CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO. 283/TT/2015

Coram: Shri A.S. Bakshi, Member Dr. M. K. Iyer, Member

Date of Hearing : 29.04.2016 Date of Order : 25.05.2016

In the matter of:

Determination of transmission tariff for LILO of 400 kV D/C Kolhapur - Mapusa at 400 kV Kolhapur GIS (New) along with associated bays and 125 MVAR Bus Reactor along with associated bays at 400 kV Kolhapur GIS (New) under Transmission System associated with "System Strengthening - XVII in Southern Regional Grid" in Western Region for 2014-19 tariff block under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and 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-122001 (Haryana)

.....Petitioner

Versus

- Karnataka Power Transmission Corporation Limited, (KPTCL), Kaveri Bhawan, Bangalore – 560009
- 2. Transmission Corporation of Andhra Pradesh Limited, (APTRANSCO), Vidyut Soudha, Hyderabad- 500082
- Kerala State Electricity Board (KSEB), Vaidyuthi Bhavanam, Pattom, Thiruvananthapurarn - 695 004



 Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), NPKRR Maaligai, 800, Anna Salai, Chennai - 600 002

5. Electricity Department, Govt. of Pondicherry, Pondicherry - 605001

 Eastern Power Distribution Company of Andhra Pradesh Limited, (APEPDCL) P&T Colony, Seethmmadhara, Vishakhapatnam, Andhra Pradesh

7. Southern Power Distribution Company of Andhra Pradesh Limited, (APSPDCL), Srinivasasa Kalyana Mandapam Backside,

Tiruchanoor Road, Kesavayana Gunta, Tirupati-517 501, Chittoor District, Andhra Pradesh

8. Central Power Distribution Company of Andhra Pradesh Limited, (APCPDCL), Corporate Office, Mint Compound, Hyderabad - 500 063, Andhra Pradesh

 Northern Power Distribution Company of Andhra Pradesh Limited, (APNPDCL), Opp. NIT Petrol Pump, Chaitanyapuri, Kazipet, Warangal - 506 004, Andhra Pradesh

 Bangalore Electricity Supply Company Ltd. (BESCOM), Corporate Office, KR.Circle Bangalore - 560001, Karnataka

11. Gulbarga Electricity Supply Company Ltd (GESCOM) Station Main Road, Gulburga, Karnataka

12. Hubli Electricity Supply Company Ltd, (HESCOM) Navanagar, PB Road, Hubli, Karnataka

13. MESCOM Corporate Office, Paradigm Plaza, AB Shetty Circle, Mangalore – 575001, Karnataka

14. Chamundeswari Electricity Supply Corporation Ltd., (CESC), 927,L J Avenue, Ground Floor, New Kantharaj Urs Road, Saraswatipuram, MYSORE - 570 009, Karnataka

15. Electricity Department Govt. Of Goa Vidyut Bhawan, Panaji, Near Mandvi Hotel, Goa - 403 001



16. II & FS Tamilnadu Power Company Limited,
B-Block, 4th floor,
Navin's Presidium,
103, Nelson Manickam Road,
Aminjikarai, Chennai- 600029 Tamilnadu

17. PEL Power Limited, 8-2-293/A/76, Road No. 9A, Jubilee Hills, Hyderabad- 500033, Andhra Pradesh

18. Madhya Pradesh Power Management Company Ltd. Shakti Bhawan, Rampur Jabalpur – 482008

 Maharashtra State Electricity Distribution Co. Ltd. Prakashgad, 4th Floor Andheri (East), Mumbai - 400 052

20. Gujarat Urja Vikas Nigam Ltd.Sardar Patel Vidyut Bhawan,Race Course Road, Vadodara - 390 007

21. Electricity Department Govt. Of Goa Vidyut Bhawan, Panaji, Near Mandvi Hotel, Goa - 403 001

22. Electricity Department
Administration of Daman & Diu
Daman - 396 210

23. Electricity Department
Administration Of Dadra Nagar Haveli
U.T., Silvassa - 396 230

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

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

...Respondent(s)



The following were present:

For Petitioner: Shri S. S. Raju, PGCIL

Shri M. M. Mondal, PGCIL Shri Rakesh Prasad, PGCIL Shri Subhash C Taneja, PGCIL Shri S. K. Venkatesan, PGCIL Shri Pankaj Sharma, PGCIL Shri A. M. Pavgi, PGCIL Shri Mohd. Mohsin, PGCIL Shri Piyush Awasthi, PGCIL

For Respondents: None

<u>ORDER</u>

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 LILO of 400 kV D/C Kolhapur - Mapusa at 400 kV Kolhapur GIS (New) along with associated bays and 125 MVAR Bus Reactor along with associated bays at 400 kV Kolhapur GIS (New) under Transmission System associated with "System Strengthening - XVII in Southern Regional Grid" in Western Region (hereinafter referred to as "the transmission asset")

2. The petitioner has been entrusted with Transmission System associated with "System Strengthening – XVII in Southern Regional Grid" in Southern Region. The scope of work covered under "System Strengthening – XVII in Southern Regional Grid" in Southern Region is as follows:

Transmission Lines:

- (i) Narendra (New, Kudgi) Kolhapur (New) 765kV D/C Transmission Line (initially charged at 400kV)
- (ii) LILO of both circuits of Kolhapur Mapusa 400kV D/C Transmission line at Kolhapur (New)



(iii) Narendra (New, Kudgi) – Narendra (Existing) 400kV D/C Quad Transmission Line

Sub Station:

- (i) Establishment of 765/400kV GIS Substation at Narendra (New, Kudgi), (Initially charged at 400kV).
- (ii) Establishment of 765/400kV GIS Substation at Kolhapur (New), (Initially charged at 400kV)
- (iii) Extension of 400/220kV Substation at Narendra (AIS)
- 3. The brief facts of the case are as follows:
 - a) The scope of the scheme was discussed and agreed in the 31st & 33rd SCM of Southern Region Constituents held on 16.11.2010 & 20.10.2011 respectively. Subsequently the scheme was discussed and approved in the 18th Meeting of SRPC held on 23.12.2011.
 - b) The Investment Approval (IA) to the transmission project was accorded by the Board of Directors of the petitioner company vide Memorandum No. C/CP/SRSS-XVII dated 2.7.2012, at an estimated cost of ₹150874 lakh including IDC of ₹6197 lakh based on April 2012 price level.
- 4. The transmission charges claimed by the petitioner based on the actual date of commercial operation are as follows:-

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	311.58	933.72	1068.96	1104.15
Interest on Loan	77.66	227.26	246.39	235.93
Return on Equity	350.68	1040.96	1214.75	1257.70
Interest on Working Capital	24.55	70.80	79.02	81.27
O & M Expenses	136.08	364.13	376.18	388.69
Total	900.55	2636.87	2985.30	3067.74



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

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O&M Expenses	29.37	30.34	31.35	32.39
Maintenance Spares	52.87	54.62	56.43	58.30
Receivables	388.73	439.48	497.55	511.29
Total working capital	470.97	524.44	585.33	601.98
Rate of Interest	13.50	13.50	13.50	13.50
Interest on working capital	24.55	70.80	79.02	81.27

- 6. As per the Investment Approval, the project was scheduled to be commissioned within 33 months from the date of approval of Board of Directors. As per Investment Approval, the date of approval of Board of Directors is 27.6.2012 and accordingly the schedule date of completion of work is 26.3.2015.
- 7. The petitioner, vide affidavit dated 17.5.2016, has submitted the actual date of commercial operation of the assets covered in the instant petition, as below:

Asset description	Actual COD
LILO of 400 kV D/C Kolhapur - Mapusa at 400 kV Kolhapur GIS (New) along with associated bays and 125 MVAR Bus Reactor along with associated bays at 400 kV Kolhapur GIS (New)	12.11.2015

8. The petitioner has submitted, vide affidavit dated 17.5.2016, letter declaring the COD and trial operation certificate issued by RLDC in respect of commissioning of the instant transmission asset.

9. The petitioner has claimed capital cost, as per Auditor's Certificate dated 16.5.2016 along with the estimated additional capital expenditure during 2014-19 tariff period, is as below:

(₹ in lakh)

Apportioned approved cost	Capital cost up to COD	Estimated Additional Capital expenditure for 2015-16	Estimated Additional Capital expenditure for 2016-17	Projected Expenditure for 2017-18	Total Estimated Cost as on 31.3.2019
22422.78	15414.43	989.54	4426.50	1453.17	22283.64

- 10. The Commission has observed that the assets covered in the instant petition are distinctly identifiable in the Scope of Works for "System Strengthening XVII in Southern Regional Grid" in Southern Region submitted by the petitioner vide affidavit dated 27.10.2015.
- 11. 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 17.12.2015.
- 12. The petition was served 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 29.4.2016. The petitioner was directed to submit additional information in respect of the instant transmission assets vide letter dated 18.12.2015 and the Record of Proceedings for hearing dated 29.4.2016. In response, the petitioner has filed the rejoinder vide affidavit dated 26.4.2016 and 17.5.2016.



13. 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.

Date of Commercial Operation (COD)

- 14. The petitioner has submitted that the assets has been put under commercial operation on 12.11.2015 and hence, the tariff has been claimed from the date of commercial operation of 12.11.2015.
- 15. 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"

16. The petitioner, vide affidavit dated 17.5.2016, has submitted the RLDC 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 the instant transmission asset. Accordingly, the commercial operation date of the transmission asset is considered as 12.11.2015. The tariff is worked out for the asset from its COD to 31.3.2019 in accordance with the 2014 Tariff Regulations.



Capital Cost

- 17. The petitioner has claimed the capital cost as mentioned in Para 7 supported by Auditor's Certificate dated 16.5.2016, after adjusting the interest during construction (IDC) and incidental expenditure during construction (IEDC) as discharged on cash basis. The total capital cost up to 31.3.2019 includes the IDC, IEDC, capitalized spares and estimated additional capital expenditure from COD to 31.3.2019.
- 18. Regulation 9 (1), 9(2) and 10 (1) of the 2014 Tariff Regulations provides 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:"

19. 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

- 20. As per the initial petition submitted vide affidavit dated 27.10.2015, the apportioned cost of the transmission asset was ₹19172.79 lakh which has been revised to ₹22422.78 lakh vide affidavit dated 17.5.2016. The estimated completion cost is within the apportioned approved cost as given in Para 7 of this order. Hence, there is no cost over-run.
- 21. The petitioner has submitted the reasons for item wise cost variation in case of few elements of the asset as below:

i. Increase in compensation amount:

The higher side variation in this head is mainly due to increase in the amount towards crop/ tree compensation based on the assessment by concerned state Revenue Authorities/ Horticulture Department. The total expenditure also includes the estimated compensation for balance disbursement in line with guideline of state authority.

ii. Increase in cost of transmission line material:

Due to increase in populated area and habitations the tapping point for LILO at Kolhapur - Mapusa T/L has been changed. The change in tapping point resulted into increased angle points whereas the line length was not affected much. Increased angle points resulted into increase in tower weight by 123.84



MT. Due to increased angle points, type of Hardware fittings (suspension to tension fittings) have also changed and further increased the quantity of 160 KN insulators.

iii. Further, there is increase in cost of civil works in township & colony, roads and drainage, foundation or structures etc. There is high undulation in the ground in township area, thereby increasing the earthwork quantity in road works, building works etc. The cost variation is also due to increase in awarded cost with respect to the FR cost.

22. We have considered the submissions made by the petitioner regarding cost variation in case of the instant transmission assets. There is significant variation of the cost of few elements indicates that the estimates prepared by the petitioner is not realistic. We are of the view that the petitioner should adopt a prudent procedure to make cost estimates of different elements of the transmission projects to make the estimates more realistic.

Time Over-run

23. As per the Investment Approval, the project was scheduled to be commissioned within 33 months from the date of Investment Approval. The date of Investment Approval is 27.6.2012 and accordingly the schedule date of completion of work is 26.3.2015. Against the scheduled completion date of 26.3.2015, the asset has been commissioned on 12.11.2015. Thus, there is time overrun of around 7.7 months.



24. The petitioner has submitted that the reason for delay was mainly due to delay in award of Tower package for 765kV D/C Kudgi (New)- Kolhapur (New) Transmission Line and LILO of 400 kV D/C Kohlapur - Mapusa Transmission Line at Kolhapur Substation and 400kV GIS Kolhapur Substation package. The petitioner has submitted that the procurement of these tower and substation packages were taken up through the World Bank funding and these packages were covered under the prior review procedure of the Bank as per the Bank's guidelines.

Delay in Tower Package:

25. In respect of the Tower Package, the petitioner has submitted that since there were substantial number of tower packages under the instant World Bank funding, the procurement process was initiated with the bids invited on 22.3.2012 and the bidding documents were forwarded to the World Bank for their concurrence. After receipt of the Bank's "No Objection" to the bidding documents of the subject package on 24.4.2012, the bids were opened on 8.5.2012 and after due diligence the bid evaluation report was forwarded to the Bank on 3.7.2012. With serious concerns raised by the petitioner on extremely poor performance and capacity constraints of the bidder which would be extremely detrimental to the petitioner's interest, after several round of discussions with the Bank, it was found appropriate to annul the bidding process and re-invite fresh bids for which Bank's 'No Objection' was received on 28.6.2013. Accordingly, after the annulment of the said bidding process, fresh bidding process under the World Bank funding for the tower package were immediately initiated for which IFB (invitation for bids) was published on 20.8.2013. After evaluation of the bids and obtaining 'No-Objection' from the Bank to the bid evaluation Report on 4.11.2013, the award was placed on 26.11.2013.



Delay in Substation Package:

26. In respect of the substation package, the petitioner has submitted that the bidding documents were forwarded to the World Bank on 13.3.2012 for their clearance as per the prior review procedure of the Bank. After receipt of the Bank's 'No Objection' to the bidding documents of the subject package on 16.5.2012, the procurement process was initiated on 22.5.2012 and the bid evaluation report was forwarded to the Bank on 27.12.2012. After receipt of Bank's 'No Objection' on 14.11.2013, the award was placed on 5.2.2013. The agency M/s. Pinggao Group Co. Ltd., China [PINGGAO], on whom the award was placed, however, did not accept the order even after lot of follow ups due to disagreement regarding the scope of work. As PINGGAO neither signed the contract agreements nor submitted the contract performance guarantees within the prescribed time frame, the award on PINGGAO was annulled, after obtaining clearances from the World Bank in 24.6.2013. After the annulment of the said bidding process, fresh bidding process for the package was immediately initiated and the bidding documents were issued to the bidders on 13.8.2013. Simultaneously, the bidding documents were forwarded to World Bank on 30.8.2013 for their clearance. After obtaining 'No-Objection' to the bidding document from the Bank on 29.8.2013, bids were invited for which IFB was published on 15.10.2013. After evaluation of the bids and obtaining 'No-Objection' from the Bank to the bid evaluation report on 21.12.2013, the award was placed on 12.2.2014.

27. The petitioner has submitted that the annulment of bidding processes and again starting the bidding processes afresh for the Tower and Substation packages has caused an unavoidable initial delay of 17 to 20 months.



Delay in Execution due to RoW issues:

- 28. The petitioner has submitted that in addition to the initial delay, the petitioner had faced severe RoW issues at two of the locations during the construction of the line, wherein Section 16 under Telegraph Act, 1885 had to be invoked. The work at these locations could be started only after the direction was issued by the District Magistrate.
- 29. We have considered the submissions of the petitioner. The petitioner has claimed time overrun on account of re-tendering of tower and sub-station packages and RoW issues. The claims made by petitioner are summarised as below:

Items/activities	Tower package	S/S package
Scope discussion		16.11.2010
Scope discussion		20.10.2011
Scheme approval		23.12.2011
Bids invited	22.3.2012	22.5.2012
NOC received from the World Bank (WB)	24.4.2012	
Bids opened	8.5.2012	
Investment Approval		27.6.2012
Bid evaluation report forwarded to WB	3.7.2012	27.12.2012
NOC received from WB to the bid evaluation report		14.1.2013
Order placed		5.2.2013 (M/s Pinngao)
Receipt of NOC from WB for annulment of bidding	28.6.2013	24.6.2013
Re-tendering initiated	20.8.2013	13.8.2013
NOC received from the WB to the bid evaluation report	4.11.2013	21.12.2013
Order placed	26.11.2013	12.2.2014
SCOD		26.3.2015
COD		12.11.2015

In addition to the time overrun on account of re-tendering, there is a delay of around 2.5 months on account of RoW issues.



- 30. It is observed that bids had been invited for the packages before the Investment Approval date. The tender had to be cancelled at different stages in both the packages. The petitioner has submitted that in case of the sub-station package the selected bidder, on whom the award was placed, didn't agree to the scope of work even after regular follow-ups. It is to mention that the scope of work is defined before finalising the vendor and placing the order. The final order is placed only once the parties have agreed to the specific scope of activities to be carried out under the tender. The Commission is therefore not convinced with such submission of the petitioner.
- 31. The Commission has further observed that it took the petitioner almost an year viz. July 2012 to June 2013 to decide on the annulment of tender for the tower package. However, the petitioner has not submitted any documentary evidence to substantiate the claims made in respect of the re-tendering of the packages and the steps taken by the petitioner throughout the tendering process. Further, the petitioner has not filed any rejoinder to Commission's letter dated 18.12.2015, where Commission had asked the petitioner to submit the details of efforts made by the petitioner to resolve the issues that led to time overrun. We have noted the delay of the re-tendering for the packages. However, it is to mention that the petitioner is failed to furnish the documentary evidence to substantiate the time overrun. Thus, the Commission is not condoning the time overrun claimed on account of retendering. Based on the aforesaid observations, we are not convinced with the reasons of re-tendering to justify the time overrun.
- 32. With respect to the RoW issues, the Commission has observed that the total delay on this account is of around 2.5 months, as below:



Location	From	То
Location 7/2 (Loop out location)	25-05-2015	12-08-2015
Location 14/4 (Loop in location)	04-06-2015	25-08-2015

33. The petitioner has submitted the details of cases filed in the District Court and the direction issued by the District Magistrate, Kolhapur towards resumption of construction work vide its order dated 12.8.2015 and 25.8.2015. The Commission is convinced that the delay of around 2.5 months claimed on account of RoW issues was uncontrollable.

34. The petitioner has submitted that despite substantial initial delay of more than 17 months and the delay of more than two months during execution due to court cases, which were beyond the control of the petitioner, the petitioner with its vast experience of project execution and by putting in its best efforts to complete the assets has been able to recover the delay of more than 10 months. As discussed in the above Paras, the Commission is condoning the delay of 2.5 months towards RoW issues and the corresponding IDC/IEDC. The delay due to re-tendering is not being condoned.

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

35. The details of IDC and IEDC as per the Auditor's Certificate dated 16.5.2016 are as below:-

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Particulars	IDC	IEDC
Up to SCOD (33 months)*	98.23	208.53
From SCOD to COD*	177.64	331.18
Total	275.87	539.71

^{*}based on pro-rata adjustment



36. The petitioner has submitted, vide affidavit dated 17.5.2016, the details of IDC discharged up to COD as below:-

(₹ in lakh)

Actual COD	IDC as per Auditor's Certificate	IDC discharged up to COD	IDC discharged from COD to 31.3.2016
12.11.2015	275.87	211.80	64.07

The petitioner has adjusted the IDC discharged on cash basis for the tariff computation purpose.

37. With reference to para 34 above, proportionate IDC and IEDC disallowed is shown below:-

(₹ in lakh)

		·
Particulars	IDC	IEDC
Up to SCOD (33 months)	98.23	208.53
From SCOD to COD	177.64	331.18
Disallowed for 5 months	115.35	215.05
Total Disallowance	330	.40

38. Thus, IDC amounting to ₹115.35 lakh (₹51.28 lakh up to COD and ₹64.07 lakh during 2015-16) and IEDC amounting to ₹215.05 lakh are deducted from the capital cost based on the above. The capital cost of ₹15084.04 lakh (₹15414.44- ₹51.28- ₹215.05) lakh on cash basis as on COD is considered for the purpose of tariff determination.

Initial Spares

39. The petitioner has claimed initial spares of ₹60.33 lakh and ₹346.29 lakh pertaining to transmission line and sub-station, corresponding to capital cost of ₹7132.82 lakh and ₹10426.35 lakh respectively (excluding IDC, IEDC, Land cost and cost of civil works) up to the cut-off date of 31.3.2018.



40. The allowable initial spares have been computed based on the norms in accordance with clause 13 of Tariff Regulations 2014, as below:

(₹ in lakh)

Element	P&M Cost as per Auditor's Certificate (exc. IDC,IEDC, civil works)	Initial Spares Claimed (as submitted vide Auditor's certificate)	Ceiling limit as per 2014 Regulation	Initial spares allowed	Excess initial spares
Transmission line	7132.82	60.33	1.00%	71.33	0.00
Substation	10426.35	346.29	6.00%	643.42	0.00

- 41. The initial spares claimed by the petitioner are within the normative limits in accordance with clause 13 of the Tariff Regulations. Thus, the same is allowed for computation of tariff.
- 42. 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:-

(₹ in lakh)

Particulars	Capital cost claimed as on COD	IDC discharged during 2015-16	Capital cost on cash basis (a)	Total IDC disallowed	IDC disallowed from COD (b)	IEDC disallowed from COD (c)	Capital cost on COD considered for tariff determination (a-b-c)
Land - Freehold	250.05	0.00	250.05	0.00	0.00		250.05
Land - Leasehold	0.00	0.00	0.00	0.00	0.00		0.00
Buliding Civil Works & Colony	959.23	4.05	955.18	7.30	3.24	13.60	938.33
Transmission Line	6320.52	26.70	6293.82	48.08	21.37	89.63	6182.81
Sub Station	7738.2	32.69	7705.51	58.86	26.17	109.74	7569.60
PLCC	146.44	0.62	145.82	1.11	0.50	2.08	143.25
Total	15414.44	64.07	15350.37	115.35	51.28	215.05	15084.04

Additional Capital Expenditure

43. 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:"
- 44. 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 "

- 45. The petitioner has claimed an estimated additional capital expenditure of ₹989.54 lakh, ₹4426.50 lakh and ₹1453.17 lakh during 2014-19 tariff period, on account of balance and retention payments.
- 46. 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. Further, the IDC discharged on cash basis, as treated in para 36 and 37 is being disallowed in additional capital expenditure of 2015-16. Thus the additional capital expenditure allowed for the 2014-19 tariff period is as follows:-



(₹ in lakh)

Apportioned	Exp. Up to	Addition	Total Est.			
approved cost	COD	Exp. for 2015-16	Exp. for 2016-17	Exp. for 2017-18	Total	Exp.
22422.78	15084.04	989.53*	4426.49	1453.17	6869.19	21953.23

^{*}IDC discharged during the year has not been allowed on account of time overrun

Debt: Equity

47. 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 submitted, vide affidavit dated 17.5.2016, the debt: equity ratio considered the asset. The petitioner has considered debt: equity ratio of 70.04:29.96 on COD which is in line with the 2014 Tariff Regulations, hence the same is considered for calculation of tariff. It is observed that the debt:equity ratio for the expenditure incurred during 2015-16 is 98.18:1.82. Thus, the same is considered for tariff purpose.

48. 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	(%)
Debt	10564.30	70.04	5087.24	74.06	15651.54	71.29
Equity	4519.74	29.96	1781.95	25.94	6301.69	28.71
Total	15084.04	100.00	6869.19	100.00	21953.23	100.00

Return on Equity ("ROE")

- 49. 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."

50. The petitioner has claimed ROE at the rate of 20.961% during 2014-15 and at 21.342% during 2015-2019 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.



- 51. 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.
- 52. 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::-

(₹ in lakh)

Return on Equity	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	4519.74	4537.79	5865.73	6301.69
Additions	18.05	1327.95	435.95	0.00
Closing Equity	4537.79	5865.73	6301.69	6301.69
Average Equity	4528.76	5201.76	6083.71	6301.69
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	343.80	1025.03	1198.82	1241.78

Interest on Loan ("IoL")

53. 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."
- 54. 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:-

(₹ in lakh)

Interest on Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross Normative Loan	10564.30	11535.78	14634.32	15651.54
Cumulative Repayment upto Previous Yr	0.00	304.94	1221.58	2273.48
Net Loan-Opening	10564.30	11230.84	13412.74	13378.06
Additions	971.48	3098.54	1017.22	0.00
Repayment during the year	304.94	916.64	1051.90	1087.08
Net Loan-Closing	11230.84	13412.74	13378.06	12290.98
Average Loan	10897.57	12321.79	13395.40	12834.52
Weighted Average Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
Interest on Loan	75.99	223.02	242.46	232.30



Depreciation

55. 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."
- 56. 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"
- 57. 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 29 years in accordance with the above regulation. The detailed calculations for depreciation for the transmission asset are worked out and allowed as follows:-

(₹ in lakh)

Depreciation	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	15084.04	16073.57	20500.06	21953.23
Additional Capitalization	989.53	4426.49	1453.17	0.00
Closing Gross Block	16073.57	20500.06	21953.23	21953.23
Average Gross Block	15578.80	18286.81	21226.64	21953.23
Rate of Depreciation (%)	5.08	5.01	4.96	4.95
Balance Useful life of the asset	29	28	27	26
Elapsed life	0	1	2	3
Remaining Depreciable Value	13350.59	15482.85	15220.14	14168.24
Depreciation during the year	304.94	916.64	1051.90	1087.08
Cumulative depreciation (incl. of AAD)	304.94	1221.58	2273.48	3360.56

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

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

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
400 kV GIS bay				
No.	1	1	1	1
Norms (₹ lakh/bay)	53.25	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	319.50	330.12	341.04	352.38
D/C twin/triple cond.				
No.	40.33	40.33	40.33	40.33
Norms (₹ lakh/KM)	0.731	0.755	0.78	0.806
Total O&M Expenses (₹ lakh)	29.48	30.45	31.46	32.51
M/C twin/triple cond.				
No.	2.69	2.69	2.69	2.69
Norms (₹ lakh/KM)	1.282	1.324	1.368	1.413
Total O&M Expenses (₹ lakh)	3.45	3.56	3.68	3.80



- 59. 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.
- 60. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on Working Capital

61. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations 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;"
- 62. The petitioner has considered the rate of interest on working capital to be 13.50%.



63. 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:-

(₹ in lakh)

Interest on Working Capital	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O & M expenses	29.37	30.34	31.35	32.39
Maintenance Spares	52.86	54.62	56.43	58.30
Receivables	382.74	433.13	491.25	505.05
Total	464.97	518.09	579.03	595.74
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on Working Capital	24.18	69.94	78.17	80.42

ANNUAL FIXED CHARGES FOR THE 2014-19 TARIFF PERIOD

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

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation				
Opening Gross Block	15084.04	16073.57	20500.06	21953.23
Additional Capitalisation	989.53	4426.49	1453.17	0.00
Closing Gross Block	16073.57	20500.06	21953.23	21953.23
Average Gross Block	15578.80	18286.81	21226.64	21953.23
Rate of Depreciation	5.08	5.01	4.96	4.95
Depreciable Value	13795.88	15787.80	16441.72	16441.72
Balance Useful life of the asset	29	28	27	26
Elapsed Life	0	1	2	3
Remaining Depreciable Value	13350.59	15482.85	15220.14	14168.24
Depreciation	304.94	916.64	1051.90	1087.08
Cumulative depreciation	304.94	1221.58	2273.48	3360.56
Interest on Loan				
Gross Normative Loan	10564.30	11535.78	14634.32	15651.54
Cumulative Repayment upto Previous Year	0.00	304.94	1221.58	2273.48
Net Loan-Opening	10564.30	11230.84	13412.74	13378.06
Additions	971.48	3098.54	1017.22	0.00
Repayment during the year	304.94	916.64	1051.90	1087.08
Net Loan-Closing	11230.84	13412.74	13378.06	12290.98



Average Loan	10897.57	12321.79	13395.40	12834.52
Weighted Average Rate of Interest on Loan	1.8100	1.8100	1.8100	1.8100
Interest	75.99	223.02	242.46	232.30
Return on Equity				
Opening Equity	4519.74	4537.79	5865.73	6301.69
Additions	18.05	1327.95	435.95	0.00
Closing Equity	4537.79	5865.73	6301.69	6301.69
Average Equity	4528.76	5201.76	6083.71	6301.69
Return on Equity (Base Rate)	15.500	15.500	15.500	15.500
MAT rate for the respective year	21.342	21.342	21.342	21.342
Rate of Return on Equity	19.705	19.705	19.705	19.705
Return on Equity	343.80	1025.03	1198.82	1241.78
Interest on Working Capital				
O & M expenses	29.37	30.34	31.35	32.39
Maintenance Spares	52.86	54.62	56.43	58.30
Receivables	382.74	433.13	491.25	505.05
Total	464.97	518.09	579.03	595.74
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on working capital	24.18	69.94	78.17	80.42
Annual Transmission Charges				
Depreciation	304.94	916.64	1051.90	1087.08
Interest on Loan	75.99	223.02	242.46	232.30
Return on Equity	343.80	1025.03	1198.82	1241.78
Interest on Working Capital	24.18	69.94	78.17	80.42
O & M Expenses	135.77	364.13	376.18	388.69
Total	884.68	2598.77	2947.52	3030.27

Filing Fee and the Publication Expenses

65. 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

66. 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

67. 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.

Foreign Exchange Rate Variation

The petitioner has sought recovery of FERV on foreign loans deployed under clause 50 of 2014 Tariff Regulations. The petitioner is entitled to recover the FERV directly from the beneficiaries or the long term transmission customers / DICs, as the case may be, in accordance with Regulation 51(1) of the 2014 Tariff Regulations.

Sharing of Transmission Charges

- 68. 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.
- 69. This order disposes of Petition No. 283/TT/2015.

Sd/- Sd/-

(Dr. M.K. lyer) Member (A.S. Bakshi) Member



DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO FOR 2014-19

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
IBRD V Add Cap for 2015-16-1 68	1.81	0.00	989.54	989.54
IBRD V Add Cap for 2015-16-2 66.64	1.81	0.00	44.85	44.85
IBRD V Loan 1-66.64	1.81	10750.83	0.00	10750.83
Total		10750.83	1034.39	11785.22

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

(₹ in lakh)

				(
	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	10750.83	11785.22	11785.22	11785.22
Cumulative Repayments of Loans upto Previous Year	390.26	605.93	1040.81	1480.40
Net Loans Opening	10360.57	11179.29	10744.41	10304.82
Add: Draw(s) during the Year	1034.39	0.00	0.00	0.00
Less: Repayments of Loan during the year	215.67	434.88	439.59	441.95
Net Closing Loan	11179.29	10744.41	10304.82	9862.87
Average Net Loan	10769.93	10961.85	10524.62	10083.85
Rate of Interest on Loan (%)	1.8100%	1.8100%	1.8100%	1.8100%
Interest on Loan	194.94	198.41	190.50	182.52

