372.50	372.50	372.50	372.50
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	372.50	372.50	372.50	372.50	372.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	124.17
	Net Loan-Closing	372.50	372.50	372.50	372.50	248.33
	Average Loan	372.50	372.50	372.50	372.50	310.42
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	32.41	32.41	32.41	32.41	27.01
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
	Total Loan					
	Gross loan opening	1377.55	1377.55	1377.55	1377.55	1377.55
	Cumulative Repayment upto DOCO/previous year	0.00	35.00	70.00	114.09	188.44
	Net Loan-Opening	1377.55	1342.55	1307.55	1263.46	1189.11
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	35.00	35.00	44.09	74.35	198.51
	Net Loan-Closing	1342.55	1307.55	1263.46	1189.11	990.60
	Average Loan	1360.05	1325.05	1285.50	1226.29	1089.86
	Rate of Interest	8.6992%	8.6955%	8.6860%	8.6794%	8.6807%
	Interest	118.31	115.22	111.66	106.43	94.61



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET IV

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XL					
	Gross loan opening	100.00	100.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	8.33	16.67
	Net Loan-Opening	100.00	100.00	100.00	91.67	83.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	8.33	8.33	8.33
	Net Loan-Closing	100.00	100.00	91.67	83.33	75.00
	Average Loan	100.00	100.00	95.83	87.50	79.17
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	9.30	9.30	8.91	8.14	7.36
	Rep Schedule	12 annual installments from 28.06.2016				
2	Bond XLI					
	Gross loan opening	50.00	50.00	50.00	50.00	50.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	4.17	8.33
	Net Loan-Opening	50.00	50.00	50.00	45.83	41.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	4.17	4.17	4.17
	Net Loan-Closing	50.00	50.00	45.83	41.67	37.50
	Average Loan	50.00	50.00	47.92	43.75	39.58
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	4.43	4.43	4.24	3.87	3.50
	Rep Schedule	12 annual installments from 19.10.2016				
3	Bond XLIII					
	Gross loan opening	50.00	50.00	50.00	50.00	50.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	4.17
	Net Loan-Opening	50.00	50.00	50.00	50.00	45.83
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	4.17	4.17
	Net Loan-Closing	50.00	50.00	50.00	45.83	41.67
	Average Loan	50.00	50.00	50.00	47.92	43.75
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	3.97	3.97	3.97	3.80	3.47
	Rep Schedule	12 annual installments from 28.05.2017				



4	Bond XLIV					
	Gross loan opening	43.00	43.00	43.00	43.00	43.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	43.00	43.00	43.00	43.00	43.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	14.33
	Net Loan-Closing	43.00	43.00	43.00	43.00	28.67
	Average Loan	43.00	43.00	43.00	43.00	35.83
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	3.74	3.74	3.74	3.74	3.12
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
	Total Loan					
	Gross loan opening	243.00	243.00	243.00	243.00	243.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	12.50	29.17
	Net Loan-Opening	243.00	243.00	243.00	230.50	213.83
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	12.50	16.67	31.00
	Net Loan-Closing	243.00	243.00	230.50	213.83	182.83
	Average Loan	243.00	243.00	236.75	222.17	198.33
	Rate of Interest	8.8193%	8.8193%	8.8106%	8.7998%	8.7996%
	Interest	21.43	21.43	20.86	19.55	17.45



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET V

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXVIII					
	Gross loan opening	300.00	300.00	300.00	300.00	300.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	300.00	300.00	300.00	300.00	300.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	300.00	300.00	300.00	300.00	300.00
	Average Loan	300.00	300.00	300.00	300.00	300.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	27.75	27.75	27.75	27.75	27.75
	Rep Schedule	Bullet Payment as on 09.03.2027				
2	Bond XXXIX					
	Gross loan opening	25.00	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	25.00	25.00	25.00	25.00	25.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	25.00	25.00	25.00	25.00	25.00
	Average Loan	25.00	25.00	25.00	25.00	25.00
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	2.35	2.35	2.35	2.35	2.35
	Rep Schedule	Bullet Payment as on 29.03.2027				
3	Bond XL					
	Gross loan opening	50.00	50.00	50.00	50.00	50.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	4.17	8.33
	Net Loan-Opening	50.00	50.00	50.00	45.83	41.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	4.17	4.17	4.17
	Net Loan-Closing	50.00	50.00	45.83	41.67	37.50
	Average Loan	50.00	50.00	47.92	43.75	39.58
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	4.65	4.65	4.46	4.07	3.68
	Rep Schedule	12 annual installments from 28.06.2016				



4	Bond XLI					
	Gross loan opening	788.00	788.00	788.00	788.00	788.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	65.67	131.33
	Net Loan-Opening	788.00	788.00	788.00	722.33	656.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	65.67	65.67	65.67
	Net Loan-Closing	788.00	788.00	722.33	656.67	591.00
	Average Loan	788.00	788.00	755.17	689.50	623.83
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	69.74	69.74	66.83	61.02	55.21
	Rep Schedule	12 annual installments from 19.10.2016				
5	Bond XLIII					
	Gross loan opening	200.00	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	16.67
	Net Loan-Opening	200.00	200.00	200.00	200.00	183.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	16.67	16.67
	Net Loan-Closing	200.00	200.00	200.00	183.33	166.67
	Average Loan	200.00	200.00	200.00	191.67	175.00
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	15.86	15.86	15.86	15.20	13.88
	Rep Schedule	12 annual installments from 28.05.2017				
6	Bond XLIV (Add Cap 2014-15)					
	Gross loan opening	0.00	15.43	15.43	15.43	15.43
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	15.43	15.43	15.43	15.43
	Additions during the year	15.43	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	5.14
	Net Loan-Closing	15.43	15.43	15.43	15.43	10.29
	Average Loan	7.72	15.43	15.43	15.43	12.86
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	0.67	1.34	1.34	1.34	1.12
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
7	Bond XLIV					
	Gross loan opening	434.39	434.39	434.39	434.39	434.39



	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	434.39	434.39	434.39	434.39	434.39
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	144.80
	Net Loan-Closing	434.39	434.39	434.39	434.39	289.59
	Average Loan	434.39	434.39	434.39	434.39	361.99
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	37.79	37.79	37.79	37.79	31.49
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
8	Bond XLIX					
	Gross loan opening	0.00	78.88	78.88	78.88	78.88
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	78.88	78.88	78.88	78.88
	Additions during the year	78.88	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	78.88	78.88	78.88	78.88	78.88
	Average Loan	39.44	78.88	78.88	78.88	78.88
	Rate of Interest	8.15%	8.15%	8.15%	8.15%	8.15%
	Interest	3.21	6.43	6.43	6.43	6.43
	Rep Schedule	Bullet Payment as on 09.03.2020				
	Total Loan					
	Gross loan opening	1797.39	1891.70	1891.70	1891.70	1891.70
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	69.83	156.33
	Net Loan-Opening	1797.39	1891.70	1891.70	1821.87	1735.37
	Additions during the year	94.31	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	69.83	86.50	236.44
	Net Loan-Closing	1891.70	1891.70	1821.87	1735.37	1498.93
	Average Loan	1844.55	1891.70	1856.78	1778.62	1617.15
	Rate of Interest	8.7840%	8.7705%	8.7685%	8.7681%	8.7753%
	Interest	162.03	165.91	162.81	155.95	141.91



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET VI

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXVIII					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	40.00	40.00	40.00	40.00	40.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	40.00	40.00	40.00	40.00	40.00
	Average Loan	40.00	40.00	40.00	40.00	40.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	3.70	3.70	3.70	3.70	3.70
	Rep Schedule	Bullet Payment as on 09.03.2027				
2	Bond XXXIX					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	40.00	40.00	40.00	40.00	40.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	40.00	40.00	40.00	40.00	40.00
	Average Loan	40.00	40.00	40.00	40.00	40.00
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	3.76	3.76	3.76	3.76	3.76
	Rep Schedule	Bullet Payment as on 29.03.2027				
3	SBI (21.03.2012)					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	3.64	7.27
	Net Loan-Opening	40.00	40.00	40.00	36.36	32.73
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3.64	3.64	3.64
	Net Loan-Closing	40.00	40.00	36.36	32.73	29.09
	Average Loan	40.00	40.00	38.18	34.55	30.91
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	4.10	4.10	3.91	3.54	3.17
	Rep Schedule	22 half yearly instalment from 31.08.2016				
3	SBI (2014-15)-SBI 10000					



	Gross loan opening	246.16	246.16	246.16	246.16	246.16
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	246.16	246.16	246.16	246.16	246.16
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	246.16	246.16	246.16	246.16	246.16
	Average Loan	246.16	246.16	246.16	246.16	246.16
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	25.23	25.23	25.23	25.23	25.23
	Rep Schedule					
4	Bond XL					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	3.33	6.67
	Net Loan-Opening	40.00	40.00	40.00	36.67	33.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3.33	3.33	3.33
	Net Loan-Closing	40.00	40.00	36.67	33.33	30.00
	Average Loan	40.00	40.00	38.33	35.00	31.67
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	3.72	3.72	3.57	3.26	2.95
	Rep Schedule	12 annual installments from 28.06.2016				
5	Bond XLI					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	3.33	6.67
	Net Loan-Opening	40.00	40.00	40.00	36.67	33.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3.33	3.33	3.33
	Net Loan-Closing	40.00	40.00	36.67	33.33	30.00
	Average Loan	40.00	40.00	38.33	35.00	31.67
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	3.54	3.54	3.39	3.10	2.80
	Rep Schedule	12 annual installments from 19.10.2016				
5	Bond XLIII					
	Gross loan opening	25.00	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	2.08



	Net Loan-Opening	25.00	25.00	25.00	25.00	22.92
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	2.08	2.08
	Net Loan-Closing	25.00	25.00	25.00	22.92	20.83
	Average Loan	25.00	25.00	25.00	23.96	21.88
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	1.98	1.98	1.98	1.90	1.73
	Rep Schedule	12 annual installments from 28.05.2017				
6	Bond XLIV (Add Cap 2014-15)					
	Gross loan opening	115.41	115.41	115.41	115.41	115.41
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	115.41	115.41	115.41	115.41	115.41
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	38.47
	Net Loan-Closing	115.41	115.41	115.41	115.41	76.94
	Average Loan	115.41	115.41	115.41	115.41	96.18
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	10.04	10.04	10.04	10.04	8.37
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
7	Bond XLIX					
	Gross loan opening	0.00	13.52	13.52	13.52	13.52
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	13.52	13.52	13.52	13.52
	Additions during the year	13.52	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	13.52	13.52	13.52	13.52	13.52
	Average Loan	6.76	13.52	13.52	13.52	13.52
	Rate of Interest	8.15%	8.15%	8.15%	8.15%	8.15%
	Interest	0.55	1.10	1.10	1.10	1.10
	Rep Schedule	Bullet Payment as on 09.03.2020				
8	Bond XLVI					
	Gross loan opening	0.00	3.81	3.81	3.81	3.81
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	3.81	3.81	3.81	3.81
	Additions during the year	3.81	0.00	0.00	0.00	0.00



	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	3.81	3.81	3.81	3.81	3.81
	Average Loan	1.91	3.81	3.81	3.81	3.81
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	0.18	0.35	0.35	0.35	0.35
	Rep Schedule	Redeemable at par in 3 equal instalments on 04.09.2019, 04.09.2024 & 04.09.2029				
9	Bond XLVI					
	Gross loan opening	12.33	12.33	12.33	12.33	12.33
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	12.33	12.33	12.33	12.33	12.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	12.33	12.33	12.33	12.33	12.33
	Average Loan	12.33	12.33	12.33	12.33	12.33
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	1.15	1.15	1.15	1.15	1.15
	Rep Schedule	Redeemable at par in 3 equal instalments on 04.09.2019, 04.09.2024 & 04.09.2029				
	Total Loan					
	Gross loan opening	598.90	616.23	616.23	616.23	616.23
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	10.30	22.69
	Net Loan-Opening	598.90	616.23	616.23	605.93	593.54
	Additions during the year	17.33	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	10.30	12.39	50.86
	Net Loan-Closing	616.23	616.23	605.93	593.54	542.68
	Average Loan	607.57	616.23	611.08	599.73	568.11
	Rate of Interest	9.5380%	9.5220%	9.5223%	9.5256%	9.5601%
	Interest	57.95	58.68	58.19	57.13	54.31



**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN
ASSET VII**

(₹ in lakh)

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	Bond XXXVIII				
	Gross loan opening	150.00	150.00	150.00	150.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	150.00	150.00	150.00	150.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	150.00	150.00	150.00	150.00
	Average Loan	150.00	150.00	150.00	150.00
	Rate of Interest	9.25%	9.25%	9.25%	9.25%
	Interest	13.88	13.88	13.88	13.88
	Rep Schedule	Bullet Payment as on 09.03.2027			
2	Bond XL				
	Gross loan opening	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	16.67	33.33
	Net Loan-Opening	200.00	200.00	183.33	166.67
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	16.67	16.67	16.67
	Net Loan-Closing	200.00	183.33	166.67	150.00
	Average Loan	200.00	191.67	175.00	158.33
	Rate of Interest	9.30%	9.30%	9.30%	9.30%
	Interest	18.60	17.83	16.28	14.73
	Rep Schedule	12 annual installments from 28.06.2016			
3	Bond XLI				
	Gross loan opening	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	2.08	4.17
	Net Loan-Opening	25.00	25.00	22.92	20.83
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	2.08	2.08	2.08
	Net Loan-Closing	25.00	22.92	20.83	18.75
	Average Loan	25.00	23.96	21.88	19.79
	Rate of Interest	8.85%	8.85%	8.85%	8.85%
	Interest	2.21	2.12	1.94	1.75
	Rep Schedule	12 annual installments from 19.10.2016			



4	Bond XLIII				
	Gross loan opening	25.00	25.00	25.00	25.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	2.08
	Net Loan-Opening	25.00	25.00	25.00	22.92
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	2.08	2.08
	Net Loan-Closing	25.00	25.00	22.92	20.83
	Average Loan	25.00	25.00	23.96	21.88
	Rate of Interest	7.93%	7.93%	7.93%	7.93%
	Interest	1.98	1.98	1.90	1.73
	Rep Schedule	12 annual installments from 28.05.2017			
5	Bond XLIV				
	Gross loan opening	17.67	17.67	17.67	17.67
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	17.67	17.67	17.67	17.67
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	5.89
	Net Loan-Closing	17.67	17.67	17.67	11.78
	Average Loan	17.67	17.67	17.67	14.73
	Rate of Interest	8.70%	8.70%	8.70%	8.70%
	Interest	1.54	1.54	1.54	1.28
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028			
6	Bond XLIX				
	Gross loan opening	152.41	152.41	152.41	152.41
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	152.41	152.41	152.41	152.41
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	152.41	152.41	152.41	152.41
	Average Loan	152.41	152.41	152.41	152.41
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	12.42	12.42	12.42	12.42
	Rep Schedule	Bullet Payment as on 09.03.2020			
7	Bond XLVIII				
	Gross loan opening	100.00	100.00	100.00	100.00



Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	100.00	100.00	100.00	100.00
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	100.00	100.00	100.00	100.00
Average Loan	100.00	100.00	100.00	100.00
Rate of Interest	8.20%	8.20%	8.20%	8.20%
Interest	8.20	8.20	8.20	8.20
Rep Schedule	Redeemable in 12 equal annual instalments from 23.01.2020			
Total Loan				
Gross loan opening	670.08	670.08	670.08	670.08
Cumulative Repayment upto DOCO/previous year	0.00	0.00	18.75	39.58
Net Loan-Opening	670.08	670.08	651.33	630.50
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	0.00	18.75	20.83	26.72
Net Loan-Closing	670.08	651.33	630.50	603.77
Average Loan	670.08	660.71	640.91	617.14
Rate of Interest	8.7794%	8.7727%	8.7601%	8.7483%
Interest	58.83	57.96	56.14	53.99



CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN ASSET VIII

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond XXXIX					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	40.00	40.00	40.00	40.00	40.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	40.00	40.00	40.00	40.00	40.00
	Average Loan	40.00	40.00	40.00	40.00	40.00
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	3.76	3.76	3.76	3.76	3.76
	Rep Schedule	Bullet Payment as on 29.03.2027				
2	SBI (21.03.2012)					
	Gross loan opening	40.00	40.00	40.00	40.00	40.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	3.64	7.27
	Net Loan-Opening	40.00	40.00	40.00	36.36	32.73
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3.64	3.64	3.64
	Net Loan-Closing	40.00	40.00	36.36	32.73	29.09
	Average Loan	40.00	40.00	38.18	34.55	30.91
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	4.10	4.10	3.91	3.54	3.17
	Rep Schedule	22 half yearly instalment from 31.08.2016				
3	Bond XL					
	Gross loan opening	30.00	30.00	30.00	30.00	30.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	2.50	5.00
	Net Loan-Opening	30.00	30.00	30.00	27.50	25.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	2.50	2.50	2.50
	Net Loan-Closing	30.00	30.00	27.50	25.00	22.50
	Average Loan	30.00	30.00	28.75	26.25	23.75
	Rate of Interest	9.30%	9.30%	9.30%	9.30%	9.30%
	Interest	2.79	2.79	2.67	2.44	2.21
	Rep Schedule	12 annual installments from 28.06.2016				
4	Bond XLI					



	Gross loan opening	392.34	392.34	392.34	392.34	392.34
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	32.70	65.39
	Net Loan-Opening	392.34	392.34	392.34	359.65	326.95
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	32.70	32.70	32.70
	Net Loan-Closing	392.34	392.34	359.65	326.95	294.26
	Average Loan	392.34	392.34	375.99	343.30	310.60
	Rate of Interest	8.85%	8.85%	8.85%	8.85%	8.85%
	Interest	34.72	34.72	33.28	30.38	27.49
	Rep Schedule	12 annual installments from 19.10.2016				
5	Bond XLIII					
	Gross loan opening	20.00	20.00	20.00	20.00	20.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	1.67
	Net Loan-Opening	20.00	20.00	20.00	20.00	18.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	1.67	1.67
	Net Loan-Closing	20.00	20.00	20.00	18.33	16.67
	Average Loan	20.00	20.00	20.00	19.17	17.50
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	1.59	1.59	1.59	1.52	1.39
	Rep Schedule	12 annual installments from 28.05.2017				
6	Bond XLIV (Add Cap 2014-15)					
	Gross loan opening	0.00	1.81	1.81	1.81	1.81
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	1.81	1.81	1.81	1.81
	Additions during the year	1.81	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.60
	Net Loan-Closing	1.81	1.81	1.81	1.81	1.21
	Average Loan	0.91	1.81	1.81	1.81	1.51
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	0.08	0.16	0.16	0.16	0.13
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
7	Bond XLIV					
	Gross loan opening	522.98	522.98	522.98	522.98	522.98



	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	522.98	522.98	522.98	522.98	522.98
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	174.33
	Net Loan-Closing	522.98	522.98	522.98	522.98	348.65
	Average Loan	522.98	522.98	522.98	522.98	435.82
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	45.50	45.50	45.50	45.50	37.92
	Rep Schedule	3 equal annual instalments on 15.07.2018, 15.07.2023 & 15.07.2028				
8	Bond XLIX					
	Gross loan opening	0.00	271.97	271.97	271.97	271.97
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	271.97	271.97	271.97	271.97
	Additions during the year	271.97	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	271.97	271.97	271.97	271.97	271.97
	Average Loan	135.99	271.97	271.97	271.97	271.97
	Rate of Interest	8.15%	8.15%	8.15%	8.15%	8.15%
	Interest	11.08	22.17	22.17	22.17	22.17
	Rep Schedule	Bullet Payment as on 09.03.2020				
	Total Loan					
	Gross loan opening	1045.32	1319.10	1319.10	1319.10	1319.10
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	38.83	79.33
	Net Loan-Opening	1045.32	1319.10	1319.10	1280.27	1239.77
	Additions during the year	273.78	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	38.83	40.50	215.43
	Net Loan-Closing	1319.10	1319.10	1280.27	1239.77	1024.34
	Average Loan	1182.21	1319.10	1299.68	1260.02	1132.06
	Rate of Interest	8.7648%	8.7014%	8.6968%	8.6877%	8.6768%
	Interest	103.62	114.78	113.03	109.47	98.23

