

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 259/TT/2015

Coram:

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

Date of Hearing : 29.04.2016

Date of Order : 26.05.2016

In the matter of:

Determination of transmission tariff of **Asset-I:** 200 MVA, 400/132/33 kV ICT - 2 along with associated bays at Biswanath Chariali, **Asset-II:** 80 MVAR Bus Reactor-1 along with associated Bays at Biswanath Chariali, **Asset-III:** 80 MVAR Bus Reactor-2 along with associated Bays at Biswanath Chariali, **Asset-IV:** Augmentation of 400 kV Agra Sub-station by 1x315 MVA, 400/220/33 kV ICT along with associated Bays, **Asset-V:** 400 kV D/C Balipara-Biswanath Chariali Transmission Line along with associated bays at Balipara and Biswanath Chariali under the transmission system associated with "North East-Northern/Western Interconnector-I Project" for 2014-19 Tariff period in North Eastern, Northern & Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

And in the matter of:

Power Grid Corporation of India Ltd.
'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon -122 001 (Haryana).

.....**Petitioner**

Versus

North Eastern Region

1. Assam Electricity Grid Corporation Limited
(Formerly Assam State Electricity Board),
"Bijulee Bhawan", Paltan Bazar, Guwahati-781 001
2. Meghalaya Energy Corporation Ltd.
(Formerly Meghalaya State Electricity Board)
Short Round Road, "Lumjingshai", Shillong-793 001



3. Government of Arunachal Pradesh,
Itanagar, Arunachal Pradesh
4. Power and Electricity Department
Govt. of Mizoram, Aizawl, Mizoram
5. Manipur State Electricity Distribution Company Ltd.
(Formerly Electricity Department, Government of Manipur)
Keishampat, Imphal
6. Department of Power,
Government of Nagaland
Kohima, Nagaland
7. Tripura State Electricity Corporation Ltd.,
Vidhyut Bhawan, North Banamalipur,
Agartala, Tripura (W)-799001
8. OTPC (ONGC Tripura Power Corporation Limited),
6th Floor, A-Wing, IFCI Towers,
New Delhi-110019
9. NTPC (National Thermal Power Corporation Limited),
NTPC Bhawan, Scope Complex,
Institutional Area, Lodhi Road, New Delhi-110003

Northern Region

10. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.
Vidyut Bhawan, Vidyut Marg,
Jaipur-302 005
11. Ajmer Vidyut Vitran Nigam Ltd.
400 kV GSS Building (Ground Floor), Ajmer Road
Heerapura, Jaipur
12. Jaipur Vidyut Vitran Nigam Ltd.
400 kV GSS Building (Ground Floor), Ajmer Road
Heerapura, Jaipur
13. Jodhpur Vidyut Vitran Nigam Ltd.
400 kV GSS Building (Ground Floor), Ajmer Road
Heerapura, Jaipur



14. Himachal Pradesh State Electricity Board,
Vidyut Bhawan,
Kumar House Complex Building II
Shimla-171004
 15. Punjab State Electricity Board,
The Mall, Patiala-147001
 16. Haryana Power Purchase Centre
Shakti Bhawan, Sector-6
Panchkula (Haryana) 134 109
 17. Power Development Deptt.
Govt. of Jammu & Kashmir
Mini Secretariat, Jammu
 18. Uttar Pradesh Power Corporation Ltd. (UPPCL)
Shakti Bhawan, 14, Ashok Marg
Lucknow- 226001
 19. Delhi Transco Ltd.
Shakti Sadan, Kotla Road
New Delhi- 110002
 20. BSES Yamuna Power Ltd.
BSES Bhawan, Nehru Place
New Delhi
 21. BSES Rajdhani Power Ltd.
BSES Bhawan, Nehru Place
New Delhi
 22. North Delhi Power Ltd.
Power Trading & Load Dispatch Group
Cennet Building
Pitampura, New Delhi-110034
 23. Chandigarh Administration
Sector-9, Chandigarh
 24. Uttarakhand Power Corporation Ltd.
Urja Bhawan, Kanwali Road
Dehradun
 25. North Central Railway
Allahabad
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26. New Delhi Municipal Council
Palika Kendra, Sansad Marg
New Delhi-110002

Western Region

27. Madhya Pradesh Power Management Company Ltd.
Shakti Bhawan, Rampur, Jabalpur-482008

28. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, 4th Floor, Bandra (East), Mumbai-400052

29. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road
Vadodara- 390007

30. Electricity Department
Govt. of Goa,
Vidyut Bhawan, Panaji- 403001

31. Electricity Department
Administration of Daman & Diu,
Daman- 396210

32. Electricity Department
Administration of Dadra Nagar Haveli,
U.T., Silvassa- 396230

33. Chhattisgarh State Electricity Board
P.O Sunder Nagar, Dangania, Raipur
Chhattisgarh-492013

34. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd.
3/54, Press Complex, Agra-Bombay Road
Indore-452008

.....Respondents

The following were present:

For Petitioner: Shri M.M. Mondal, PGCIL
 Shri Rakesh Prasad, PGCIL
 Shri S.S. Raju, PGCIL
 Shri Angaru Naresh Kumar, PGCIL
 Shri Vivek Kumar Singh, PGCIL



For Respondent: Shri S.K Agarwal, Rajasthan Discoms
Shri S.P Das, Rajasthan Discoms

ORDER

The present petition has been preferred by Power Grid Corporation of India Ltd. ("the petitioner") for determination of tariff for 200 MVA, 400/132/33 kV ICT - 2 along with associated bays at Biswanath Chariali (referred as "**Asset-I**"), 80 MVAR Bus Reactor-1 along with associated Bays at Biswanath Chariali (referred as "**Asset-II**"), 80 MVAR Bus Reactor-2 along with associated Bays at Biswanath Chariali (referred as "**Asset-III**"), Augmentation of 400 kV Agra Sub-station by 1x315 MVA, 400/220/33 kV ICT along with associated Bays (referred as "**Asset-IV**"), and 400 kV D/C Balipara-Biswanath Chariali Transmission Line along with associated bays at Balipara and Biswanath Chariali (referred as "**Asset-V**") under the transmission system associated with "North East-Northern/Western Interconnector-I Project" for 2014-19 Tariff period in North Eastern, Northern and Western Region (hereinafter referred as "transmission asset") under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations") for the period from COD of respective assets to 31.3.2019.

2. The respondents are distribution licensees, electricity departments, power procurement companies and centralised companies who are procuring transmission service from the petitioner, mainly beneficiaries of the North-Eastern, Northern and Western Regions.



3. The petitioner has served the petition on the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of Electricity Act, 2003 ("the Act"). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. In response to the instant petition, Rajasthan Discoms, Respondent No. 11, 12 and 13, filed its reply vide affidavit dated 3.2.2016. Further, Uttar Pradesh Power Corporation Limited (UPPCL), Respondent No. 18 filed its reply vide affidavit dated 10.2.2016. The hearing in this matter was held on 29.4.2016. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.

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

(a) The investment approval of the project was accorded by Board of Directors of Power Grid vide Memorandum No. C/CP/NER-NR.WR Intr-I/ 97 dated 27.2.2009 with an estimated cost of ₹1113019 lakh including IDC of ₹106605 lakh. Subsequently, Revised Cost Estimate (RCE) was approved by Board of Directors of the petitioner, vide Memorandum No. C/CP/RCE- NE-NR/WR Interconnector-I dated 9.12.2015 at an estimated cost of ₹1376271 lakh, which included IDC of ₹174732 lakh (based on April 2015 price level).

(b) The scope of work covered under the project is as follows:-

1. Transmission Lines:

Part-A: North East – Northern/Western Interconnector - I includes

(i) Biswanath Chariyali - Agra \pm 800kV, 6000MW HVDC Bipole line



- (ii) Balipara - Biswanath Chariyali 400kV D/C line
- (iii) LILO of Ranganadi - Balipara 400 kV line at Biswanath Chariyali (Pooling Point)
- (iv) Biswanath Chariyali - Biswanath Chariyali (AEGCL) 132 kV D/C line

Part-B: Transmission System for immediate evacuation of power from Kameng HEP includes

- (i) Kameng - Balipara 400 kV D/C line
- (ii) Balipara - Bongaigaon 400 kV D/C (Quad conductor) with 30% Fixed Series Compensation at Balipara end

Part-C: Transmission System for immediate evacuation of power from Lower Subansiri HEP includes

- (i) Lower Subansiri - Biswanath Chariyali (Pooling Point) - 2 nos. 400 kV D/C lines with twin Lapwing conductor

2. Sub-station Works:

Part-A: North East – Northern/Western Interconnector - I includes

- (i) Establishment of 400/132 kV Pooling Station at Biswanath Chariyali with 2x200 MVA, 400/132/33 kV transformers along with associated line bays
- (ii) HVDC rectifier module of 3000 MW at Biswanath Chariyali and inverter module of 3000 MW capacity at Agra
- (iii) Augmentation of 400 kV Agra substations by 1x135 MVA, 400/220/33 kV transformer along with associated bays
- (iv) Extension of 400 kV line bays at Balipara substation
- (v) Extension of 132 kV line bays at Biswanath Chariyali (AEGCL)

Part-B: Transmission System for immediate evacuation of power from Kameng HEP includes

- (i) 2nd 315 MVA, 400/ 220 kV ICT at MISA
- (ii) Extension of 400kV line Bays at Bongaigaon and Balipara sub-stations

Part-C: Transmission System for immediate evacuation of power from Lower Subansiri HEP includes



(i) Extension of 400 kV line bays at Blswanath Chariyali Pooling Sub-station

3. Reactive Compensation:

Line Reactors:

S. No.	Transmission Lines	Line Reactor
1)	L. Subansiri-Biswanath Chariyali 400 kV D/C Line	1x63 MVAR* at Biswanath Chariyali end on each circuits (total 4 no. of reactors)
2)	Balipara-Bongaigaon 400 kV D/C Line (Quad Moose) :	1x63 MVAR at both end on each circuit (total 4 no. of reactors)
3)	Balipara-Biswanath Chariyali 400 kV D/C line resulting from LILO of Ranganadi-Balipara 400 kV D/C line at Biswanath Chariyali	1x50 MVAR existing fixed line reactor in each circuit at Balipara end to be made switchable at the present location itself

* *Switchable line reactor*

Bus Reactors:

S. No.	Sub-station	Bus Reactor
1)	Blswanath Chariyali	2x80 MVAR
2)	Bongaigaon	1x80 MVAR
3)	Balipara	1x80 MVAR
4)	Lower Subansiri	1x80 MVAR*
5)	Kameng	1 x80 MVAR*

* *These reactors would be a part of generation switchyard*

5. The transmission asset was scheduled to be commissioned within 54 months for the assets under Part-A and 48 months for Part-B from the date of investment approval i.e. 27.2.2009. Therefore, the scheduled date of commissioning (SCOD) of the transmission system works out to 27.8.2013 against which the Asset-I, II, III, IV, Va and Vb were put under commercial operation with effect as below:-



Assets name	SCOD as per IA dtd 27.2.2009	Actual date of commercial operation	Delay in months
Asset-I	27.8.2013	1.10.2015	25 months and 4 days
Asset-II		3.10.2015	25 months and 7 days
Asset-III		26.2.2016	29 months and 30 days
Asset-IV		10.12.2015	27 months and 13 days
Asset-Va		12.10.2015	25 months and 15 days
Asset-Vb		1.10.2015	25 months and 4 days

(c) The petitioner vide its affidavit dated 26.4.2016 has submitted the approved Revised Cost Estimate (RCE) for the project.

(d) The petitioner in its original petition had submitted the tariff forms for the Asset-I, II, III, IV and V on the basis of unaudited figures. Accordingly, the petitioner was directed to submit Auditor's Certificate and revised tariff forms for the assets. Further, the petitioner was directed to submit the RLDC certificates in support of trial operation or commercial operation date for the assets. In response, the petitioner vide affidavit dated 8.12.2015, 24.2.2016, 30.3.2016 and 11.5.2016 and has submitted the revised tariff forms along with Auditor's Certificates for Asset-I, II, III, IV, Va and Vb. The petitioner has also submitted the RLDC certificates for all the assets.

(e) The petitioner in its original petition had submitted Asset-V namely- 400 kV D/C Balipara-Biswanath Chariyali transmission line along with associated bays at Balipara and Biswanath Chariyali PS was with anticipated COD of 15.11.2015. Thereafter, the petitioner vide its affidavit dated 24.2.2016 split Asset-V into (1) Asset-Va namely- 400 kV D/C



Balipara-Biswanath Chairali # 3 transmission line along with associated bays at Balipara and Biswanath Chairali PS, and (2) 400 kV D/C Balipara-Biswanath Chairali # 4 Transmission line along with associated bays at Balipara and Biswanath Chairali PS. In this regard, the petitioner was directed to provide the RCE approval for splitting of Asset-V. In response, the petitioner vide its affidavit dated 11.5.2016 submitted that COD letters along with RLDC certificate have already been forwarded to all the respondents/RPC members vide letter ref no.: NEA HVDC/BNC/DOCO/379 dated 2.11.2015, and NEA HVDC/BNC/DOCO/380 dated 2.11.2015.

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

7. The petitioner has claimed the transmission charges as under:-

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	56.39	126.01	133.91	133.91
Interest on Loan	86.92	184.16	183.17	170.47
Return on equity	47.86	112.78	123.02	123.02
Interest on Working Capital	6.98	15.07	15.64	15.53
O & M Expenses	46.73	96.55	99.76	103.07
Total	244.88	534.57	555.50	546.00

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	36.16	84.25	90.61	90.61
Interest on Loan	56.11	123.12	123.58	115.06
Return on equity	31.00	76.47	84.42	84.42



Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Interest on Working Capital	4.54	10.09	10.55	10.47
O & M Expenses	30.82	64.37	66.51	68.71
Total	158.63	358.30	375.67	369.27

(₹ in lakh)

Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	6.99	82.63	90.78	90.78
Interest on Loan	10.88	122.49	125.30	116.99
Return on equity	5.86	72.46	82.45	82.45
Interest on Working Capital	0.87	9.95	10.55	10.48
O & M Expenses	5.91	64.37	66.51	68.71
Total	30.51	351.90	375.59	369.41

(₹ in lakh)

Asset-IV				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	108.24	387.56	393.99	395.25
Interest on Loan	154.27	523.61	497.17	462.71
Return on equity	88.03	328.31	337.43	339.66
Interest on Working Capital	11.37	39.55	39.67	39.33
O & M Expenses	59.70	199.55	206.16	213.01
Total	421.61	1478.58	1474.42	1449.96

(₹ in lakh)

Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	105.19	242.37	251.68	251.68
Interest on Loan	151.09	330.66	320.33	296.90
Return on equity	84.80	203.78	215.39	215.39
Interest on Working Capital	11.09	24.99	25.47	25.18
O & M Expenses	58.62	128.74	133.02	137.42
Total	410.79	930.54	945.89	926.57

(₹ in lakh)

Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19



Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Depreciation	335.74	706.13	729.17	735.77
Interest on Loan	468.60	933.80	895.94	835.31
Return on equity	258.11	557.47	584.37	591.73
Interest on Working Capital	29.09	60.14	60.74	59.99
O & M Expenses	83.76	173.06	178.81	184.74
Total	1175.30	2430.60	2449.03	2407.54

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

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	14.02	14.48	14.96	15.46
O & M Expenses	7.79	8.05	8.31	8.59
Receivables	81.63	89.10	92.58	91.00
Total	103.44	111.63	115.85	115.05
Rate of Interest	13.50	13.50	13.50	13.50
Interest	13.96	15.07	15.64	15.53
Pro-rata Interest	6.98	15.07	15.64	15.53

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	9.35	9.66	9.98	10.31
O & M Expenses	5.19	5.36	5.54	5.73
Receivables	53.45	59.72	62.61	61.55
Total	67.99	74.74	78.13	77.58
Rate of Interest	13.50	13.50	13.50	13.50
Interest	9.18	10.09	10.55	10.47
Pro-rata Interest	4.54	10.09	10.55	10.47

(₹ in lakh)

Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	9.35	9.66	9.98	10.31
O & M Expenses	5.19	5.36	5.54	5.73
Receivables	53.63	58.65	62.60	61.57



Total	68.17	73.67	78.12	77.61
Rate of Interest	13.50	13.50	13.50	13.50
Interest	9.20	9.95	10.55	10.48
Pro-rata Interest	0.87	9.95	10.55	10.48

(₹ in lakh)

Asset-IV				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	28.97	29.93	30.92	31.95
O & M Expenses	16.09	16.63	17.18	17.75
Receivables	227.30	246.43	245.74	241.66
Total	272.36	292.99	293.84	291.36
Rate of Interest	13.50	13.50	13.50	13.50
Interest	36.77	39.55	39.67	39.33
Pro-rata Interest	11.37	39.55	39.67	39.33

(₹ in lakh)

Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	18.69	19.31	19.95	20.61
O & M Expenses	10.38	10.73	11.09	11.45
Receivables	145.54	155.09	157.65	154.43
Total	174.61	185.13	188.69	186.49
Rate of Interest	13.50	13.50	13.50	13.50
Interest	23.57	24.99	25.47	25.18
Pro-rata Interest	11.09	24.99	25.47	25.18

(₹ in lakh)

Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	25.13	25.96	26.82	27.71
O & M Expenses	13.96	14.42	14.90	15.40
Receivables	391.77	405.10	408.17	401.26
Total	430.86	445.48	449.89	444.37
Rate of Interest	13.50	13.50	13.50	13.50
Interest	58.17	60.14	60.74	59.99
Pro-rata Interest	29.09	60.14	60.74	59.99



Date of Commercial Operation (“COD”)

9. The petitioner has claimed the date of the commercial operation of the Assets-I, II, III, IV, Va and Vb as 1.10.2015, 3.10.2015, 26.2.2016, 10.12.2015, 12.10.2015 and 1.10.2015, respectively. 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:

(i) where the transmission line or substation 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.”

10. The petitioner has submitted RLDC certificate issued by NERLDC, POSOCO for Asset-I, II, III, Va and Vb and NRLDC, POSOCO for Asset-IV in support of the claim of commercial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations, indicating completion of successful trial operation.



11. Accordingly, the commercial operation date of the transmission asset has been considered as 1.10.2015, 3.10.2015, 26.2.2016, 10.12.2015, 12.10.2015 and 1.10.2015 for Assets-I, II, III, IV, Va and Vb, respectively and the tariff is worked out from COD to 31.3.2019.

Capital Cost

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

Asset	Approved apportioned cost as per FR	Revised Apportioned Cost as per RCE	Capital cost as on COD	Additional capitalization			Total estimated completion cost
				2015-16	2016-17	2017-18	
Asset-I	2430.98	2850.65	2266.61	232.00	348.11	0.00	2846.72
Asset-II	1333.64	1917.41	1448.53	199.00	270.28	0.00	1917.81
Asset-III	1333.64	1923.49	1552.76	32.46	337.99	0.00	1923.21
Asset-IV	5352.49	7846.08	6295.39	1239.99	233.50	75.30	7844.18
Asset-Va	14496.41	5228.96	4292.55	404.94	394.55	0.00	5092.04
Asset-Vb		13749.77	12609.13	737.60	664.55	250.00	14261.28

13. Regulations 9 and 10 of the 2014 Tariff Regulations specify as follows:-

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

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

- a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- c) Increase in cost in contract packages as approved by the Commission;



- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.

...

(6) The following shall be excluded or removed from the capital cost of the existing and new project:

- a) The assets forming part of the project, but not in use;
- b) Decapitalisation of Asset;
- c) In case of hydro generating station any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State government by following a two stage transparent process of bidding; and
- d) the proportionate cost of land which is being used for generating power from generating station based on renewable energy:

Provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation;

10. Prudence Check of Capital Expenditure: The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

(1) In case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Commission from time to time: Provided that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff.”

14. The petitioner has submitted Auditor’s Certificates for all the assets in support of capital cost incurred up to COD. As per the Auditor’s Certificates, the capital cost as on COD of the assets is as given below:-



(₹ in lakh)

Asset	Capital cost as on COD	Additional capitalization			Total estimated completion cost
		2015-16	2016-17	2017-18	
Asset-I	2266.61	232.00	348.11	0.00	2846.72
Asset-II	1448.53	199.00	270.28	0.00	1917.81
Asset-III	1560.06	25.17	337.99	0.00	1923.22
Asset-IV	6396.80	1147.58	224.50	75.30	7844.18
Asset-Va	4292.55	404.94	394.55	0.00	5092.04
Asset-Vb	12609.13	737.60	664.55	250.00	14261.28

Cost Over-run

15. The petitioner vide its affidavit dated 26.4.2016 has submitted the RCE for the project. The details are as given below:-

(₹ in lakh)

Asset	COD	Apportioned cost as per FR as submitted in original petition	Revised apportioned cost as per RCE	Estimated completion cost an on 31.3.2019
Asset-I	1.10.2015	2430.98	2850.65	2846.72
Asset-II	3.10.2015	1333.64	1917.41	1917.81
Asset-III	26.2.2016	1333.64	1923.49	1923.21
Asset-IV	10.12.2015	5352.49	7846.08	7844.18
Asset-Va	12.10.2015	14496.41	5228.96	5092.04
Asset-Vb	1.10.2015		13749.77	14261.28
Total		24947.16	33516.36	33884.84

16. The completion cost of the instant assets except Asset-II and Asset-Vb is within the apportioned costs as per revised RCE and hence there is no cost over-run. However, in case of Asset-II and Asset-Vb, the completion cost exceeds the revised apportioned approved cost.

17. Rajasthan Discoms submitted that the petitioner has stated an expenditure of ₹349.17 lakh on civil works and roads, etc., but, has not provided the details of award of contracts for such civil works. Further, the reasons for cost



increase as shown in instant petition are due to increase in FERV, interest on loan, service tax, levies, cess and other expenses, etc. are on higher side. In response, the petitioner vide its affidavit dated 10.5.2016 submitted that variation in price is mainly due to price variation from the FR (i.e. October, 2008) upto October, 2014 (i.e. the period of major supplies) and is attributable to inflationary trends prevalent during the execution of project and also market forces prevailing at the time of bidding process of various packages. Further, the variation of ₹349.17 lakh in civil works is mainly due to change in design as per actual site conditions. The quantity also varies from FR estimate and executed quantity (on actual).

18. Uttar Pradesh Power Corporation Ltd. (UPPCL) requested the Commission to direct the petitioner to get the RCE approved by the competent authority, i.e. Cabinet Committee of Economic Affairs (CCEA) of GoI and then submit the same for determination of tariff. In response, the petitioner vide its affidavit dated 10.5.2016 submitted that petitioner vide its affidavit dated 26.4.2016 has already submitted the RCE.

19. The petitioner submitted that variation in total estimated completion cost for all assets in comparison to apportioned FR cost is mainly due to price variation from the FR (i.e., October 2008) up to September 2014 (i.e., the period of major supplies) and is attributable to inflationary trends prevalent during the execution of project and also market forces prevailing at the time of bidding



process of various packages. The detailed reasons for price variation is as given below:-

Asset-I, II and III:

- Increase in civil works i.e Foundation for structure, Road & drainage etc
- Awarded cost of Transformer w.r.t the estimated cost (FR Cost) arrived through competitive bidding
- The Bus bars/Conductors/insulators, Outdoor Lighting, Power & control cables for Outdoor Lighting, Grounding System, and Auxiliary system etc was not envisaged during preparation of FR, actual requirement & expenses occurred during construction work.
- Overheads charges w.r.t. the estimated cost (FR Cost) arrived during preparation of Feasibility report.
- Increase in cost on account of actual Taxes & duties paid

Asset-IV:

- increase in cost on account of land and site preparation, civil works i.e foundation for structure, township & colony, control Room, office buildings, road & drainage(not included in FR) etc.
- The 400kV substation equipment and PLCC equipment was not envisaged during preparation of FR, actual requirement of 400 kV bay extension occurs. Accordingly the cost for Substation bay equipment, control, relay & protection panel increased the estimated completion cost of the asset. The cost of substation equipment and others arrived through the competitive bidding.
- The bus bars/ conductors/ insulators, outdoor Lighting, power & control cables for outdoor lighting, grounding system, structure for switchyard, tools & plants and Auxiliary system etc was not envisaged during preparation of FR, actual requirement & expenses occurred during construction work.
- Increase in cost on account of actual Taxes & duties paid
- Awarded cost of transformer w.r.t the estimated cost (FR Cost) arrived through competitive bidding

Asset-V:

- Expenditure towards crop, tree, PTCC, land and forest compensation resulted in an increase in cost of project due to actual compensation paid on account of Right of Way (ROW) issues, based on the rates and assessment of District administration/ Revenue authorities.
- Change in route alignment. The line length, type of various towers and foundation in the FR were estimated on the basis of walk-over/



preliminary survey. However, during execution of the project, though these has been increase in cost due to increase in tower erection and quantity of civil work (viz. concrete volume, reinforcement etc), the overall cost has reduced due to reduction of line length by 16 kms due to actual route alignment.

- The cost variation on account of civil works for foundation for structure, fire water pump house, LT switchgear room, road & drainage etc. While preparation of FR, foundation for common type of structures for HVDC and 400 kV AC system were considered. However, during execution the foundation for structures executed were modified and type for gantry, tower gantry, tower with peak, tower without peak etc for HVDC and AC system were used to be based on actual site condition. Further, there has been an increase of cost due to construction of firefighting pump house and LT switchgear room essentially required for the project, which were inadvertently missed during preparation of FR.
- Cost variation is attributable to various substation equipments viz. grounding system, auxiliary system, outdoor lighting, Bus bars, Insulators, cables which were considered as lumpsum during preparation of FR. However, there is considerable change in the quantities of the sub items under each head due to change in design, which was mainly due to change in orientation of land.
- There is increase in cost of 400 kV breaker for bus sectionalizer, as the breaker was required the provision of compatibility and interface with HVDC and AC system, whereas normal breaker considered in FR. As the 400kV bus is split through bus sectionalizer, the separate bus bar protection panel was required, which led to increase in cost of control and relay panel.
- Increase in cost on account of actual Taxes & duties paid
- Communication system which was Included in the scope as per requirement during execution of the work.
- In case of Asset-Vb, the price variation was also due to higher quantity of crops & trees encountered at site. The Compensation paid as per assessment of district admin./ revenue authorities on actual ws more with respect to FR.

Time Over-run

20. As per the investment approval dated 27.2.2009, the project was scheduled to be commissioned within 54 months for the assets under Part-A and 48 months for Part-B from the date of investment approval. The assets covered in the instant petition pertains to Part-A of the transmission scheme. Hence, the



assets were to be commissioned progressively upto 27.8.2013. Asset-I, II, III, IV, Va and Vb were put under commercial operation with effect as below:-

Assets name	SCOD as per IA dtd 27.2.2009	Actual date of commercial operation	Delay in months
Asset-I	27.8.2013	1.10.2015	25 months and 4 days
Asset-II		3.10.2015	25 months and 7 days
Asset-III		26.2.2016	29 months and 30 days
Asset-IV		10.12.2015	27 months and 13 days
Asset-Va		12.10.2015	25 months and 15 days
Asset-Vb		1.10.2015	25 months and 4 days

21. The petitioner has submitted that the delay in execution is mainly due to various factors, viz. delay in land acquisition, ROW vis-à-vis law and order problem at sites, litigations, forest clearance, strikes, bandhs as given below:-

a. Opposition to Initial Project activity

The Biswanath Chariali HVDC station is located at Baghmari in Biswanath sub-division of Sonitpur district in Assam. This is a disturbed area infested with banned extremist organizations. Since the beginning of construction activities, there was persistent opposition by Villagers. The problem slowly turned acute and petitioner's officials were manhandled by miscreants at site on 24.09.2012 causing serious law & order situation. There were instances of kidnapping, ransom demand, killings and clashes with extremist organizations apart from frequent bands, strikes, picketing etc. insurgent activities occur still now. Due to serious problems at site, 1 (one) platoon of CRPF personnel was deployed at ±800 kV Biswanath Chariali station site, Baghmari w.e.f. 20.11.2012.



b. Delay in land acquisition at Biswanath Chariali HVDC terminal station and delay in commencement of construction activity due to ROW problems/closing of boundary wall

Even though land acquisition process started in the year 2005, the formal land allocation was completed in the year 2010 and 2011. Further, the formal land allocation, complete physical possession of the land was not available with the petitioner due to stiff resistance from local villagers. The petitioner started boundary wall construction works in the year 2009. There were four openings to the boundary wall making two complete thorough fares. Villagers kept using the thorough fares willfully abandoning the surrounding permanent roads to demonstrate their opposition to the construction of the project. Miscreants also took advantage of the situation and created regular disturbances amidst the extremely poor law and order situation in the area. As guided by the district administration, petitioner constructed a complete peripheral metal road of about 4 km. including 2 (two) bridges surrounding the HVDC station in January 2013 at a cost of ₹1600 lakh and appealed to the villagers to vacate the HVDC station land to facilitate closing of boundary wall and start construction. However, the villagers did not relent and regularly intimidated petitioner's officials.

A concerted effort was made on 30.4.2013 by the petitioner, State Police, District administration and CRPF to close the two thorough fares but huge law and order situation occurred at site. In the melee of the protest, miscreants burnt down a hired jeep of the petitioner and damaged vehicles of several



Police officials. 18 police personnel were also injured in the clashes. In retaliation, police had to resort firing to control the mob wherein one protester was killed. On advice of State Administration, the contractor suspended all construction activities w.e.f 30.4.2013. It took several months to remobilize the site and skeletal works started from June, 2013 with police protection amidst the open Boundary walls.

The issue of closures of Boundary walls/thorough fares was taken up by highest level of the petitioner with the Government of Assam and a final effort was made in association with district and police administration on 5.9.2013 and finally the walls were closed with great difficulty.

Land acquisition process along with boundary wall construction was completed in 5.9.2013 instead of December, 2010 (planned). Thus there was delay of around 32 months land acquisition and closing of boundary wall is due to stiff resistance from local villagers.

c. Right of Way Issues

To resolve this ROW problem, the petitioner had to design multi circuit tower from location 43/0 to dead end. Due to change in design of tower, foundation, stub, etc there was considerably delay in procurement, civil works, tower erection and stringing of the line at location no 43/0 to dead end (around 0.859 km). By adopting the special tower design i.e. multi circuit tower from location 43/0 to dead end tower, the ROW issues at the location was resolved. This delayed the commissioning of the line by 14-16 months. In this regard, the



petitioner has submitted the copies of letters submitted to Gingia Power Station, Sonitpur, Assam from 27.9.2013 to 30.3.2015 regarding assistance on account of serious RoW (Right of Way issues).

d. Statutory Clearance

Out of 57.3 km of 400 kV Balipara-Biswanath Chariali transmission line, around 1.08 km (approx.) line passes through reserved forest, highly disturbed area, hilly terrains, causing number of clearance to be obtained before starting the work of construction of transmission line in these areas. The length of the line passing through the reserved Forest area is 1.08 km/4.968 Ha. The work in the forest area could not be commenced on time due to late receipt of forest clearance. Forest clearance proposal for the subject line was submitted to Government of Assam on 16.7.2009 on priority, within 4 months from placement of contract to the implementing agency on 4.3.2009. However, forest clearance of the line was accorded only on 21.11.2012, i.e. after 40 months after submission of proposal. Generally, forest clearance takes 10-14 months. Thus, there was delay of around 24-26 months due to delay in forest clearance. In this regard, the petitioner has submitted the (i) copy of letter of forest proposal dated 16.7.2009 submitted to Government of Assam and (ii) copy of letter dated 21.11.2012 regarding approval of forest clearance.

e. Difficult Terrain Conditions

The locations in forest area were on steep hill and the same was separated from the approach by a river. After onset of rainy season in monsoon the



approach to the locations became difficult. Meanwhile, heavy floods washed away the bridge on the approach over the river creating problem in transportation of man and materials. In order to curtail the delay, a rope way was erected for material transport but due to the gradient only limited materials could be transported. Several attempts for re-construction of bridge failed due to high current in the flooded river. Ultimately, the bridge could be reconstructed after flood water was receded and all along this period progress of works suffered. Completion of work in these 4 locations took considerable time.

f. Law & order situation

In order to ensure execution and commissioning of the project well within the time, the petitioner placed all orders for supply of material and erection works pertaining to towers, substation and other related works of the said project well in time. However, during actual execution of the project there were approximately 183 bandhs, blockades and obstructions in the state of Assam by the various organizations (All Assam Student Union, KMSS, BTAD etc) which were operational in these areas. Some incidents during construction activity like threatening etc. hampered the normal working in adjacent locations. Lastly, the law and order situation at certain locations was resolved with administration support, which caused the delay in commissioning of transmission line by 24 months from the scheduled completion.



22. UPPCL has submitted that net delay of 22 months and 11 days goes unexplained and, therefore, IDC and IEDC should be reduced on the basis of Revised Cost Estimate by 28.28% in respect of Assets-I to IV. UPPCL has further submitted that, in case of Asset-V, reasons of time over-run like statutory clearances, difficult terrain conditions, law and order situations, right of way, etc. have been explained by the petitioner and, therefore, the same should be considered. Further, Rajasthan discoms submitted that a careful study of the events reveal that permission to start preliminary works was accorded on 20.6.2008. As regards opposition to initial project activity, there is no justifiable reason to support the time over-run till 24.9.2012, when one platoon of CRPF personnel was deployed for ensuring physical security at the site and ensuring construction of boundary walls. Other references of steep hills and locations in forest area were already well-known before the commencement of work. Therefore, it is unjustifiable that during the period from 20.6.2012 to 29.4.2012, such problems resulted in time over-run. Thus, the petitioner fails to justify the time over-run. In response, the petitioner vide its affidavit dated 10.5.2016 has submitted that the petitioner in its petition has provided the details and documents related to time over-run in the commissioning of assets. In this regard, the petitioner has also provided the chronology of land acquisition at Biswanath Chariyali HVDC terminal station. Such delay was beyond the control of petitioner and, therefore, the petitioner has prayed to condone the delay in completion of assets in accordance with Regulation 12(2)(i) of the 2014 Tariff Regulations.



23. As regards the time over-run during the period from 16.7.2009 to 21.11.2012, the petitioner has submitted that the delay was on account of delay in forest approval. Generally, forest clearance takes 10-14 months. Thus, there was delay of around 24 months due to delay in forest clearance. Thereafter, regarding the time over-run during the period from 27.9.2013 to 30.3.2015, the petitioner has submitted that the delay was on account of serious RoW (Right of Way issues). Thus, there was delay of another 14 months due serious RoW (Right of Way issues). We are of the view that the total time over-run of 38 months was on account of delay in forest approval and serious RoW (Right of Way issues) and this was beyond the control of the petitioner. Hence, the entire time over-run in case of all the assets on account of forest approval and serious RoW issues is condoned.

24. The Hon'ble Appellate Tribunal for Electricity in its Judgment dated 27.4.2011 in Appeal No.72/2010 has held that the additional cost due to time over-run due to the factors beyond the control of project developer shall be capitalized. As discussed in above, the time over-run of 24 months on account of delay in forest approval and 14 months on account of serious RoW issues is beyond the control of the petitioner and it cannot be attributed to the petitioner. As per the judgement of Hon'ble Tribunal, the additional cost due to time over-run not attributable to the petitioner shall be capitalized. Accordingly, the entire time over-run in all the assets is condoned and accordingly IDC and IEDC for the delay are allowed to be capitalised.



Assets name	SCOD as per IA dtd 17.3.2011	Actual Date of commercial operation	Delay in months	Delay condoned by the Commission	Delay not condoned by the Commission
Asset-I	27.8.2013	1.10.2015	25 months and 4 days	25 months and 4 days	0 months
Asset-II		3.10.2015	25 months and 7 days	25 months and 7 days	0 months
Asset-III		26.2.2016	29 months and 30 days	29 months and 30 days	0 months
Asset-IV		10.12.2015	27 months and 13 days	27 months and 13 days	0 months
Asset-Va		12.10.2015	25 months and 15 days	25 months and 15 days	0 months
Asset-Vb		1.10.2015	25 months and 4 days	25 months and 4 days	0 months

IDC and IEDC

25. The petitioner was directed to provide the computation of IDC and IEDC on cash basis (i) from date of infusion of debt fund to scheduled COD and (ii) from scheduled COD to actual COD. In response, the petitioner vide its affidavits dated 24.2.2016, 30.3.2016 and 11.5.2016 submitted the breakup of IDC and IEDC as follows:-

(₹ in lakh)

Statement showing IDC and IEDC	Asset-I		Asset-II	
	IDC	IEDC	IDC	IEDC
Total IDC/IEDC as per certificate	217.68	39.25	143.22	26.81
IDC/IEDC discharged upto SCOD (27.8.2013)	36.45	9.53	22.01	5.74
IDC/IEDC discharged from SCOD to actual COD	181.23	29.72	121.21	21.07

(₹ in lakh)

Statement showing IDC and IEDC	Asset-III		Asset-IV	
	IDC	IEDC	IDC	IEDC
Total IDC/IEDC as per certificate	147.81	27.63	674.93	113.23
IDC/IEDC discharged upto 31.3.2015	100.65	20.19	451.24	87.18
IDC/IEDC discharged from 1.4.2015 to actual COD	47.16	7.44	223.69	26.05



(₹ in lakh)

Statement showing IDC and IEDC	Asset-Va		Asset-Vb	
	IDC	IEDC	IDC	IEDC
Total IDC/IEDC as per certificate	479.15	139.04	1576.14	581.16
IDC/IEDC discharged upto SCOD (27.8.2013)	191.50	81.24	1104.43	415.24
IDC/IEDC discharged from SCOD to actual COD	287.65	57.80	471.71	165.92

26. Further, the petitioner also submitted the Auditor's Certificate for all the assets. The petitioner has also submitted the details of IDC claimed on cash basis is as given below:-

(₹ in lakh)

Particulars	Asset-I	Asset-II	Asset-III	Asset-IV	Asset-Va	Asset-Vb
IDC as per Certificate	217.68	143.22	147.81	674.93	479.15	1576.14
IDC discharged upto COD	217.68	143.22	140.52	573.52	479.15	1576.14
IDC discharged in 2015-16	0.00	0.00	7.29	92.41	0.00	0.00
IDC to be discharged in 2016-17	0.00	0.00	0.00	0.00	0.00	0.00

27. Further, the petitioner has submitted that entire IEDC is on cash basis and is discharged upto COD. As discussed above, we have condoned the entire time over-run in case of all the assets.

Initial Spares

28. Regulation 13(d) of the 2014 Tariff Regulations provides that initial spares shall be capitalised as a percentage of plant and machinery cost upto cut-off date, subject to following ceiling norms:-

“(d) Transmission System	
Transmission line:	1.00%
Transmission sub-station (Green Field):	4.00%
Transmission sub-station (Brown Field):	6.00%”



29. The petitioner has claimed initial spares for the assets as given in table below. The initial spares for transmission line and sub-station (green-field) claimed by the petitioner are within the specified ceiling limits except in case of Asset-Va as given below:-

(₹ in lakh)

Description Sub-station (including PLCC)	Cut-off date	Plant & Machinery Cost as on cut-off date	Initial spares claimed	Ceiling limits as per Regulation 8 of the 2009 Tariff Regulation	Initial spares worked out as per Regulations	Excess initial spares claimed
		(a)	(b)	(c)	(d)= ((a-b)*c)/(100-c)%	(e)=(d)-(b)
Transmission Line						
Asset-Va	31.3.2018	1384.98	13.99	1.00%	13.85	0.14
Sub-station (Greenfield)						
Asset-I	31.3.2018	1907.48	0.00	4.00%	79.48	0.00
Asset-II	31.3.2018	1323.03	31.74	4.00%	53.80	0.00
Asset-III	31.3.2019	1323.03	31.74	4.00%	53.80	0.00
Asset-IV	31.3.2018	6085.81	69.46	4.00%	250.68	0.00
Asset-Va	31.3.2018	2291.67	134.37	4.00%	89.89	44.48

30. However, in case of Asset-Vb, as there is heavy cost variation and the capital cost has been restricted to apportioned approved cost, we have worked out the initial spares as follows:-

(₹ in lakh)

Descripti on Sub-station (including PLCC)	Cut-off date	Claimed Capital cost till cut-off date (including initial spares)	Approved Capital cost as on cut-off date (excluding initial spares)	Initial spares claimed	Ceiling limits as per Regulation 13 of the 2014 Tariff Regulation	Initial spares worked out and allowed	Excess initial spares claimed
			(a)	(b)	(c)	(d)= a*c/(100-c)%	(e)=(d)-(b)
Transmission Line							



Description on Sub- station (including PLCC)	Cut-off date	Claimed Capital cost till cut-off date (including initial spares)	Approved Capital cost as on cut-off date (excluding initial spares)	Initial spares claimed	Ceiling limits as per Regulation 13 of the 2014 Tariff Regulation	Initial spares worked out and allowed	Excess initial spares claimed
			(a)				
Asset-Vb	31.3.2018	8608.53	8635.56	0.00	1.00%	87.23	0.00
Sub-station (Greenfield)							
Asset-Vb	31.3.2018	2291.67	2164.07	134.37	4.00%	90.17	44.20

31. The capital cost for the assets has been worked out by adjusting IDC/IEDC and excess initial spares as given below:-

Particulars	(₹ in lakh)					
	Asset-I	Asset-II	Asset-III	Asset-IV	Asset-Va	Asset-Vb
Capital Cost as on COD as per Management Certificate/Auditor's Certificate	2266.61	1448.53	1560.06	6396.80	4292.55	12609.13
Total IDC/IEDC disallowed by the Commission	0.00	0.00	0.00	0.00	0.00	0.00
Accrued IDC and IEDC discharged in 2015-16	0.00	0.00	7.29	92.41	0.00	0.00
Capital Cost as on COD (after deducting accrued IDC discharged in 2015-16)	2266.61	1448.53	1552.77	6295.39	4292.55	12609.13
Excess Initial Spares (for transmission line)	0.00	0.00	0.00	0.00	0.14	0.00
Excess Initial Spares (for sub-station)	0.00	0.00	0.00	0.00	44.48	44.20
Capital Cost as on COD (after deducting accrual IDC/IEDC and excess initial spares)	2266.61	1448.53	1552.77	6295.39	4247.93	12564.93

32. The capital cost as on COD for the assets, as worked out above is within the approved apportioned cost. Accordingly, capital cost as worked out as on COD is allowed and considered for the purpose of tariff computation for 2014-19 tariff period on provisional basis, which shall be trued up at the time of truing up of tariff for 2014-19 period.



Additional Capital Expenditure

33. The petitioner has claimed additional capital expenditure for the assets during tariff period 2014-19, towards balance and retention payments under Clause 1 of Regulation 14 of the 2014 Tariff Regulations.

34. Rajasthan discoms submitted that additional capitalization presented by the petitioner is more on normative basis rather than on actual and, therefore, prudent check is sought for the same. In response, the petitioner vide its affidavit dated 10.5.2016 submitted that additional capital expenditure incurred after COD has been claimed Regulation 14 of the 2014 Tariff Regulations.

35. Clause 1, sub-clause (i) of Regulation 14 of the 2014 Tariff Regulations provides as follows:

“(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:

.....

(i) Undischarged liabilities recognized to be payable at a future date;

36. It is observed that total estimated completion cost including additional capitalization for 2015-16, 2016-17 and 2017-18 is within the approved apportioned cost for both all the assets except Asset-II and Asset-Vb as stated in para 15 above. Therefore, we have restricted the completion cost to approved apportioned cost in case of Asset-II and Asset-Vb.

37. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” as follows:-



“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 a year, the cut - off date shall be 31st March of the year closing after three years of the year of commercial operation.”

38. The cut-off date for Asset-I, II, IV, Va and Vb works out to be 31.3.2018 and Asset-III as 31.3.2019. The additional capitalization claimed by the petitioner is within the cut-off date. The additional capitalization for 2015-16, 2016-17 and 2017-18 is allowed under Regulation 14(1)(i) of 2014 Tariff Regulations for all the assets subject to ceiling of approved apportioned cost. The details of additional capitalization allowed is as follows:-

(₹ in lakh)

Name of the element	Particulars	Approved Apportioned Cost	Expenditure upto COD*	Additional Capital Expenditure [#]				Total estimated completion cost
				2015-16	2016-17	2017-18	Total	
Asset-I	Petitioner's Claim	2850.65	2266.61	232.00	348.11	0.00	580.11	2846.72
	Approved in this order	2850.65	2266.61	232.00	348.11	0.00	580.11	2846.72
Asset-II	Petitioner's Claim	1917.41	1448.53	199.00	270.28	0.00	469.28	1917.81
	Approved in this order	1917.41	1448.53	199.00	269.88	0.00	468.88	1917.41
Asset-III	Petitioner's Claim	1923.49	1552.77 (=1560.06-7.29)	32.46 (25.17+7.29)	337.99	0.00	370.45	1923.21
	Approved in this order	1923.49	1552.77 (=1560.06-7.29)	32.46 (25.17+7.29)	337.99	0.00	370.45	1923.22
Asset-IV	Petitioner's Claim	7846.08	6295.39 (=6396.80-92.41-9.00)	1239.99 (1147.58+92.41)	233.50 (224.50+9.00)	75.30	1548.79	7844.18
	Approved in this order	7846.08	6295.39 (=6396.80-92.41-9.00)	1239.99 (1147.58+92.41)	233.50 (224.50+9.00)	75.30	1548.79	7844.18
Asset-Va	Petitioner's Claim	5228.96	4292.55	404.94	394.55	0.00	799.49	5092.04
	Approved in this order	5228.96	4247.93 (=4292.55 - 0.14-44.48)^	404.94	394.55	0.00	799.49	5047.42
Asset-Vb	Petitioner's	13749.77	12609.13	737.60	664.55	250.00	1652.15	14261.28



Name of the element	Particulars	Approved Apportioned Cost	Expenditure upto COD*	Additional Capital Expenditure [#]				Total estimated completion cost
				2015-16	2016-17	2017-18	Total	
	Claim							
	Approved in this order	13749.77	12564.93 (=12609.13-0.00-44.20) [^]	737.60	447.24	0.00	1184.84	13749.77

* Capital Cost after deducting accrued IDC discharged

Additional capital expenditure after addition of IDC discharged in respective years

[^] Capital cost of Asset-Va and Asset-Vb after deducting excess initial spares for transmission line and substation

Debt: Equity Ratio

39. Clause 3 of Regulation 19 of the 2014 Tariff Regulations specifies as under:-

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

Provided that:

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

40. The petitioner has considered debt:equity ratio as 80:20 as on COD for all the assets. Further, the petitioner has considered debt:equity ratio as 70:30 for all the assets for additional capitalization during the tariff period 2014-19 except Asset-III in 2015-16. The petitioner has claimed debt:equity ratio as 80.04:19.96 for Asset-III in 2015-16. We have considered the petitioner’s submission. The details of the debt:equity as on COD and for the additional capital expenditure considered for the purpose of tariff for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Asset-I		
Particulars	Capital cost as on COD	Estimated completion cost including additional capitalization



	Amount	(%)	Amount	(%)
Debt	1813.29	80.00	2219.37	77.96
Equity	453.32	20.00	627.36	22.04
Total	2266.61	100.00	2846.72	100.00

(₹ in lakh)

Asset-II				
Particulars	Capital cost as on COD		Estimated completion cost including additional capitalization	
	Amount	(%)	Amount	(%)
Debt	1158.82	80.00	1487.04	77.55
Equity	289.71	20.00	430.37	22.45
Total	1448.53	100.00	1917.41	100.00

(₹ in lakh)

Asset-III				
Particulars	Capital cost as on COD		Estimated completion cost including additional capitalization	
	Amount	(%)	Amount	(%)
Debt	1242.21	80.00	1504.78	78.24
Equity	310.55	20.00	418.43	21.76
Total	1552.77	100.00	1923.22	100.00

(₹ in lakh)

Asset-IV				
Particulars	Capital cost as on COD		Estimated completion cost including additional capitalization	
	Amount	(%)	Amount	(%)
Debt	5036.31	80.00	6120.47	78.03
Equity	1259.08	20.00	1723.72	21.97
Total	6295.39	100.00	7844.18	100.00

(₹ in lakh)

Asset-Va				
Particulars	Capital cost as on COD		Estimated completion cost including additional capitalization	
	Amount	(%)	Amount	(%)
Debt	3398.33	80.00	3957.98	78.42
Equity	849.60	20.00	1089.44	21.58
Total	4247.93	100.00	5047.42	100.00

(₹ in lakh)

Asset-Vb				
Particulars	Capital cost as on COD		Estimated completion cost including additional capitalization	
	Amount	(%)	Amount	(%)



	Amount	(%)	Amount	(%)
Debt	10051.94	80.00	10881.34	79.14
Equity	2512.99	20.00	2868.43	20.86
Total	12564.93	100.00	13749.77	100.00

Interest on Loan (“IOL”)

41. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations are reproduced as under:-

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

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

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

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

42. The weighted average rate of IOL has been considered on the basis of rate prevailing as on COD. The petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2014-19 tariff period will be adjusted at the time of truing up.

43. We have considered the petitioner’s submissions. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. Further, with regard to floating rate of interest, variation in interest rate if any shall be considered at the time of true up. The details of weighted average rate of interest are placed at **Annexure-I** and the IOL has been worked out and allowed as follows:-



(₹ in lakh)

Asset-I				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	1813.29	1975.69	2219.37	2219.37
Cumulative Repayment upto DOCO/previous year	0.00	55.07	178.44	309.72
Net Loan-Opening	1813.29	1920.62	2040.92	1909.64
Additions during the year	162.40	243.68	0.00	0.00
Repayment during the year	55.07	123.37	131.28	131.28
Net Loan-Closing	1920.62	2040.92	1909.64	1778.37
Average Loan	1866.95	1980.77	1975.28	1844.00
Rate of Interest (%)	9.3144	9.3096	9.2981	9.2843
Interest	86.95	184.40	183.66	171.20

(₹ in lakh)

Asset-II				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	1158.82	1298.12	1487.04	1487.04
Cumulative Repayment upto DOCO/previous year	0.00	34.85	116.45	204.40
Net Loan-Opening	1158.82	1263.27	1370.59	1282.64
Additions during the year	139.30	188.92	0.00	0.00
Repayment during the year	34.85	81.60	87.95	87.95
Net Loan-Closing	1263.27	1370.59	1282.64	1194.69
Average Loan	1211.05	1316.93	1326.61	1238.66
Rate of Interest (%)	9.3729	9.3665	9.3510	9.3472
Interest	56.13	123.35	124.05	115.78

(₹ in lakh)

Asset-III				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	1242.21	1268.19	1504.78	1504.78
Cumulative Repayment upto DOCO/previous year	0.00	6.80	86.80	174.95
Net Loan-Opening	1242.21	1261.39	1417.98	1329.83
Additions during the year	25.98	236.59	0.00	0.00
Repayment during the year	6.80	80.00	88.15	88.15



Asset-III				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Net Loan-Closing	1261.39	1417.98	1329.83	1241.69
Average Loan	1251.80	1339.69	1373.91	1285.76
Rate of Interest (%)	9.1637	9.1536	9.1474	9.1467
Interest	10.97	122.63	125.68	117.60

(₹ in lakh)

Asset-IV				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	5036.31	5904.31	6067.76	6120.47
Cumulative Repayment upto DOCO/previous year	0.00	108.10	495.67	889.66
Net Loan-Opening	5036.31	5796.20	5572.09	5230.81
Additions during the year	867.99	163.45	52.71	0.00
Repayment during the year	108.10	387.56	393.99	395.25
Net Loan-Closing	5796.20	5572.09	5230.81	4835.56
Average Loan	5416.26	5684.14	5401.45	5033.18
Rate of Interest (%)	9.2138	9.2120	9.2047	9.1934
Interest	154.08	523.62	497.19	462.72

(₹ in lakh)

Asset-Va				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	3398.33	3681.79	3957.98	3957.98
Cumulative Repayment upto DOCO/previous year	0.00	102.67	339.92	586.49
Net Loan-Opening	3398.33	3579.12	3618.05	3371.49
Additions during the year	283.46	276.19	0.00	0.00
Repayment during the year	102.67	237.25	246.56	246.56
Net Loan-Closing	3579.12	3618.05	3371.49	3124.93
Average Loan	3488.72	3598.59	3494.77	3248.21



Asset-Va				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Rate of Interest (%)	9.1157	9.1110	9.0995	9.0835
Interest	149.45	327.87	318.01	295.05

(₹ in lakh)

Asset-Vb				
Details of Loan	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	10051.94	10568.26	10881.34	10881.34
Cumulative Repayment upto DOCOP/previous year	0.00	333.12	1028.67	1735.27
Net Loan-Opening	10051.94	10235.14	9852.67	9146.06
Additions during the year	516.32	313.07	0.00	0.00
Repayment during the year	333.12	695.55	706.61	706.61
Net Loan-Closing	10235.14	9852.67	9146.06	8439.45
Average Loan	10143.54	10043.91	9499.36	8792.76
Rate of Interest (%)	9.2085	9.2023	9.1893	9.1743
Interest	467.04	924.27	872.92	806.68

Return on Equity("ROE")

44. Clause (1) & (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...

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.”

“25. Tax on Return on Equity:

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

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

45. The petitioner has computed ROE at the rate of 19.610% in case of Assets- I, II, Va and IV and 19.705% in case of Assets-III and IV for tariff period 2014-19 after grossing up the ROE with MAT rate as per the above Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

46. 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.



47. We have computed ROE at the rate of 19.610% for tariff period 2014-19 after grossing up the ROE with MAT rate as per the above Regulation. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. Accordingly, the ROE allowed is given below:-

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	453.32	522.92	627.36	627.36
Addition due to Additional Capitalisation	69.60	104.43	0.00	0.00
Closing Equity	522.92	627.36	627.36	627.36
Average Equity	488.12	575.14	627.36	627.36
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	47.86	112.78	123.02	123.02

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	289.71	349.41	430.37	430.37
Addition due to Additional Capitalisation	59.70	80.96	0.00	0.00
Closing Equity	349.41	430.37	430.37	430.37
Average Equity	319.56	389.89	430.37	430.37



Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	30.99	76.46	84.40	84.40

(₹ in lakh)

Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	310.55	317.03	418.43	418.43
Addition due to Additional Capitalisation	6.48	101.40	0.00	0.00
Closing Equity	317.03	418.43	418.43	418.43
Average Equity	313.79	367.73	418.43	418.43
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	5.88	72.11	82.05	82.05

(₹ in lakh)

Asset-IV				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	1259.08	1631.08	1701.13	1723.72
Addition due to Additional Capitalisation	372.00	70.05	22.59	0.00
Closing Equity	1631.08	1701.13	1723.72	1723.72
Average Equity	1445.08	1666.10	1712.42	1723.72
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	87.49	326.72	335.81	338.02

(₹ in lakh)

Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	849.60	971.08	1089.44	1089.44
Addition due to Additional Capitalisation	121.48	118.36	0.00	0.00
Closing Equity	971.08	1089.44	1089.44	1089.44
Average Equity	910.34	1030.26	1089.44	1089.44



Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	83.89	202.03	213.64	213.64

(₹ in lakh)

Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Equity	2512.99	2734.27	2868.43	2868.43
Addition due to Additional Capitalisation	221.28	134.17	0.00	0.00
Closing Equity	2734.27	2868.43	2868.43	2868.43
Average Equity	2623.63	2801.35	2868.43	2868.43
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT rate for the year (%)	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)	257.25	549.34	562.50	562.50

Depreciation

48. Clause (67) of Regulation 3 of the 2014 Tariff Regulations defines useful life as follows:-

“**useful life**’ in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:-

.....

- (c) AC and DC Sub-station: 25 years
- (d) Gas Insulated Sub-station: 25 years
- (e) Transmission line (including HVAC & HVDC): 35 years”

49. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

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



operation of the asset for part of the year, depreciation shall be charged on pro rata basis”

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

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

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

50. The petitioner in its petition has computed depreciation considering capital cost as on COD of ₹2266.61 lakh, ₹1448.53 lakh, ₹1552.76 lakh, ₹6295.39 lakh, ₹4292.55 lakh and ₹12609.13 lakh for Assets- I, II, III, IV, Va and Vb, respectively.

51. As per Clause 67 of Regulation 3 of the 2014 Tariff Regulations, weighted average value of asset as on COD has been considered to work out the weighted average life of the transmission system as 25 years for Asset-I, II, III and IV, 29 years for Asset-Va and 33 years for Asset-Vb.

52. We have computed depreciation considering approved capital cost as on COD and allowed additional capitalisation. Depreciation is allowed as provided under Regulation 27 of the 2014 Tariff Regulations. The details of the depreciation allowed are given hereunder:-

(₹ in lakh)

Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	2266.61	2498.61	2846.72	2846.72
Additional Capitalization	232.00	348.11	0.00	0.00



Asset-I				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Closing Gross block	2498.61	2846.72	2846.72	2846.72
Average Gross block	2382.61	2672.67	2846.72	2846.72
Rate of Depreciation (%)	4.733	4.715	4.704	4.704
Depreciable Value	2094.11	2355.16	2511.81	2511.81
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	25	24	23	22
Remaining Depreciable Value	2094.11	2300.09	2333.37	2202.09
Depreciation	55.07	123.37	131.28	131.28

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	1448.53	1647.53	1917.41	1917.41
Additional Capitalization	199.00	269.88	0.00	0.00
Closing Gross block	1647.53	1917.41	1917.41	1917.41
Average Gross block	1548.03	1782.47	1917.41	1917.41
Rate of Depreciation (%)	4.723	4.726	4.724	4.724
Depreciable Value	1342.99	1553.99	1675.43	1675.43
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	25	24	23	22
Remaining Depreciable Value	1342.99	1519.13	1558.98	1471.03
Depreciation	34.85	81.60	87.95	87.95

(₹ in lakh)

Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	1552.77	1585.23	1923.22	1923.22
Additional Capitalization	32.46	337.99	0.00	0.00
Closing Gross block	1585.23	1923.22	1923.22	1923.22
Average Gross block	1569.00	1754.23	1923.22	1923.22
Rate of Depreciation (%)	4.696	4.711	4.720	4.720
Depreciable Value	1361.98	1528.56	1680.66	1680.66



Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	25	24	23	22
Remaining Depreciable Value	1361.98	1521.77	1593.86	1505.71
Depreciation	6.80	80.00	88.15	88.15

(₹ in lakh)

Asset-IV				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	6295.39	7535.38	7768.88	7844.18
Additional Capitalization	1239.99	233.50	75.30	0.00
Closing Gross block	7535.38	7768.88	7844.18	7844.18
Average Gross block	6915.39	7652.13	7806.53	7844.18
Rate of Depreciation (%)	5.063	5.065	5.047	5.039
Depreciable Value	6223.85	6886.92	7025.88	7059.76
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	25	24	23	22
Remaining Depreciable Value	6223.85	6778.81	6530.21	6170.10
Depreciation	108.10	387.56	393.99	395.25

(₹ in lakh)

Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	4247.93	4652.87	5047.42	5047.42
Additional Capitalization	404.94	394.55	0.00	0.00
Closing Gross block	4652.87	5047.42	5047.42	5047.42
Average Gross block	4450.40	4850.14	5047.42	5047.42
Rate of Depreciation (%)	4.972%	4.949%	4.940%	4.940%
Depreciable Value	3955.12	4314.89	4492.44	4492.44
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	29	28	27	26



Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Remaining Depreciable Value	3955.12	4212.22	4152.51	3905.95
Depreciation	102.67	237.25	246.56	246.56

(₹ in lakh)

Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	12564.93	13302.53	13749.77	13749.77
Additional Capitalization	737.60	447.24	0.00	0.00
Closing Gross block	13302.53	13749.77	13749.77	13749.77
Average Gross block	12933.73	13526.15	13749.77	13749.77
Rate of Depreciation (%)	5.174	5.164	5.160	5.160
Depreciable Value	11590.13	12123.31	12324.56	12324.56
Elapsed Life of the asset at beginning of the year	0	1	2	3
Weighted Balance Useful life of the asset	33	32	31	30
Remaining Depreciable Value	11590.13	11790.18	11295.90	10589.29
Depreciation	333.12	695.55	706.61	706.61

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

53. The petitioner has computed normative O&M Expenses as per sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. We have considered the petitioner’s submission. The O&M Expenses has been worked out as given hereunder:-

(₹ in lakh)

Asset-I					
Particulars		2015-16	2016-17	2017-18	2018-19
Actual (No. of bays)	400 kV bay	1	1	1	1
	132 kV and below bays	1	1	1	1
Norms as per Regulation	400 kV bay(₹lakh/bay)	62.30	64.37	66.51	68.71
	132 kV and below bays (₹lakh/bay)	31.15	32.18	33.25	34.36
Total		46.73	96.55	99.76	103.07



(₹ in lakh)

Asset-II					
Particulars		2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Actual (No. of bays)	400 kV bay	1	1	1	1
Norms as per Regulation	400 kV bay (₹lakh/bay)	62.30	64.37	66.51	68.71
Total		30.81	64.37	66.51	68.71

(₹ in lakh)

Asset-III					
Particulars		2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Actual (No. of bays)	400 kV bay	1	1	1	1
Norms as per Regulation	400 kV bay (₹lakh/bay)	62.30	64.37	66.51	68.71
Total		5.96	64.37	66.51	68.71

(₹ in lakh)

Asset-IV					
Particulars		2015-16	2016-17	2017-18	2018-19
Actual (No. of bays)	400 kV bay	1	1	1	1
	220 kV bay	3	1	1	1
Norms as per Regulation	400 kV bay(₹lakh/bay)	62.30	64.37	66.51	68.71
	220 kV bay (₹lakh/bay)	43.61	45.06	46.55	48.10
Total		59.63	199.55	206.16	213.01

(₹ in lakh)

Asset-Va					
Particulars		2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Actual (No. of bays)	400 kV bay	2	2	2	2
Norms as per Regulation	400 kV bay (₹lakh/bay)	62.30	64.37	66.51	68.71
Total		58.56	128.74	133.02	137.42

(₹ in lakh)

Asset-Vb					
Particulars		2015-16	2016-17	2017-18	2018-19
Actual line length (km)	Double Circuit (Twin & Triple Conductor)	56.44	56.44	56.44	56.44



Asset-Vb					
Particulars		2015-16	2016-17	2017-18	2018-19
	Multi Circuit (Bundled conductor with four or more sub-conductors)	0.86	0.86	0.86	0.86
Actual (No. of bays)	400 kV bay	2	2	2	2
Norms as per Regulation	Double Circuit (Twin & Triple Conductor) (₹lakh/km)	0.731	0.755	0.780	0.806
	Multi Circuit (Bundled conductor with four or more sub-conductors) (₹lakh/km)	1.925	1.989	2.055	2.123
	400 kV bay(₹lakh/bay)	62.30	64.37	66.51	68.71
Total		83.76	173.06	178.81	184.74

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

55. 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.

56. The details of O&M Expenses allowed are given hereunder:-



(₹ in lakh)

Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Asset-I	46.73	96.55	99.76	103.07
Asset-II	30.81	64.37	66.51	68.71
Asset-III	5.96	64.37	66.51	68.71
Asset-IV	59.63	199.55	206.16	213.01
Asset-Va	58.56	128.74	133.02	137.42
Asset-Vb	83.76	173.06	178.81	184.74

Interest on Working Capital (“IWC”)

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

(i) Receivables

As per Regulation 28(1) (c) (i) of the 2014 Tariff Regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis of 2 months transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

(ii) Maintenance Spares

Regulation 28 (1) (c) (ii) of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses from 1.4.2014. The petitioner has claimed maintenance spares for the instant



asset and value of maintenance spares has accordingly been worked out as 15% of O&M Expenses.

(iii) O & M Expenses

Regulation 28 (1) (c) (iii) of the 2014 Tariff Regulations provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O & M Expenses for the instant asset and value of O & M Expenses has accordingly been worked out by considering 1 month O&M Expenses.

(iv) Rate of interest on working capital

Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later. Further, the Bank Rate' means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points).

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

(₹ in lakh)
Asset-I



Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	7.01	14.48	14.96	15.46
O & M expenses	3.89	8.05	8.31	8.59
Receivables	40.59	88.69	92.22	90.68
Total	51.49	111.22	115.50	114.73
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	6.95	15.01	15.59	15.49

(₹ in lakh)

Asset-II				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	4.62	9.66	9.98	10.31
O & M expenses	2.57	5.36	5.54	5.73
Receivables	26.22	59.30	62.23	61.21
Total	33.41	74.32	77.75	77.24
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	4.51	10.03	10.50	10.43

(₹ in lakh)

Asset-III				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	0.89	9.66	9.98	10.31
O & M expenses	0.50	5.36	5.54	5.73
Receivables	5.08	58.17	62.15	61.16
Total	6.47	73.19	77.66	77.19
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	0.87	9.88	10.48	10.42

(₹ in lakh)

Asset-IV				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	8.94	29.93	30.92	31.95
O & M expenses	4.97	16.63	17.18	17.75
Receivables	70.11	246.16	245.46	241.38
Total	84.02	292.72	293.57	291.08
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	11.34	39.52	39.63	39.30



(₹ in lakh)

Asset-Va				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	8.78	19.31	19.95	20.61
O & M expenses	4.88	10.73	11.09	11.45
Receivables	67.59	153.44	156.08	152.94
Total	81.25	183.48	187.12	185.01
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	10.97	24.77	25.26	24.98

(₹ in lakh)

Asset-Vb				
Particulars	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	12.56	25.96	26.82	27.71
O & M expenses	6.98	14.42	14.90	15.39
Receivables	195.02	400.28	396.67	386.42
Total	214.56	440.67	438.39	429.52
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest	28.97	59.49	59.18	57.99

Annual Transmission Charges

59. The detailed computation of the various components of the annual fixed charges for the transmission asset for the tariff period 2014-19 is summarised below:-

(₹ in lakh)

Particulars	Asset-I			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	2266.61	2498.61	2846.72	2846.72
Additional Capitalisation	232.00	348.11	0.00	0.00
Closing Gross Block	2498.61	2846.72	2846.72	2846.72
Average Gross Block	2382.61	2672.67	2846.72	2846.72
Depreciation				
Rate of Depreciation	4.733	4.715	4.704	4.704
Depreciable Value	2094.11	2355.16	2511.81	2511.81
Elapsed Life of the assets at beginning of the year	0	1	2	3



Particulars	Asset-I			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	2094.11	2300.09	2333.37	2202.09
Depreciation	55.07	123.37	131.28	131.28
Interest on Loan				
Gross Normative Loan	1813.29	1975.69	2219.37	2219.37
Cumulative Repayment upto Previous Year	0.00	55.07	178.44	309.72
Net Loan-Opening	1813.29	1920.62	2040.92	1909.64
Additions	162.40	243.68	0.00	0.00
Repayment during the year	55.07	123.37	131.28	131.28
Net Loan-Closing	1920.62	2040.92	1909.64	1778.37
Average Loan	1866.95	1980.77	1975.28	1844.00
Weighted Average Rate of Interest on Loan (%)	9.3144	9.3096	9.2981	9.2843
Interest	86.95	184.40	183.66	171.20
Return on Equity				
Opening Equity	453.32	522.92	627.36	627.36
Additions	69.60	104.43	0.00	0.00
Closing Equity	522.92	627.36	627.36	627.36
Average Equity	488.12	575.14	627.36	627.36
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	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)	47.86	112.78	123.02	123.02
Interest on Working Capital				
Maintenance Spares	7.01	14.48	14.96	15.46
O & M expenses	3.89	8.05	8.31	8.59
Receivables	40.59	88.69	92.22	90.68
Total	51.49	111.22	115.50	114.73
Interest	6.95	15.01	15.59	15.49
Annual Transmission Charges				
Depreciation	55.07	123.37	131.28	131.28
Interest on Loan	86.95	184.40	183.66	171.20
Return on Equity	47.86	112.78	123.02	123.02
Interest on Working Capital	6.95	15.01	15.59	15.49
O & M Expenses	46.73	96.55	99.76	103.07
Total	243.55	532.12	553.32	544.06

(₹ in lakh)

Particulars	Asset-II
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	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	1448.53	1647.53	1917.41	1917.41
Additional Capitalisation	199.00	269.88	0.00	0.00
Closing Gross Block	1647.53	1917.41	1917.41	1917.41
Average Gross Block	1548.03	1782.47	1917.41	1917.41
Depreciation				
Rate of Depreciation	4.723	4.726	4.724	4.724
Depreciable Value	1342.99	1553.99	1675.43	1675.43
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	1342.99	1519.13	1558.98	1471.03
Depreciation	34.85	81.60	87.95	87.95
Interest on Loan				
Gross Normative Loan	1158.82	1298.12	1487.04	1487.04
Cumulative Repayment upto Previous Year	0.00	34.85	116.45	204.40
Net Loan-Opening	1158.82	1263.27	1370.59	1282.64
Additions	139.30	188.92	0.00	0.00
Repayment during the year	34.85	81.60	87.95	87.95
Net Loan-Closing	1263.27	1370.59	1282.64	1194.69
Average Loan	1211.05	1316.93	1326.61	1238.66
Weighted Average Rate of Interest on Loan (%)	9.3729	9.3665	9.3510	9.3472
Interest	56.13	123.35	124.05	115.78
Return on Equity				
Opening Equity	289.71	349.41	430.37	430.37
Additions	59.70	80.96	0.00	0.00
Closing Equity	349.41	430.37	430.37	430.37
Average Equity	319.56	389.89	430.37	430.37
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for the year 2013-14 (%)	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)	30.99	76.46	84.40	84.40
Interest on Working Capital				
Maintenance Spares	4.62	9.66	9.98	10.31
O & M expenses	2.57	5.36	5.54	5.73
Receivables	26.22	59.30	62.23	61.21
Total	33.41	74.32	77.75	77.24
Interest	4.51	10.03	10.50	10.43



Particulars	Asset-II			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Annual Transmission Charges				
Depreciation	34.85	81.60	87.95	87.95
Interest on Loan	56.13	123.35	124.05	115.78
Return on Equity	30.99	76.46	84.40	84.40
Interest on Working Capital	4.51	10.03	10.50	10.43
O & M Expenses	30.81	64.37	66.51	68.71
Total	157.30	355.81	373.40	367.26

(₹ in lakh)

Particulars	Asset-III			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	1552.77	1585.23	1923.22	1923.22
Additional Capitalisation	32.46	337.99	0.00	0.00
Closing Gross Block	1585.23	1923.22	1923.22	1923.22
Average Gross Block	1569.00	1754.23	1923.22	1923.22
Depreciation				
Rate of Depreciation	4.696	4.711	4.720	4.720
Depreciable Value	1361.98	1528.56	1680.66	1680.66
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	1361.98	1521.77	1593.86	1505.71
Depreciation	6.80	80.00	88.15	88.15
Interest on Loan				
Gross Normative Loan	1242.21	1268.19	1504.78	1504.78
Cumulative Repayment upto Previous Year	0.00	6.80	86.80	174.95
Net Loan-Opening	1242.21	1261.39	1417.98	1329.83
Additions	25.98	236.59	0.00	0.00
Repayment during the year	6.80	80.00	88.15	88.15
Net Loan-Closing	1261.39	1417.98	1329.83	1241.69
Average Loan	1251.80	1339.69	1373.91	1285.76
Weighted Average Rate of Interest on Loan (%)	9.1637	9.1536	9.1474	9.1467
Interest	10.97	122.63	125.68	117.60
Return on Equity				
Opening Equity	310.55	317.03	418.43	418.43
Additions	6.48	101.40	0.00	0.00
Closing Equity	317.03	418.43	418.43	418.43



Particulars	Asset-III			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Average Equity	313.79	367.73	418.43	418.43
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for the year 2013-14 (%)	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)	5.88	72.11	82.05	82.05
Interest on Working Capital				
Maintenance Spares	0.89	9.66	9.98	10.31
O & M expenses	0.50	5.36	5.54	5.73
Receivables	5.08	58.17	62.15	61.16
Total	6.47	73.19	77.66	77.19
Interest	0.87	9.88	10.48	10.42
Annual Transmission Charges				
Depreciation	6.80	80.00	88.15	88.15
Interest on Loan	10.97	122.63	125.68	117.60
Return on Equity	5.88	72.11	82.05	82.05
Interest on Working Capital	0.87	9.88	10.48	10.42
O & M Expenses	5.96	64.37	66.51	68.71
Total	30.48	349.00	372.87	366.94

(₹ in lakh)

Particulars	Asset-IV			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	6295.39	7535.38	7768.88	7844.18
Additional Capitalisation	1239.99	233.50	75.30	0.00
Closing Gross Block	7535.38	7768.88	7844.18	7844.18
Average Gross Block	6915.39	7652.13	7806.53	7844.18
Depreciation				
Rate of Depreciation	5.063	5.065	5.047	5.039
Depreciable Value	6223.85	6886.92	7025.88	7059.76
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	25	24	23	22
Remaining Depreciable Value	6223.85	6778.81	6530.21	6170.10
Depreciation	108.10	387.56	393.99	395.25
Interest on Loan				
Gross Normative Loan	5036.31	5904.31	6067.76	6120.47
Cumulative Repayment upto Previous Year	0.00	108.10	495.67	889.66



Particulars	Asset-IV			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Net Loan-Opening	5036.31	5796.20	5572.09	5230.81
Additions	867.99	163.45	52.71	0.00
Repayment during the year	108.10	387.56	393.99	395.25
Net Loan-Closing	5796.20	5572.09	5230.81	4835.56
Average Loan	5416.26	5684.14	5401.45	5033.18
Weighted Average Rate of Interest on Loan (%)	9.2138	9.2120	9.2047	9.1934
Interest	154.08	523.62	497.19	462.72
Return on Equity				
Opening Equity	1259.08	1631.08	1701.13	1723.72
Additions	372.00	70.05	22.59	0.00
Closing Equity	1631.08	1701.13	1723.72	1723.72
Average Equity	1445.08	1666.10	1712.42	1723.72
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for the year 2013-14 (%)	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)	87.49	326.72	335.81	338.02
Interest on Working Capital				
Maintenance Spares	8.94	29.93	30.92	31.95
O & M expenses	4.97	16.63	17.18	17.75
Receivables	70.11	246.16	245.46	241.38
Total	84.02	292.72	293.57	291.08
Interest	11.34	39.52	39.63	39.30
Annual Transmission Charges				
Depreciation	108.10	387.56	393.99	395.25
Interest on Loan	154.08	523.62	497.19	462.72
Return on Equity	87.49	326.72	335.81	338.02
Interest on Working Capital	11.34	39.52	39.63	39.30
O & M Expenses	59.63	199.55	206.16	213.01
Total	420.64	1476.98	1472.77	1448.29

(₹ in lakh)

Particulars	Asset-Va			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	4247.93	4652.87	5047.42	5047.42
Additional Capitalisation	404.94	394.55	0.00	0.00
Closing Gross Block	4652.87	5047.42	5047.42	5047.42
Average Gross Block	4450.40	4850.14	5047.42	5047.42
Depreciation				



Particulars	Asset-Va			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Rate of Depreciation	4.972	4.949	4.940	4.940
Depreciable Value	3955.12	4314.89	4492.44	4492.44
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	29	28	27	26
Remaining Depreciable Value	3955.12	4212.22	4152.51	3905.95
Depreciation	102.67	237.25	246.56	246.56
Interest on Loan				
Gross Normative Loan	3398.33	3681.79	3957.98	3957.98
Cumulative Repayment upto Previous Year	0.00	102.67	339.92	586.49
Net Loan-Opening	3398.33	3579.12	3618.05	3371.49
Additions	283.46	276.19	0.00	0.00
Repayment during the year	102.67	237.25	246.56	246.56
Net Loan-Closing	3579.12	3618.05	3371.49	3124.93
Average Loan	3488.72	3598.59	3494.77	3248.21
Weighted Average Rate of Interest on Loan (%)	9.12	9.11	9.10	9.08
Interest	149.45	327.87	318.01	295.05
Return on Equity				
Opening Equity	849.60	971.08	1089.44	1089.44
Additions	121.48	118.36	0.00	0.00
Closing Equity	971.08	1089.44	1089.44	1089.44
Average Equity	910.34	1030.26	1089.44	1089.44
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	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)	83.89	202.03	213.64	213.64
Interest on Working Capital				
Maintenance Spares	8.78	19.31	19.95	20.61
O & M expenses	4.88	10.73	11.09	11.45
Receivables	67.59	153.44	156.08	152.94
Total	81.25	183.48	187.12	185.01
Interest	10.97	24.77	25.26	24.98
Annual Transmission Charges				
Depreciation	102.67	237.25	246.56	246.56
Interest on Loan	149.45	327.87	318.01	295.05
Return on Equity	83.89	202.03	213.64	213.64
Interest on Working Capital	10.97	24.77	25.26	24.98
O & M Expenses	58.56	128.74	133.02	137.42



Particulars	Asset-Va			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Total	405.54	920.66	936.49	917.65

(₹ in lakh)

Particulars	Asset-Vb			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Gross Block				
Opening Gross Block	12564.93	13302.53	13749.77	13749.77
Additional Capitalisation	737.60	447.24	0.00	0.00
Closing Gross Block	13302.53	13749.77	13749.77	13749.77
Average Gross Block	12933.73	13526.15	13749.77	13749.77
Depreciation				
Rate of Depreciation	5.174	5.164	5.160	5.160
Depreciable Value	11590.13	12123.31	12324.56	12324.56
Elapsed Life of the assets at beginning of the year	0	1	2	3
Weighted Balance Useful life of the assets	33	32	31	30
Remaining Depreciable Value	11590.13	11790.18	11295.90	10589.29
Depreciation	333.12	695.55	706.61	706.61
Interest on Loan				
Gross Normative Loan	10051.94	10568.26	10881.34	10881.34
Cumulative Repayment upto Previous Year	0.00	333.12	1028.67	1735.27
Net Loan-Opening	10051.94	10235.14	9852.67	9146.06
Additions	516.32	313.07	0.00	0.00
Repayment during the year	333.12	695.55	706.61	706.61
Net Loan-Closing	10235.14	9852.67	9146.06	8439.45
Average Loan	10143.54	10043.91	9499.36	8792.76
Weighted Average Rate of Interest on Loan (%)	9.2085	9.2023	9.1893	9.1743
Interest	467.04	924.27	872.92	806.68
Return on Equity				
Opening Equity	2512.99	2734.27	2868.43	2868.43
Additions	221.28	134.17	0.00	0.00
Closing Equity	2734.27	2868.43	2868.43	2868.43
Average Equity	2623.63	2801.35	2868.43	2868.43
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14 (%)	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)	257.25	549.34	562.50	562.50



Particulars	Asset-Vb			
	2015-16 (Pro-rata)	2016-17	2017-18	2018-19
Interest on Working Capital				
Maintenance Spares	12.56	25.96	26.82	27.71
O & M expenses	6.98	14.42	14.90	15.39
Receivables	195.02	400.28	396.67	386.42
Total	214.56	440.67	438.39	429.52
Interest	28.97	59.49	59.18	57.99
Annual Transmission Charges				
Depreciation	333.12	695.55	706.61	706.61
Interest on Loan	467.04	924.27	872.92	806.68
Return on Equity	257.25	549.34	562.50	562.50
Interest on Working Capital	28.97	59.49	59.18	57.99
O & M Expenses	83.76	173.06	178.81	184.74
Total	1170.13	2401.71	2380.02	2318.51

Filing Fee and the Publication Expenses

60. 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

61. 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

62. The petitioner has sought to recover service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We are of the view that the petitioner's prayer is premature.

Sharing of Transmission Charges

63. 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.

64. This order disposes of Petition No. 259/TT/2015.

(Dr. M. K. Iyer)
Member

(A.S. Bakshi)
Member



DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO

(₹ in lakh)

Particulars	ASSET-I			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-2.Doco Funding-	9.95	300.00	0.00	300.00
BOND - XLII-1. Doco Funding-	8.80	200.00	0.00	200.00
BOND - XLV-3.Doco Funding-	9.65	200.00	0.00	200.00
BOND - XLVI-4.Doco Funding-	9.30	958.96	0.00	958.96
Proposed Loan 2015-2016 (8.40%)-5.Doco Funding-	8.40	154.33	0.00	154.33
Total		1813.29	0.00	1813.29

(₹ in lakh)

Particulars	ASSET-II			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-1.Doco Funding-	9.95	280.00	0.00	280.00
BOND - XLIV-2. Doco Funding-	8.70	150.00	0.00	150.00
BOND - XLV-3.Doco Funding-	9.65	200.00	0.00	200.00
BOND - XLVI-4.Doco Funding-	9.30	442.65	0.00	442.65
Proposed Loan 2015-2016 (8.40%)-5.Doco Funding-	8.40	86.17	0.00	86.17
		1158.82	0.00	1158.82

(₹ in lakh)

Particulars	ASSET-III			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-Loan 1-	9.55	100.00	0.00	100.00
BOND - XLIV- Loan 2-	8.70	150.00	0.00	150.00
BOND - XLV- Loan 3-	9.65	200.00	0.00	200.00
BOND - XLVI- Loan 4-	9.30	625.50	0.00	625.50
BOND - LII-ADDCAP FOR Loan 6-	8.32	0.00	20.14	20.14



Particulars	ASSET-III			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND - LII-ADDCAP FOR Loan 7 (Accrual IDC)-	8.32	0.00	5.84	5.84
BOND - LII-Loan 5-	8.32	166.71	0.00	166.71
		1242.21	25.98	1268.19

(₹ in lakh)

Particulars	ASSET-IV			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
SBI (21.3.2012)-1.DOCO LOAN-	9.55	600.00	0.00	600.00
BOND - XLII-DOCO LOAN-	8.80	300.00	0.00	300.00
BOND - XLV-DOCO LOAN-	9.65	950.00	0.00	950.00
BOND - XLVI-DOCO LOAN-	9.30	2334.50	0.00	2334.50
Proposed Loan 2015-2016 (8.40%)-DOCO LOAN-	8.40	851.81	0.00	851.81
		5036.31	0.00	5036.31

(₹ in lakh)

Particulars	ASSET-Va			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXVIII-1.Dococ Funding-	9.33	10.00	0.00	10.00
BOND XXXVII-2.Dococ Funding-	9.25	500.00	0.00	500.00
SBI (21.3.2012)-3.Dococ Funding-	9.55	500.00	0.00	500.00
BOND - XLV-4.Dococ Funding-	9.65	500.00	0.00	500.00
SBI (2014-15)-6.Dococ Funding-	9.55	500.00	0.00	500.00
BOND - XLVI-5.Dococ Funding-	9.30	500.00	0.00	500.00
BOND - XLIX-7.Dococ Funding-	8.15	793.06	0.00	793.06
Proposed Loan 2015-2016 (8.40%)-8.Dococ Funding-	8.40	130.97	0.00	130.97
		3434.03	0.00	3434.03



(₹ in lakh)

Particulars	ASSET-Vb			
	2014-19			
	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
BOND XXVIII-1.Dococ Funding-	9.33	725.00	0.00	725.00
BOND XXXVII-2.Dococ Funding-	9.25	750.00	0.00	750.00
SBI (21.3.2012)-8.Dococ Funding-	9.95	1500.00	0.00	1500.00
BOND - XLV-3.Dococ Funding-	9.65	500.00	0.00	500.00
SBI (2014-15)-5.Dococ Funding-	9.95	1500.00	0.00	1500.00
BOND - XLVI-4.Dococ Funding-	9.30	2400.00	0.00	2400.00
BOND - XLIX-6.Dococ Funding-	8.15	2255.41	0.00	2255.41
Proposed Loan 2015-2016 (8.40%)-7.Dococ Funding-	8.40	456.89	0.00	456.89
		10087.30	0.00	10087.30



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

(₹ in lakh)

Particulars	ASSET-I			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1813.29	1813.29	1813.29	1813.29
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	27.27	71.21
Net Loans Opening	1813.29	1813.29	1786.02	1742.08
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	27.27	43.94	43.94
Net Closing Loan	1813.29	1786.02	1742.08	1698.14
Average Net Loan	1813.29	1799.66	1764.05	1720.11
Interest on Loan	168.90	167.54	164.02	159.70
Rate of Interest on Loan (%)	9.3144	9.3096	9.2981	9.2843

(₹ in lakh)

Particulars	ASSET-II			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1158.82	1158.82	1158.82	1158.82
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	25.45	67.57
Net Loans Opening	1158.82	1158.82	1133.37	1091.25
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	25.45	42.12	92.12
Net Closing Loan	1158.82	1133.37	1091.25	999.13
Average Net Loan	1158.82	1146.10	1112.31	1045.19
Interest on Loan	108.61	107.35	104.01	97.70
Rate of Interest on Loan (%)	9.3729	9.3665	9.3510	9.3472

(₹ in lakh)

Particulars	ASSET-III			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	1242.21	1268.19	1268.19	1268.19
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	9.09	34.85
Net Loans Opening	1242.21	1268.19	1259.10	1233.34
Add: Drawl(s) during the year	25.98	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	9.09	25.76	75.76
Net Closing Loan	1268.19	1259.10	1233.34	1157.58



Particulars	ASSET-III			
	2015-16	2016-17	2017-18	2018-19
Average Net Loan	1255.20	1263.65	1246.22	1195.46
Interest on Loan	115.02	115.67	114.00	109.35
Rate of Interest on Loan (%)	9.1637	9.1536	9.1474	9.1467

(₹ in lakh)

Particulars	ASSET-IV			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	5036.31	5036.31	5036.31	5036.31
Cumulative Repayments of Loans upto Previous Year	0.00	0.00	54.55	188.27
Net Loans Opening	5036.31	5036.31	4981.76	4848.04
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	0.00	54.55	133.72	133.72
Net Closing Loan	5036.31	4981.76	4848.04	4714.32
Average Net Loan	5036.31	5009.04	4914.90	4781.18
Interest on Loan	464.04	461.43	452.40	439.55
Rate of Interest on Loan (%)	9.2138	9.2120	9.2047	9.1934

(₹ in lakh)

Particulars	ASSET-Va			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	3434.03	3434.03	3434.03	3434.03
Cumulative Repayments of Loans upto Previous Year	2.50	45.00	132.95	262.57
Net Loans Opening	3431.53	3389.03	3301.08	3171.46
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	42.50	87.95	129.62	129.62
Net Closing Loan	3389.03	3301.08	3171.46	3041.84
Average Net Loan	3410.28	3345.06	3236.27	3106.65
Interest on Loan	310.87	304.77	294.48	282.19
Rate of Interest on Loan (%)	9.1157	9.1110	9.0995	9.0835

(₹ in lakh)

Particulars	ASSET-Vb			
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	10087.30	10087.30	10087.30	10087.30
Cumulative Repayments of Loans upto Previous Year	181.25	304.17	563.45	864.40



Particulars	ASSET-Vb			
	2015-16	2016-17	2017-18	2018-19
Net Loans Opening	9906.05	9783.13	9523.85	9222.90
Add: Drawl(s) during the year	0.00	0.00	0.00	0.00
Less: Repayment(s) of Loan during the year	122.92	259.28	300.95	300.95
Net Closing Loan	9783.13	9523.85	9222.90	8921.95
Average Net Loan	9844.59	9653.49	9373.38	9072.43
Interest on Loan	906.54	888.34	861.34	832.34
Rate of Interest on Loan (%)	9.2085	9.2023	9.1893	9.1743

