

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO. 132/TT/2015

Coram:

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

**Date of Hearing: 14.03.2016
Date of Order : 30.03.2016**

In the matter of:

Determination of transmission tariff of balance portion of 400 kV D/C Kodarma Gaya TL ckt-II including multi circuit, Balance portion of 400 kV D/C Kodarma Gaya TL ckt-I including multi circuit and 400 kV D/C Bokaro TPS Extension-Kodarma TPS line and PLCC Equipment for Kodarma TPS-Bokaro TPS line associated with Supplementary Transmission System under DVC and Maithon Right Bank Project in Eastern Region for 2014-19 tariff block under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for 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-122001 (Haryana)

.....Petitioner

Versus

1. Bihar State Electricity Board
Vidyut Bhawan, Bailey Road
Patna - 800 001
2. West Bengal State Electricity Distribution Company Limited
Bidyut Bhawan, Bidhan Nagar
Block DJ, Sector-II, Salt Lake City
Calcutta - 700 091
3. Grid Corporation of Orissa Ltd.
Shahid Nagar, Bhubaneswar - 751 007
4. Damodar Valley Corporation
DVC Tower, Maniktala
Civic Centre, Vip Road, Calcutta - 700 054



5. Power Department
Govt. Of Sikkim, Gangtok - 737 101
6. Jharkhand State Electricity Board
In Front Of Main Secretariat
Doranda, Ranchi - 834002

....Respondent(s)

The following were present:

For Petitioner: Shri S.S. Raju, PGCIL
Shri Jasbir Singh, PGCIL
Shri Rakesh Prasad, PGCIL
Shri Aryaman Saxena, PGCIL
Shri M.M. Mondal, PGCIL

For Respondents: None

ORDER

The petition has been preferred by Power Grid Corporation of India Limited ("the petitioner") for determination of tariff 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 to 31.3.2019 in respect of Balance portion of 400 kV D/C Kodarma Gaya TL circuit-II including multi circuit (referred as "Asset-I"), Balance portion of 400 kV D/C Kodarma Gaya TL circuit-I including multi circuit (referred as "Asset-II") and 400 kV D/C Bokaro TPS Extension-Kodarma TPS line and PLCC Equipment for Kodarma TPS-Bokaro TPS line (referred as "Asset-III") associated with Supplementary Transmission System under DVC and Maithon Right Bank Project in Eastern Region (hereinafter referred to as "the transmission assets")

2. The petitioner has been entrusted with the implementation of Supplementary Transmission System under DVC and Maithon Right Bank in Eastern Region. The



scope of work covered under “Supplementary Transmission System under DVC and Maithon Right Bank in Eastern Region” is as follows:-

Transmission Lines:

- A) Specific system for Maithon RB
 - i. Maithon RB TPD – Ranchi (PG) 400 kV D/C
- B) Specific system for Bokaro Extension and Kodarma
 - ii. **Bokaro TPS Extension – Kodarma TPS 400 kV D/C**
 - iii. **Kodarma – Gaya (PG) 400 kV D/C**
- C) Specific system for Mejia Extension
 - iv. Mejia – Maithon (PG) 400 kV D/C
- D) Common Transmission system for import of power by NR
 - v. Sasaram – Fatehpur 765 kV S/C line
 - vi. Fatehpur – Agra 765 kV S/C line
 - vii. Biharsharif – Sasaram 400 kV D/C (Quad) line
 - viii. LILO of Singrauli – Kanpur 400 kV S/C line at Fatehpur
 - ix. LILO of Allahabad – Kanpur 400 kV S/C at Fatehpur
 - x. LILO of Fatehpur (UPPCL) – Kanpur (UPPCL) 220 kV D/C line at Fatehpur (PG)
 - xi. LILO of Dehri – Bodhgaya 220 kV D/C line at Gaya

Sub-stations:

- E) Additional scope at Fatehpur 765 / 400 kV Sub-station
 - i. 2x315 MVA 400 / 220 kV transformer with associated bays
 - ii. 4 nos. 400 kV line bays for LILOs
 - iii. 4 nos. of 220 kV line bays for LILOs
- F) Additional scope at Gaya 765 / 400 kV Sub-station
 - iv. 2x315 MVA 400 / 220 kV transformer with associated bays
 - v. 4 nos. of 220 kV line bays for LILOs
- G) Additional scope at Ranchi 400/220 kV Sub-station
 - vi. 2 nos. of 400 kV line bays
- H) PLCC equipment for the following:
 - vii. **Kodarma TPS – Bokaro TPS line**
 - viii. At Dehri and Bodhgaya 220 kV Sub-stations (for LILO)

Note: 1) Bays at Maithon RB TPS, Kodarma TPS, Bokaro TPS and Mejia TPS are to be covered under the scope of generation switchyard.

2) Bay Extension at POWERGRID sub-stations at Sasaram, Agra and Biharsharif for termination of associated lines are covered under main DPR for DVC and Maithon RB projects.

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

a) The Investment Approval (IA) to the transmission project was accorded by the Board of Directors of POWERGRID vide C/CP/DVC and Maithon RB Project dated 29.8.2008 for ₹236095 lakh including an IDC of ₹23595 lakh based on 1st Quarter, 2008 price level. The Revised Cost Estimate (RCE) of Supplementary Transmission System under DVC and Maithon Right Bank was accorded by the Board of Directors of POWERGRID vide C/CP/Suppl DVC & Maithon RB dated 24.5.2013 for ₹258090 lakh including an IDC of ₹24441 lakh based at December, 2012 price level.

b) The above system requirements were discussed in Standing Committee Meeting on Power system planning in the Eastern Region (ER) held on 5.11.2007. The transmission system was further discussed and agreed in 5th TCC meeting of ERPC held on 18.2.2008 and special 6th TCC meeting of ERPC held on 11.6.2008.

c) The petitioner has submitted that Petition No. 67/TT/2012 was filed for determination of tariff for transmission line at Para B(iii) 400kV D/C(Quad) Kodarma-Gaya Transmission Line and associated bays at Gaya Sub-station (associated with supplementary Transmission System under DVC and Maithon right bank project) and another Petition No. 87/TT/2012 was filed for determination of tariff for 400 kV D/C(Quad) Maithon-Gaya Transmission line

under DVC common Scheme project in Eastern Region for 2009-14 block. The scheduled date of commissioning of the 400 kV D/C (Quad) Kodarma-Gaya and 400 kV D/C(Quad) Maithon-Gaya Transmission Line was 1.9.2012.

d) The petitioner has submitted that both the lines are passing through the dense forest area in Jharkhand and Bihar. In order to mitigate the ROW issues, the construction of these two D/C lines in the forest stretch was made on one tower by using Multi-Circuit Tower configuration. The multi-circuit portion of the line passes through dense forest which is also naxal affected area creating serious law and order and ROW problems. Since commissioning of these lines was getting delayed due to pending forest clearance, CEA vide its letter no. 67/26/2012-SP&PA/ dated 9.4.2012 approved the interim arrangement for facilitating evacuation of power from DVC Generation projects in Eastern Region. This interim arrangement i.e. 400 kV D/C(Quad) Maithon-Kodarma TL (combining Kodarma-Gaya TL & Maithon-Gaya TL) covers part of aforesaid two D/C lines and was declared under commercial operation w.e.f. 1.2.2013. The order in the aforesaid interim arrangement was issued on 15.1.2015 in Petition No. 67/2012 and on 3.2.2015 in Petition No. 87/2012.

e) The petitioner has submitted that as per CEA approval dated 9.4.2012 the interim arrangement was to be withdrawn to restore the lines as originally approved under corresponding projects after the construction of the lines in the affected forest areas.

f) The transmission tariff is allowed for the following assets in the instant order:-

- i) Balance part of 400 kV D/C Kodarma-Gaya transmission line Ckt-II (COD: 8.9.2014) (**referred as “Asset I”**)
- ii) Balance part of 400 kV D/C Kodarma-Gaya transmission line Ckt-I (COD: 30.12.2014) (**referred as “Asset II”**).
- iii) 400 KV D/C Bokaro TPS Extension – Kodarma TPS line and PLCC Equipment for Kodarma TPS – Bokaro TPS line (COD: 28.12.2014) (**referred as “Asset-III”**)

4. The Annual Transmission Charges for the instant asset was allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges vide order dated 6.7.2015.

5. The petitioner has served the petition on the respondents and notice of this application has been published in the newspaper in accordance with Section 64 of the Electricity Act, 2003 (“the Act”). No comments/objections have been received from the public in response to the notice in newspaper. No reply has been made by the respondents. The hearing in this matter was held on 14.3.2016. The petitioner was directed the petitioner to submit additional information in respect of the instant transmission assets. In response, the petitioner has filed the information vide affidavit dated 18.12.2015.

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

7. The transmission charges claimed by the petitioner based on the actual date of commercial operation are as follows:-

Asset-I:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	377.71	676.15	677.41	677.41	677.41
Interest on Loan	439.62	740.40	681.74	621.36	560.99
Return on Equity	420.84	753.37	754.78	754.78	754.78
Interest on Working Capital	28.80	49.95	48.66	47.27	45.88
O & M Expenses	5.46				
Total	1272.43	2219.87	2162.59	2100.82	2039.06

Asset-II:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	67.62	266.30	266.63	266.63	266.63
Interest on Loan	80.64	302.50	278.95	254.93	230.85
Return on Equity	75.34	296.71	297.08	297.08	297.08
Interest on Working Capital	5.59	21.69	21.23	20.73	20.24
O & M Expenses	7.93	32.06	33.11	34.22	35.36
Total	237.12	919.26	897.00	873.59	850.16

Asset-III:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	193.60	748.38	754.25	756.77	756.77
Interest on Loan	234.69	863.96	801.62	734.50	664.65
Return on Equity	215.70	833.55	839.89	842.60	842.60
Interest on Working Capital	15.84	60.32	59.30	58.01	56.54
O & M Expenses	18.34	72.73	75.12	77.61	80.20
Total	678.17	2578.94	2530.18	2469.49	2400.76

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

Asset-I:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O&M Expenses	0.81	0.00	0.00	0.00	0.00
Maintenance Spares	1.45	0.00	0.00	0.00	0.00
Receivables	376.09	369.98	360.43	350.14	339.84



Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Total working capital	378.35	369.98	360.43	350.14	339.84
Rate of Interest	13.50	13.50	13.50	13.50	13.50
Interest on working capital	28.80	49.95	48.66	47.27	45.88

Asset-II:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O&M Expenses	2.59	2.67	2.76	2.85	2.95
Maintenance Spares	4.66	4.81	4.97	5.13	5.30
Receivables	154.75	153.21	149.50	145.60	141.69
Total working capital	162.00	160.69	157.23	153.58	149.94
Rate of Interest	13.50	13.50	13.50	13.50	13.50
Interest on working capital	5.59	21.69	21.23	20.73	20.24

Asset-III:

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O&M Expenses	5.86	6.06	6.26	6.47	6.68
Maintenance Spares	10.55	10.91	11.27	11.64	12.03
Receivables	433.47	429.82	421.70	411.58	400.13
Total working capital	449.88	446.79	439.23	429.69	418.84
Rate of Interest	13.50	13.50	13.50	13.50	13.50
Interest on working capital	15.84	60.32	59.30	58.01	56.54

Date of Commercial Operation (COD)

9. The petitioner has claimed the date of the commercial operation of Asset-I as 8.9.2014, Asset-II as 30.12.2014 and Asset-III as 28.12.2014. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-

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

xxx

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

xxx
xxx”

10. The petitioner, vide affidavit dated 17.12.2015, has submitted the RLDC certificates and CEA energisation certificates 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 for Asset-I and II. Further, for Asset-III, the petitioner has submitted a communication dated 18.12.2014 from the Director and Electrical Inspector, Govt. of India, in respect of approval for charging the Asset-III. Accordingly, the commercial operation date of Asset-I and II has been considered as 8.9.2014 and 30.12.2014 respectively. The COD of Asset-III is being considered 28.12.2014, subject to submission of the RLDC certificate during true up. Accordingly, the tariff is worked out from corresponding COD to 31.3.2019.

Capital Cost

11. Regulation 9 (1) and (2) and 10 (1) of the 2014 Tariff Regulations specify as follows:-

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

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

- a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- c) Increase in cost in contract packages as approved by the Commission;
- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;

- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

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

(1) In case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Commission from time to time:

Provided that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff.”

12. The details of apportioned approved cost, actual expenditure incurred as on date of commercial operation in case of Asset-I and II (as per Auditor Certificate dated 30.9.2014 and Management Certificate date 12.3.2015 respectively) and in case of Asset-III as per the corresponding Management Certificate and details of estimated additional capitalization projected to be incurred for the period from COD to 31.3.2019 for the instant transmission assets are summarized below:-

(₹ in lakh)

Asset	Cost as per RCE	Capital cost on COD	Estimated Additional capital expenditure				Total Estimated Cost
			2014-15	2015-16	2016-17	Total	
Asset I	13133.17	12590.10	191.74	47.93	-	239.67	12829.77
Asset II	5139.07	4992.59	44.59	12.59	-	57.18	5049.77
Asset III	16580.97	14014.95	92.33	123.11	92.33	307.77	14322.72
Total	34853.21	31597.64	328.66	183.63	92.33	604.62	32202.26

13. The petitioner has also submitted, the details of IDC discharged on cash basis and other details in respect of year wise details of liability discharged corresponding to initial spares vide affidavit dated 18.12.2015 and 10.3.2016. The admissible capital cost of the transmission asset as on COD is worked out in the subsequent paragraphs taking into consideration the initial spares and IEDC and IDC amount.

Cost over-run

13. As per the original Investment approval, the cost of the project was ₹236095 lakh which has been revised to ₹258090 lakh vide the Revised Cost Estimates dated 24.5.2013. In response to query, the petitioner has submitted the revised form as per apportioned RCE for the instant transmission assets. The estimated completion cost is within the apportioned approved cost as given in Para 16 of this order. Hence, there is no cost over-run.

14. Further, it is observed from the petitioner's affidavit dated 18.12.2015 that the project cost includes ₹7.36 lakh which has been incurred for the interim arrangement on account of ACSR moose conductor (1.30 km) and PG clamps (48 nos.) The petitioner has further submitted that these materials are proposed to be retained as spare against the line on removal of the interim arrangement.

15. It is noticed that the petitioner's affidavit dated 18.12.2015 does not clarify if this amount of ₹7.36 lakh has been included in the capital cost of instant assets. The amount of ₹7.36 lakh has been allowed as one time reimbursement by Commission vide order dated 15.1.2015 in Petition No. 67/2012. In view of above, the petitioner is not entitled to include this amount in the capital cost. We have maintained the status quo. It is responsibility of the petitioner to ensure that the amount of ₹7.36 lakh is not included in the capital cost as per the order dated 15.1.2015 in Petition No. 67/2012. The petitioner should ensure the compliance of the order dated 15.1.2015 in Petition No. 67/2012 and submit compliance during the next revision of tariff or at the time of true up.

Time Over-run

16. As per the IA, the transmission assets were scheduled to be commissioned within 48 months of the investment approval i.e. on 1.9.2012. Assets-I, II and III have been commissioned on 8.9.2014, 30.12.2014 and 28.12.2014 respectively, after a time over-run of 24 months in Asset-I and 28 months in Asset-II and III.

17. The petitioner has submitted that the delay is mostly attributed to delay in getting forest clearance, naxal issues, law & order and ROW problems, as below:-

Asset I & Asset II

Delay in forest clearance:

18. The total forest involvement in case of 400 kV D/C Kodarma-Gaya transmission line Ckt-II is to the tune of 194 Ha out of which 131 Ha involving Jharkhand and Bihar under Multi Circuit portion and 22.7 Ha in the state of Bihar in Double Circuit portion. The line route alignment, preliminary and detail survey was pre-requisite for preparation of forest proposal. The petitioner has submitted that the survey work was challenging due to Maoist threat prevailing in the area. The survey of line could be completed with utmost care and caution by the petitioner.

19. In the mean time MoEF, New Delhi, vide Order dated 3.8.2009, directed all State Governments to ensure compliance of Forest Rights Act, 2006 which inter-alia required NOC and written consent from each Gram Sabha (in which at least 50% of the members were present) and certification of the same by the respective State Government had been made prerequisite for submission of forest proposal. Instant forest proposal involved 3 DFOs in the state of Jharkhand and 1 DFO in the state of Bihar. Holding Gram Sabha in each village was cumbersome and time consuming

exercise. Compliance of this condition, which came into force only from 3.8.2009, considerably delayed the forest proposal submission. However with extensive mobilization of manpower, this exercise could be completed in May-August, 2010 and forest proposal was submitted by the petitioner to various DFOs between May to September, 2010.

20. The petitioner has submitted that the delay is the commissioning of 400 kV D/C Kodarma-Gaya transmission line Ckt- II is due to delay in survey work on account of Maoist threat and final clearance on account of requirement of written consent of Gram Sabha (in which 50% of members present) imposed by the Government. It is observed that final clearance in respect of area falling in Bihar was received on 16.1.2012 and that of Jharkhand on 8.11.2012 i.e. 16 months after submission of proposal in the state of Bihar and 26 months in the state of Jharkhand. Since most of the works associated with balance portion of Kodarma-Gaya line falls in the forest area that too mostly in Jharkhand, the work could be extensively taken up only after final approval of forest clearance i.e. after November, 2012. The chronology of events leading to time over-run is as given below:-

Particulars	Multi Circuit Portion		D/C portion
	Bihar	Jharkhand	Bihar
Submission of Forest proposal	September,2010	May/Sep 2010	Nov-09
Forwarded to MoEF	5.4.2011	1.6.2011	-
Stage I clearance by MoEF	30.8.2011	22.3.2012	30.8.2011
Stage II clearance by MoEF	16.1.2012	8.8.2012	15.12.2012
Final clearance issued	16.1.2012	8.11.2012	27.1.2013

21. We have considered the submission of the petitioner. The delay in commissioning of 400 kV D/C Kodarma-Gaya transmission line Ckt- II is due to delay in survey work on account of Maoist threat and final clearance on account of requirement of written consent of Gram Sabha (in which 50% of members present).



It is observed that final clearance in respect of area falling in Bihar was received on 16.1.2012 and that of Jharkhand on 8.11.2012 i.e. 16 months after submission of proposal in the state of Bihar and 26 months in the state of Jharkhand. It was unforeseen development, a force majeure event and could not envisaged by the petitioner at the time of the investment approval. Therefore, the delay on account of survey work and requirement of written consent of Gram Sabha is not attributable to the petitioner.

Delay due to ROW problems and other issue:

22. The petitioner has submitted that there had been serious ROW problems at many locations, mainly in the state of Jharkhand where works were affected for considerable period of time. A few of the incidences are as follows:-

Affected area	Nature of problems
Obstruction of work near village Jogidih in Kodarma (Jharkhand)	Work was obstructed by villagers. Help of administration was sought a number of times. Amidst police protection the work could be completed in January, 2013. Work was affected in this area from December, 2009 to January, 2013.
Obstruction of work near village Harino & Chamgudokhurd in Kodarma (Jharkhand)	Work was obstructed by villagers a number of times for illegal demand and excessive compensation amount. FIR was lodged and matter was taken up with administration a number of times to get the work done. Amidst police protection works at these locations were completed. Considerable period of time was lost in this process
Obstruction of work near village Joribigha (Bihar)	After failing many a time in casting foundations in this area due to local obstruction, Matter was referred to administration and under deputation of magistrate work could be completed.
Realignment of line due to Defence objection	Even after obtaining clearance from defence, request for diversion of route in Multi ckt portion near village Deori Dumari was received from Officers Training Institute Gaya. Work remained suspended in this stretch for 3-4 months.

Delay Due to water logging and cultivation:-

23. The petitioner has submitted that in the absence of any 400 kV interconnections with Gaya Sub-station, a contingency arrangement was



commissioned by terminating Gaya-Balia S/C line at Koderma bay at Gaya using ERS towers near the gantry. Without dismantling this interim arrangement, termination of Gaya-Koderma line in assigned bays was not possible. Simultaneously, ERS towers were installed at the point of interconnection of Biharsharif Sasaram 400 kV line and Gaya-Balia 765 kV line. For restoration of the original scheme, these ERS towers were to be dismantled. The work of dismantling of ERS towers and removal of contingent arrangements was affected due to water logging and cultivation in the area. One ckt. of Kodarma-Gaya line has been made by utilizing unused Maithon bay at Gaya. However, for restoration of other circuit there was further delay of 1-2 months due to above reasons.

Asset III

Delay due to forest clearance:

24. As regards Asset-III, the petitioner has submitted that there had been delay in obtaining forest clearance of this line. Total forest land involvement is to the tune of 198.59 Ha in East Hazaribagh, West Hazaribagh and Bokaro divisions of Jharkhand. Due to forest, approximately 75 km of line (out of 99 km) and 140 tower locations were affected. The forest clearance proposal was submitted by the petitioner on 26.10.2009 to the Nodal Officer, Forest Department, Government of Jharkhand.

25. The petitioner has submitted that as per the forest clearance procedure once the proposal is submitted to the Nodal Officer, the same is forwarded to respective DFO for verification of the proposal and their inspection in terms of type and numbers of trees, area involved etc. through RFOs. Once they are satisfied the proposal is recommended by them and sent back to PCCF for further processing and forwarding to the competent authority as per FC Act. Further, NOC of Gram

Sabha of all forest villages and NOC by respective DCs regarding Jangal / Jharee are to be obtained and enclosed with the proposal. Forest area involved being more than 100 Ha required inspection of RMoEF, Bhubaneswar before issuance of clearances. Completion of all these formalities and compliances took approximately 4 years after submission of the forest proposal which in normal circumstances should be completed in a year. The petitioner has submitted complete chronology of events related to forest clearance. As per chronology of events, the petitioner has submitted forest proposal on 26.12.2009 and final clearance was issued on 16.12.2013.

26. The petitioner has further submitted that during course of execution, work on non-forest land was being carried out leaving forest and adjoining stretches as per practice. The same however was objected to by MoEF vide their letter dated 27.3.2012 and asked for actions taken against erring agency and the personnel of the petitioner. The letter in this regard was issued by Forest Department, Jharkhand on 15.5.2012 and compliance was submitted by the petitioner on 7.6.2012 and work in non-forest areas was totally stopped.

Delay due infringement with coalfields of CCL:

27. The petitioner submits that the location of Bokaro TPS and route alignment of the line are such that infringement with coal blocks of Central Coal Fields (CCL) is inevitable. The petitioner requested CCL, vide letter dated 31.7.2010, to issue NOC. CCL however was reluctant to issue any such certificate and advised the petitioner, vide their letter dated 2.9.2011, to reroute the line so as to avoid coal blocks. Considering the inevitability of infringement, CCL agreed to issue NOC provided the petitioner furnishes an undertaking confirming shifting of tower at their own

expenses, if required by CCL at later stage. The petitioner furnished such undertaking dated 18.6.2013 and subsequently NOC was issued by CCL vide their letter dated 24.6.2013.

Diversion of line due to ROW:

28. There was severe ROW problem between section 42/0 to 43/0 where villagers were adamant on shifting of the line. Mukhya of concerned village, vide letter dated 17.8.11, requested for diversion of route of line near village Dondlo in Gridih Distt. Several rounds of discussions with villagers were held. Since deployment of police force was not practical due to naxal affected area, it was felt prudent to resolve the issue through discussion. However, as a last resort, the route of the line was slightly changed to exclude the concerned plot from coming in ROW of the line. The decision in this regard could be taken only by March, 2013. Above diversion was effected without any significant increase in the route length or number of tower

Delay due to obstruction by villagers near Bagodar:-

29. The petitioner has submitted that on 22.10.2013, a group of people came to site and stopped forcefully the work of the line on demand of enhancement of load of power supply from 8 MVA to 18 MVA in Bagodar Area. They also warned not to take out any construction material from the store (situated at Bagodar) to any site till their demands are met. To resolve the issue, meeting with the MLA and the public was held on 23.10.2013 at Bagodar and again with the MLA at Ranchi on 25.10.2013. The public wanted the petitioner to improve the supply of power to their area. It was informed by the petitioner that the supply of power is not under their jurisdiction. However, to resolve the issue the petitioner assured that they would take up with JSEB and DVC at appropriate level. The work was again stopped on 13.11.2013 by

villagers with strict warning not to take up work in the stretch loc. no. 31/0 to loc. no. 48/0 (affecting balance 17 nos. of foundation, 21 nos. of erection and 19 km of stringing) till their demands were fulfilled. Matter was taken up with DC, Giridih to resolve the issue and also with JSEB and DVC to enhance the load of the area. After regular follow up with DVC, another transformer was installed by DVC in the 2nd week of July, 2014 and thereafter the work commenced in the stretch.

30. We have considered the submission of the petitioner. The time over-run of 26 and 28 months in case of Assets I and II was due to delay in obtaining forest clearance, RoW issues and water logging. It took 16 months and 26 months to get the forest clearance in Bihar and Jharkhand respectively. The petitioner also took time to resolve the RoW issues. Accordingly, the time over-run in 24 and 26 months in case of Asset I and II respectively on account of delay of 26 months in getting forest clearance and 2 months due to RoW issues and water logging is condoned. The time over-run of 28 months in case of Asset III is due to delay in obtaining forest clearance, infringement of coal fields, RoW issues and obstruction by villagers. The petitioner should have foreseen the infringement of coal fields at the FR stage. However, the delay due infringement of coalfields, RoW issues and obstruction by villagers has been subsumed by the time take to obtain the forest clearance. The proposal for forest clearance was submitted on 26.12.2009 and the same was received on 12.12.2013 and it almost took 48 months, which should normally take 12 months. Thus, we are of the view that the time over-run of 28 months is not attributable to the petitioner and accordingly the time over-run in case of Asset III is condoned.

Interest during construction (IDC) and Incidental Expenditure during construction (IEDC)

31. The petitioner has submitted, vide affidavit dated 10.3.2016, the details of IDC and IEDC discharged up to COD as below:-

(₹ in lakh)

Asset	IDC	IEDC
Asset-I	1280.97	272.95
Asset-II	1013.02	131.48
Asset-III	1616.83	352.08

The petitioner has submitted that complete IDC and IEDC were discharged up to COD, and the same have been considered in the capital cost certified by Auditor vide certificate dated 28.6.2014.

Initial Spares

32. The petitioner has claimed initial spares of ₹112.00, ₹39.00 and ₹123.00 lakh pertaining to transmission line corresponding to capital cost of ₹11275.85 lakh, ₹3905.27 lakh and ₹12303.37 lakh (excluding IDC, IEDC, Land cost and cost of civil works) up to the cut-off date of 31.3.2017. Further, the petitioner has submitted vide affidavit dated 18.12.2015, the details of liability corresponding to the initial spares discharged up to COD and thereafter, as below:

(₹ in lakh)

Asset	Spares discharged up to COD and included in exp. up to COD in the Auditor Certificate	Estimated Spares in 2015-16	Estimated Spares in 2016-17	Total spares
Asset-I	64.07	47.93	--	112.00
Asset-II	26.41	12.59	--	39.00
Asset-III	--	60.00	63.00	123.00

33. The petitioner has submitted that the capital cost as certified in the Auditor's Certificate dated 30.9.2014 in Asset-I and Management Certificate dated 12.3.2015 in Asset-II and III includes the liability corresponding to initial spares as discharged up to COD and the remaining as additional capital expenditure.

34. The initial spares claimed by the petitioner are within the normative limits in accordance with clause 13 (1) of the Tariff Regulations. Thus, the same is allowed for computation of tariff.

35. Based on the above, capital costs considered as on COD, after capitalization of IDC, IEDC and initial spares for the purpose of the determination of transmission tariff are as below:-

Asset-I:

Particulars	Capital cost on COD:8.9.2014
Land - Freehold	0.00
Land - Leasehold	0.00
Building Civil Works & Colony	0.00
Transmission Line	12590.10
Sub Station	0.00
PLCC	0.00
Total	12590.10

Asset-II:

Particulars	Capital cost on COD: 30.12.2014
Land - Freehold	0.00
Land - Leasehold	0.00
Buliding Civil Works & Colony	0.00
Transmission Line	4992.59
Sub Station	0.00
PLCC	0.00
Total	4992.59

Asset-III:

Particulars	Capital cost on COD: 28.12.2014
Land - Freehold	0.00
Land - Leasehold	0.00
Buliding Civil Works & Colony	0.00
Transmission Line	14014.95
Sub Station	0.00
PLCC	0.00
Total	14014.95

Additional Capital Expenditure

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

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

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

37. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines cut-off date 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:

Provided that the cut-off date may be extended by the Commission if it is proved on the basis of documentary evidence that the capitalisation could not be made within the cut-off date for reasons beyond the control of the project developer ”

38. The petitioner has claimed an estimated additional capital expenditure of ₹239.67 lakh, ₹57.18 lakh and ₹307.77 lakh during 2014-19 tariff period in Asset-I, II and III respectively, on account of balance and retention payments.

39. The additional capital expenditure claimed by the petitioner is on account of balance and retention payments and the total estimated completion cost is within the apportioned approved cost. The same is allowed under Regulation 14(1) of 2014 Tariff Regulations, subject to true up on actual basis. Thus the additional capital expenditure allowed for the 2014-19 tariff period is as follows:-

(₹ in lakh)

Name of the element	Cost as per RCE	Capital cost on COD	Estimated Additional capital expenditure				Total Estimated Cost
			2014-15	2015-16	2016-17	Total	
Asset I	13133.17	12590.10	191.74	47.93		239.67	12829.77
Asset II	5139.07	4992.59	44.59	12.59		57.18	5049.77
Asset III	16580.97	14014.95	92.33	123.11	92.33	307.77	14322.72
Total	34853.21	31597.64	328.66	183.63	92.33	604.62	32202.26

Debt: Equity

40. Clause (1) of Regulation 19 of the 2014 Tariff Regulations provides 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.”

The petitioner has considered the debt: equity ratio of 70:30, which is in line with the 2014 Tariff Regulations, hence the same is considered for calculation of tariff.

41. Accordingly, the details of the debt:equity considered for the purpose of tariff for 2014-19 tariff period is as follows:-

(₹ in lakh)

Funding	As on COD	(%)	Additional capital expenditure during 2014-19	(%)	As on 31.3.2019	(%)
Asset-I						
Debt	8813.07	70.00	167.77	70.00	8980.84	70.00
Equity	3777.03	30.00	71.90	30.00	3848.93	30.00
Total	12590.10	100.00	239.67	100.00	12829.77	100.00
Asset-II						
Debt	3494.81	70.00	40.03	70.00	3534.84	70.00
Equity	1497.78	30.00	17.15	30.00	1514.93	30.00
Total	4992.59	100.00	57.18	100.00	5049.77	100.00
Asset-III						
Debt	9810.47	70.00	215.44	70.00	10025.90	70.00
Equity	4204.49	30.00	92.33	30.00	4296.82	30.00
Total	14104.95	100.00	307.77	100.00	14322.72	100.00

Return on Equity (“ROE”)

42. Clause (1) and (2) of Regulations 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....”

“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.”

43. The petitioner has claimed ROE at the rate of 20.961% after grossing up the ROE of 15.5% with MAT rate as per the above said Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax



including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

44. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/ adjustable after completion of income tax assessment of the financial year.

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

Asset-I

(₹ in lakh)

Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	3777.03	3834.55	3848.93	3848.93	3848.93
Additions	57.52	14.38	0.00	0.00	0.00
Closing Equity	3834.55	3848.93	3848.93	3848.93	3848.93
Average Equity	3805.79	3841.74	3848.93	3848.93	3848.93



Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	419.17	753.38	754.79	754.79	754.79

Asset-II

(₹ in lakh)

Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	1497.78	1511.15	1514.93	1514.93	1514.93
Additions	13.38	3.78	0.00	0.00	0.00
Closing Equity	1511.15	1514.93	1514.93	1514.93	1514.93
Average Equity	1504.47	1513.04	1514.93	1514.93	1514.93
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	74.36	296.71	297.08	297.08	297.08

Asset-III

(₹ in lakh)

Return on Equity	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	4204.49	4232.18	4269.12	4296.82	4296.82
Additions	27.70	36.93	27.70	0.00	0.00
Closing Equity	4232.18	4269.12	4296.82	4296.82	4296.82
Average Equity	4218.33	4250.65	4282.97	4296.82	4296.82
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	213.04	833.57	839.91	842.62	842.62

Interest on Loan (“IoL”)

46. Clause 5 and 6 of Regulation 26 of 2014 Tariff Regulations provides that:-

“(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.”

47. We have considered the weighted average rate of IOL on the basis of rate prevailing as on 1.4.2014. Further, the petitioner has prayed to allow it to bill and adjust impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period, if any from the respondents. The petitioner has also prayed that they will approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The petitioner’s prayer to bill and adjust the impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period from the respondents will be considered at the time of truing up. The details of weighted average rate of interest are placed at Annexure-I and the IOL has been worked out as follows:-

Asset-I

(₹ in lakh)

Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	8813.07	8947.29	8980.84	8980.84	8980.84
Cumulative Repayment upto Previous Year	0.00	376.20	1052.35	1729.76	2407.17
Net Loan-Opening	8813.07	8571.09	7928.49	7251.08	6573.67
Additions	134.22	33.55	0.00	0.00	0.00
Repayment during the year	376.20	676.15	677.41	677.41	677.41
Net Loan-Closing	8571.09	7928.49	7251.08	6573.67	5896.26
Average Loan	8692.08	8249.79	7589.79	6912.37	6234.96
Weighted Average Rate of Interest on Loan (%)	8.9700	8.9764	8.9841	8.9911	8.9997
Interest on Loan	437.90	740.54	681.88	621.50	561.13



Asset-II

(₹ in lakh)

Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	3494.81	3526.03	3534.84	3534.84	3534.84
Cumulative Repayment upto Previous Year	0.00	66.74	333.04	599.66	866.29
Net Loan-Opening	3494.81	3459.29	3201.80	2935.18	2668.55
Additions	31.21	8.81	0.00	0.00	0.00
Repayment during the year	66.74	266.30	266.63	266.63	266.63
Net Loan-Closing	3459.29	3201.80	2935.18	2668.55	2401.92
Average Loan	3477.05	3330.54	3068.49	2801.86	2535.23
Weighted Average Rate of Interest on Loan (%)	9.0825	9.0851	9.0933	9.1014	9.1089
Interest on Loan	79.60	302.58	279.03	255.01	230.93

Asset-III

(₹ in lakh)

Interest on Loan	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	9810.47	9875.10	9961.27	10025.90	10025.90
Cumulative Repayment upto Previous Year	0.00	191.22	939.60	1693.85	2450.62
Net Loan-Opening	9810.47	9683.88	9021.67	8332.05	7575.28
Additions	64.63	86.18	64.63	0.00	0.00
Repayment during the year	191.22	748.38	754.25	756.77	756.77
Net Loan-Closing	9683.88	9021.67	8332.05	7575.28	6818.51
Average Loan	9747.17	9352.77	8676.86	7953.67	7196.90
Weighted Average Rate of Interest on Loan (%)	9.2351	9.2398	9.2411	9.2375	9.2382
Interest on Loan	231.82	864.18	801.84	734.72	664.87

Depreciation

48. Clause (2), (5) and (6) of Regulation 27 of 2014 Tariff Regulations provide that:-

"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.”

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

“(67) ‘Useful life’ in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:

- (a) Coal/Lignite based thermal generating station 25 years
- (b) Gas/Liquid fuel based thermal generating station 25 years
- (c) AC and DC sub-station 25 years
- (d) Gas Insulated Substation (GIS) 25 years
- (d) Hydro generating station including pumped Storage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years”

50. The depreciation has been worked out considering the admitted capital cost as on COD and the additional capital expenditure admitted during 2014-19 period. The weighted average useful life of the asset has been considered as 35 years in accordance with the above regulation. The detailed calculations for depreciation for the transmission asset are worked out and allowed as follows:-

Asset-I

(₹ in lakh)

Depreciation	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	12590.10	12781.84	12829.77	12829.77	12829.77
Additional Capitalization	191.74	47.93	0.00	0.00	0.00
Closing Gross Block	12781.84	12829.77	12829.77	12829.77	12829.77
Average Gross Block	12685.97	12805.81	12829.77	12829.77	12829.77
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Balance Useful life of the asset	35	34	33	32	31



Depreciation	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Elapsed life	0	1	2	3	4
Remaining Depreciable Value	11417.37	11149.02	10494.45	9817.03	9139.62
Depreciation during the year	376.20	676.15	677.41	677.41	677.41
Cumulative depreciation (incl. of AAD)	376.20	1052.35	1729.76	2407.17	3084.58

Asset-II

(₹ in lakh)

Depreciation	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	4992.59	5037.18	5049.77	5049.77	5049.77
Additional Capitalization	44.59	12.59	0.00	0.00	0.00
Closing Gross Block	5037.18	5049.77	5049.77	5049.77	5049.77
Average Gross Block	5014.89	5043.48	5049.77	5049.77	5049.77
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Balance Useful life of the asset	35	34	33	32	31
Elapsed life	0	1	2	3	4
Remaining Depreciable Value	4513.40	4472.39	4211.76	3945.13	3678.50
Depreciation during the year	66.74	266.30	266.63	266.63	266.63
Cumulative depreciation (incl. of AAD)	66.74	333.04	599.66	866.29	1132.92

Asset-III

(₹ in lakh)

Depreciation	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	14014.95	14107.28	14230.39	14322.72	14322.72
Additional Capitalization	92.33	123.11	92.33	0.00	0.00
Closing Gross Block	14107.28	14230.39	14322.72	14322.72	14322.72
Average Gross Block	14061.12	14168.84	14276.56	14322.72	14322.72
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Balance Useful life of the asset	35	34	33	32	31
Elapsed life	0	1	2	3	4
Remaining Depreciable Value	12655.00	12560.73	11909.30	11196.60	10439.83
Depreciation during the year	191.22	748.38	754.25	756.77	756.77
Cumulative depreciation (incl. of AAD)	191.22	939.60	1693.85	2450.62	3207.39

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

51. The petitioner has claimed O&M Expenses as specified in sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. The petitioner has claimed the O&M expenses in respect of Asset-I from its COD i.e. 8.9.2014 to 30.12.2014 i.e. up to the COD of Asset-II. The O&M expenses for Asset-I for the subsequent periods have been included in Asset-II from its COD viz. 30.12.2014 onwards. The details of O&M Expenses allowed are given hereunder:-

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Asset-I S/C (Bundle Conductor- 4 sub-c)					
Length (KM)	29.221				
Norms (₹ lakh/km)	0.606	0.627	0.647	0.669	0.691
Total O&M Expenses (₹ lakh)	5.53				
Asset-II D/C Bundled(4 or more sun c)					
Length (KM)	29.221	29.221	29.221	29.221	29.221
Norms (₹ lakh/km)	1.062	1.097	1.133	1.171	1.21
Total O&M Expenses (₹ lakh)	7.82	32.06	33.11	34.22	35.36
Asset-III D/C Twin/Triple Conductor					
Length (km)	99.5	99.5	99.5	99.5	99.5
Norms (₹ lakh/km))	0.707	0.731	0.755	0.78	0.806
Total O&M Expenses (₹ lakh)	18.12	72.73	75.12	77.61	80.20

52. 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.

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

Interest on Working Capital

54. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specifies as follows:

“28. Interest on Working Capital

- (c).(i) Receivables equivalent to two months of fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
- (iii) Operation and maintenance expenses for one month”

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

55. The petitioner has considered the rate of interest on working capital to be 13.50%.

56. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The components of the working capital and interest thereon have been worked as follows:-

Asset-I

(₹ in lakh)

Interest on Working Capital	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	1.48	0.00	0.00	0.00	0.00
Maintenance Spares	2.66	0.00	0.00	0.00	0.00
Receivables	376.17	370.00	360.46	350.16	339.87



Interest on Working Capital	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Total	380.30	370.00	360.46	350.16	339.87
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	28.84	49.95	48.66	47.27	45.88

Asset-II

(₹ in lakh)

Interest on Working Capital	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	2.59	2.67	2.76	2.85	2.95
Maintenance Spares	4.65	4.81	4.97	5.13	5.30
Receivables	154.75	153.22	149.51	145.61	141.71
Total	161.99	160.70	157.24	153.60	149.96
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	5.51	21.69	21.23	20.74	20.24

Asset-III

(₹ in lakh)

Interest on Working Capital	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
O & M expenses	5.86	6.06	6.26	6.46	6.68
Maintenance Spares	10.55	10.91	11.27	11.64	12.03
Receivables	433.50	429.86	421.74	411.62	400.17
Total	449.91	446.83	439.26	429.73	418.88
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	15.64	60.32	59.30	58.01	56.55

ANNUAL FIXED CHARGES FOR THE 2014-19 TARIFF PERIOD

57. The transmission charges allowed for the instant transmission assets for the 2014-19 tariff period are summarised below:-

Asset-I

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	12590.10	12781.84	12829.77	12829.77	12829.77
Additional Capitalisation	191.74	47.93	0.00	0.00	0.00
Closing Gross Block	12781.84	12829.77	12829.77	12829.77	12829.77
Average Gross Block	12685.97	12805.81	12829.77	12829.77	12829.77



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Depreciation(%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	11417.37	11525.22	11546.79	11546.79	11546.79
Balance Useful life of the asset	35	34	33	32	31
Elapsed Life	0	1	2	3	4
Remaining Depreciable Value	11417.37	11149.02	10494.45	9817.03	9139.62
Depreciation	376.20	676.15	677.41	677.41	677.41
Cumulative depreciation	376.20	1052.35	1729.76	2407.17	3084.58
Interest on Loan					
Gross Normative Loan	8813.07	8947.29	8980.84	8980.84	8980.84
Cumulative Repayment upto Previous Year	0.00	376.20	1052.35	1729.76	2407.17
Net Loan-Opening	8813.07	8571.09	7928.49	7251.08	6573.67
Additions	134.22	33.55	0.00	0.00	0.00
Repayment during the year	376.20	676.15	677.41	677.41	677.41
Net Loan-Closing	8571.09	7928.49	7251.08	6573.67	5896.26
Average Loan	8692.08	8249.79	7589.79	6912.37	6234.96
Weighted Average Rate of Interest on Loan(%)	8.9700	8.9764	8.9841	8.9911	8.9997
Interest	437.90	740.54	681.88	621.50	561.13
Return on Equity					
Opening Equity	3777.03	3834.55	3848.93	3848.93	3848.93
Additions	57.52	14.38	0.00	0.00	0.00
Closing Equity	3834.55	3848.93	3848.93	3848.93	3848.93
Average Equity	3805.79	3841.74	3848.93	3848.93	3848.93
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT rate for the respective year(%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity(%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	419.17	753.38	754.79	754.79	754.79
Interest on Working Capital					
O & M expenses	1.48	0.00	0.00	0.00	0.00
Maintenance Spares	2.66	0.00	0.00	0.00	0.00
Receivables	376.17	370.00	360.46	350.16	339.87
Total	380.30	370.00	360.46	350.16	339.87
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on working capital	28.84	49.95	48.66	47.27	45.88
Annual Transmission					



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Charges					
Depreciation	376.20	676.15	677.41	677.41	677.41
Interest on Loan	437.90	740.54	681.88	621.50	561.13
Return on Equity	419.17	753.38	754.79	754.79	754.79
Interest on Working Capital	28.84	49.95	48.66	47.27	45.88
O & M Expenses	5.53	0.00	0.00	0.00	0.00
Total	1267.64	2220.02	2162.74	2100.97	2039.21

Asset-II

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	4992.59	5037.18	5049.77	5049.77	5049.77
Additional Capitalisation	44.59	12.59	0.00	0.00	0.00
Closing Gross Block	5037.18	5049.77	5049.77	5049.77	5049.77
Average Gross Block	5014.89	5043.48	5049.77	5049.77	5049.77
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	4513.40	4539.13	4544.79	4544.79	4544.79
Balance Useful life of the asset	35	34	33	32	31
Elapsed Life	0	1	2	3	4
Remaining Depreciable Value	4513.40	4472.39	4211.76	3945.13	3678.50
Depreciation	66.74	266.30	266.63	266.63	266.63
Cumulative depreciation	66.74	333.04	599.66	866.29	1132.92
Interest on Loan					
Gross Normative Loan	3494.81	3526.03	3534.84	3534.84	3534.84
Cumulative Repayment upto Previous Year	0.00	66.74	333.04	599.66	866.29
Net Loan-Opening	3494.81	3459.29	3201.80	2935.18	2668.55
Additions	31.21	8.81	0.00	0.00	0.00
Repayment during the year	66.74	266.30	266.63	266.63	266.63
Net Loan-Closing	3459.29	3201.80	2935.18	2668.55	2401.92
Average Loan	3477.05	3330.54	3068.49	2801.86	2535.23
Weighted Average Rate of Interest on Loan(%)	9.0825	9.0851	9.0933	9.1014	9.1089
Interest	79.60	302.58	279.03	255.01	230.93



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity					
Opening Equity	1497.78	1511.15	1514.93	1514.93	1514.93
Additions	13.38	3.78	0.00	0.00	0.00
Closing Equity	1511.15	1514.93	1514.93	1514.93	1514.93
Average Equity	1504.47	1513.04	1514.93	1514.93	1514.93
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT rate for the respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	74.36	296.71	297.08	297.08	297.08
Interest on Working Capital					
O & M expenses	2.59	2.67	2.76	2.85	2.95
Maintenance Spares	4.65	4.81	4.97	5.13	5.30
Receivables	154.75	153.22	149.51	145.61	141.71
Total	161.99	160.70	157.24	153.60	149.96
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on working capital	5.51	21.69	21.23	20.74	20.24
Annual Transmission Charges					
Depreciation	66.74	266.30	266.63	266.63	266.63
Interest on Loan	79.60	302.58	279.03	255.01	230.93
Return on Equity	74.36	296.71	297.08	297.08	297.08
Interest on Working Capital	5.51	21.69	21.23	20.74	20.24
O & M Expenses	7.82	32.06	33.11	34.22	35.36
Total	234.04	919.34	897.07	873.68	850.25

Asset-III

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation					
Opening Gross Block	14014.95	14107.28	14230.39	14322.72	14322.72
Additional Capitalisation	92.33	123.11	92.33	0.00	0.00
Closing Gross Block	14107.28	14230.39	14322.72	14322.72	14322.72
Average Gross Block	14061.12	14168.84	14276.56	14322.72	14322.72
Rate of Depreciation (%)	5.28	5.28	5.28	5.28	5.28
Depreciable Value	12655.00	12751.95	12848.90	12890.45	12890.45
Balance Useful life of the asset	35	34	33	32	31



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Elapsed Life	0	1	2	3	4
Remaining Depreciable Value	12655.00	12560.73	11909.30	11196.60	10439.83
Depreciation	191.22	748.38	754.25	756.77	756.77
Cumulative depreciation	191.22	939.60	1693.85	2450.62	3207.39
Interest on Loan					
Gross Normative Loan	9810.47	9875.10	9961.27	10025.90	10025.90
Cumulative Repayment upto Previous Year	0.00	191.22	939.60	1693.85	2450.62
Net Loan-Opening	9810.47	9683.88	9021.67	8332.05	7575.28
Additions	64.63	86.18	64.63	0.00	0.00
Repayment during the year	191.22	748.38	754.25	756.77	756.77
Net Loan-Closing	9683.88	9021.67	8332.05	7575.28	6818.51
Average Loan	9747.17	9352.77	8676.86	7953.67	7196.90
Weighted Average Rate of Interest on Loan (%)	9.2351	9.2398	9.2411	9.2375	9.2382
Interest	231.82	864.18	801.84	734.72	664.87
Return on Equity					
Opening Equity	4204.49	4232.18	4269.12	4296.82	4296.82
Additions	27.70	36.93	27.70	0.00	0.00
Closing Equity	4232.18	4269.12	4296.82	4296.82	4296.82
Average Equity	4218.33	4250.65	4282.97	4296.82	4296.82
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500	15.500
MAT rate for the respective year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity	213.04	833.57	839.91	842.62	842.62
Interest on Working Capital					
O & M expenses	5.86	6.06	6.26	6.46	6.68
Maintenance Spares	10.55	10.91	11.27	11.64	12.03
Receivables	433.50	429.86	421.74	411.62	400.17
Total	449.91	446.83	439.26	429.73	418.88
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on working capital	15.64	60.32	59.30	58.01	56.55
Annual Transmission Charges					
Depreciation	191.22	748.38	754.25	756.77	756.77

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Loan	231.82	864.18	801.84	734.72	664.87
Return on Equity	213.04	833.57	839.91	842.62	842.62
Interest on Working Capital	15.64	60.32	59.30	58.01	56.55
O & M Expenses	18.12	72.73	75.12	77.61	80.20
Total	669.84	2579.18	2530.42	2469.74	2401.00

Filing Fee and the Publication Expenses

58. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. 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 Regulation 52 (1) of the 2014 Tariff Regulations.

Licence Fee & RLDC Fees and Charges

59. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 52 (2) (b) of the 2014 Tariff Regulations for 2014-19 tariff period. The petitioner shall also be entitled for recovery of RLDC fee & charges in accordance with Regulations 52 (2) (a) of the 2014 Tariff Regulations for 2014-19 tariff period.

Service Tax

60. The petitioner has prayed for reimbursement of service tax if it is subjected to such tax in future. We are of the view that the petitioner's prayer is premature.

Sharing of Transmission Charges

61. 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.

62. This order disposes of Petition No. 132/TT/2015.

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

Sd/-
(A.S. Bakshi)
Member

DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO FOR 2014-19**Asset-I**

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
BOND XXVIII-DOCO Funding-	9.33	277.00	0.00	277.00
BOND XXIX-DOCO Funding-	9.20	378.00	0.00	378.00
BOND XXX-DOCO Funding-	8.80	1639.00	0.00	1639.00
BOND XXXI-DOCO Funding-	8.90	2506.00	0.00	2506.00
BOND XXXIII-DOCO Funding-	8.64	1110.00	0.00	1110.00
BOND XXXII-DOCO Funding-	8.84	409.00	0.00	409.00
BOND-XXXIV-DOCO Funding-	8.84	546.00	0.00	546.00
BOND XXXVI-DOCO Funding-	9.35	1144.41	0.00	1144.41
PROPOSED LOAN 2014-15 (9.30%)-DOCO Funding-	9.30	803.66	0.00	803.66
Total		8813.07	0.00	8813.07

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

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	8813.07	8813.07	8813.07	8813.07	8813.07
Cumulative Repayments of Loans upto Previous Year	581.16	1060.73	1632.80	2281.16	2929.52
Net Loans Opening	8231.91	7752.34	7180.27	6531.91	5883.55
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	479.57	572.07	648.36	648.36	648.36
Net Closing Loan	7752.34	7180.27	6531.91	5883.55	5235.19
Average Net Loan	7992.13	7466.31	6856.09	6207.73	5559.37
Rate of Interest on Loan (%)	8.9700	8.9764	8.9841	8.9911	8.9997
Interest on Loan	716.90	670.21	615.96	558.14	500.33

Asset-II

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
BOND XXVIII-DOCO XXVIII-	9.33	307.00	0.00	307.00
BOND XXIX-doco loan bond 29-	9.20	478.00	0.00	478.00
BOND XXX-doco loan bond 30-	8.80	1578.00	0.00	1578.00
BOND XXXVI-doco loan bond 36-	9.35	190.71	0.00	190.71
BOND XL-doco loan bond XL-	9.30	502.43	0.00	502.43
BOND - XLI-doco loan bond XL1-	8.85	178.00	0.00	178.00
PROPOSED LOAN 2014-15 -doco loan -	9.65	260.67	0.00	260.67
Total		3494.81	0.00	3494.81

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

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	3494.81	3494.81	3494.81	3494.81	3494.81
Cumulative Repayments of Loans upto Previous Year	393.84	459.25	656.16	922.48	1188.80
Net Loans Opening	3100.97	3035.56	2838.65	2572.33	2306.01
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	65.41	196.91	266.32	266.32	288.04
Net Closing Loan	3035.56	2838.65	2572.33	2306.01	2017.97
Average Net Loan	3068.27	2937.11	2705.49	2439.17	2161.99
Rate of Interest on Loan (%)	9.0825	9.0851	9.0933	9.1014	9.1089
Interest on Loan	278.67	266.84	246.02	222.00	196.93



Asset-III

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2010	Additions during the tariff period	Total
BOND XXVIII-DOCO XXVIII-	9.33	1650.00	0.00	1650.00
BOND XXIX-DOCO XXIX-	9.20	1100.00	0.00	1100.00
BOND XXX-DOCO XXX-	8.80	2100.00	0.00	2100.00
BOND XXXI-DOCO XXXI-	8.90	349.00	0.00	349.00
BOND XXXII-DOCO XXXII-	8.84	67.00	0.00	67.00
BOND-XXXIV-DOCO XXXIV-	8.84	0.87	0.00	0.87
SBI (21.03.2012)-DOCO SBI-	10.25	1525.00	0.00	1525.00
BOND - XLII-DOCO XLII-	8.80	137.75	0.00	137.75
BOND - XLIII-DOCO XLIII-	7.93	822.14	0.00	822.14
BOND - XLV-DOCO XLV-	9.65	700.00	0.00	700.00
PROPOSED LOAN 2014-15 (9.30%)-DOCO PDL 14-15-	9.30	1358.71	0.00	1358.71
Total		9810.47	0.00	9810.47

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

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	9810.47	9810.47	9810.47	9810.47	9810.47
Cumulative Repayments of Loans upto Previous Year	843.06	1106.89	1545.79	2123.33	2827.71
Net Loans Opening	8967.41	8703.58	8264.68	7687.14	6982.76
Add: Draw(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	263.83	438.90	577.54	704.38	704.38
Net Closing Loan	8703.58	8264.68	7687.14	6982.76	6278.38
Average Net Loan	8835.50	8484.13	7975.91	7334.95	6630.57
Rate of Interest on Loan (%)	9.2351	9.2398	9.2411	9.2375	9.2382
Interest on Loan	815.96	783.92	737.06	677.57	612.55

