CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 255/TT/2015

Coram:

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

Date of Hearing: 22.03.2016
Date of Order : 29.07.2016

In the matter of:

Determination of transmission tariff of Asset-I : 19.50 km Optic fiber under TSTRANSCO sector(Erstwhile APTRANSCO) and Asset-II : 0.697 km Optic fiber under KSEBL Sector under "Fiber Optic Communication System in Lieu of existing Unified Load Despatch & Communication (ULDC) Microwave Links (**Part III**)" in Southern Region for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2014 and Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulation 1999.

And in the matter of:

Power Grid Corporation of India Limited
"Saudamini", Plot No.2,
Sector-29, Gurgaon -122 001

……Petitioner

Vs

1. National Thermal Power Corporation Ltd. (NTPC)
   NTPC Bhawan, Core-7, Scope Complex
   7, Institutional Area, Lodhi Road, New Delhi 110003

2. Nevyeli Lignite Corporation Ltd.
   P.O. Nevyeli – 607801
   Cuddalore Dist., Tamil Nadu

3. Nuclear Power Corporation of India Ltd. (NPCIL)
   Nabhikya Bhawan, Anu-Shakti
   Mumbai – 400094

4. NTPC Tamil Nadu Energy Company Ltd. (NTECL)
   G-Block, 123 & 123A, 12th Street, Anna Nagar (East)
   Chennai – 600102

5. Meenakshi Energy Private Limited
"Meenakshi", Plot 119
Road No. 10, Jubilee Hills
Hyderabad – 500033

6. Simhapuri Energy Limited
6-3-866/2, 3rd Floor, Begumpet
Madhucon Green lands,
Hyderabad – 500016

7. LANCO-Kondapalli Power Pvt. Ltd.
Plot No. 4, Software Units Layout,
Hitech City, Madhapur,
Hyderabad – 5000081

8. Andhra Pradesh Power Co-ordination Committee
APTRANSCO, Vidyut Soudha, Hyderabad 500082

9. Power Company of Karnataka Ltd.
Room No. 503, KPTCL Building, Kaveri Bhavan
Bangalore -560009, Karnataka

10. Kerala State Electricity Board
Vydyuthi Bhavanam, Pattom
Thiruvananthapuram – 695004

11. TANGEDCO
7th Floor, Eastern Wing
144, Anna Salai
Chennai

12. Electricity Department
Government of Puducherry
Puducherry – 605001

13. Electricity Department
Government of Goa
Curti-Ponda, Goa – 403401 **… Respondents**

For petitioner : Shri M. M. Mondal, PGCIL
Shri S. K. Venkatesan, PGCIL
Shri S.S. Raju, PGCIL
Shri Rakesh Prasad, PGCIL
Shri Jasbir Singh, PGCIL
Shri Anshul Garg, PGCIL

For respondents : None

<u>ORDER</u>

The petition has been filed by Power Grid Corporation of India Limited (PGCIL) for determination of tariff of Asset-I : 19.50 km Optic Fibre cable along with associated equipments and Asset-II : 0.697 km Optic Fibre under KSEBL Sector under “Fiber Optic Communication System in Lieu of existing Unified Load Despatch & Communication (ULDC) Microwave Links (Part III)” in Southern Region from COD to 31.3.2019 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2014.

2. The investment approval for the transmission project was accorded by the Board of Directors of the petitioner company vide letter dated 8.2.2011 at an estimated cost of ₹4509 lakh including IDC of ₹264 lakh, based on 3rd Quarter, 2010 price level. As per the investment approval, the transmission asset was scheduled to be commissioned within 30 months, i.e. by 14.8.2013.

3. The broad scope of works is given below:-

a. Installation of OPGW Fibre optic cable on the existing EHV transmission line of POWERGRID and constituents, the estimated length of such cable is approximately 1575 km.

b. Installation of approximately 120 km underground fiber optic to provide last mile connectivity to the control room where transmission line connectivity is not available. It is also envisaged that portion of the network which involves installation of the underground cable would be provided with radio based communication which operates in free band to back up the underground cable link of the network. Five number of radio links are proposed.

c. The terminal equipment for communication based upon Synchronous Digital Hierarchy (SDH) technology shall be installed in the substations of constituents and POWERGRID. The project would also involve installation of primary multiplexers at the new wide band notes. To monitor the Network, Network Management System (NMS) would also be required.

4. The instant petition covers the following assets:-

Srl. No.	Name of Asset
1	Asset I: 19.50 km Optic Fibre cable under TSTRANSCO (erstwhile APTRANSCO)
2	Asset II: 0.697 km Optic Fibre cable under KSEBL sector

5. This order has been issued after considering the petitioner's affidavit dated 21.3.2016 and 4.5.2016.

Brief background

6. As per the directives of Government of India vide order dated 4.7.2008, Power System Operation Corporation Ltd. (POSOCO), a wholly owned subsidiary of Power Grid Corporation of India Limited was created and POSOCO is responsible for system operation of National Load Despatch Centre (NLDC) and Regional Load Despatch Centres (RLDCs). Pursuant to Satnam Singh Committee's report, the assets pertaining to system operations have been transferred to POSOCO for which separate tariff orders had been issued by the Commission.

7. Government of India had also constituted a Task Force to look into the financial aspects for augmentation and up-gradation of the State Load Despatch Centres and issues related to emoluments for the personnel engaged in the system operation. The Task Force made certain recommendations with regard to the ownership of the assets. The petitioner constituted committees at the regional level, subsequent to the Task Force's report, to identify the assets to be transferred to POSOCO. The recommendations of the committees for asset transfer were as follows:-

(A) Assets to be transferred to POSOCO:

(i) EMS/SCADA system (computer system, hardware and software)

(ii) Auxiliary power supply system comprising of uninterrupted power supply, diesel generating set etc.

(iii) Building and civil works.

(B) <u>Assets which will remain with petitioner:</u>

I. <u>Central Portion:</u>

(i) Fibre Optic Cables (overhead and underground)

(ii) Fibre Optic Communication Equipment

(iii) Digital Microwave Communication System (Tower, Antenna, Equipment etc.)

(iv) PABX

(v) Power Line Carrier Communication System;

(vi) Auxiliary power supply system.

II. <u>State Portion: Entire state portion which consists of the following equipment will remain with the petitioner:</u>

(i) EMS/SCADA system

(ii) Fibre Optic System

(iii) Digital Microwave Communication System (Tower, Antenna, Equipment etc.)

(iv) PABX

(v) Power Line Carrier Communication System

(vi) Auxiliary power supply system (part)

8. Thereafter, the petitioner filed a Miscellaneous Petition No. 68/2010 under sub-section (4) of Section 28 of the Act and Regulation 44 "Power to Relax" of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2009 for fixation of tariff norms for recovery of cost for the assets ("Communication system" and "Sub-Load Dispatch Centre system") to be

retained/to be installed by the petitioner after formation of POSOCO for the period 2009-14 block.

9. The Commission in Petition No. 68/2010 vide order dated 8.12.2011, had observed as under:-

> "9...........Since the communication system and SLDC system form part of the assets of the CTU, there is a requirement to specify regulations for determination of tariff of these assets. We direct the staff of the Commission to undertake the exercise separately and include these assets of CTU in the tariff regulations applicable for the next tariff period i.e.2014-19. As regards the tariff of these assets for the period 2009-14, we are not inclined to determine the tariff of these assets by exercising our power to relaxation under Regulation 44 of the 2009 regulations since there is no provision for determination of tariff for the assets covered under the communication system and ULDC system. We are of the view that the tariff of these assets shall be determined under our general power of determination of tariff for inter-State transmission system under section 79(1)(d) of the Act........"
>
> "........It clearly emerges from the above judgment that the Central Commission can specify the terms and conditions of tariff even in the absence of the regulations. Since no regulation was specified for determination of tariff of the communication system and the ULDC system, the Commission determined the tariff of these assets during the period 2004-09 on levelised basis by adopting some of the parameters of 2004 tariff regulations. We have decided to continue with the levelised tariff for the existing assets in the absence of any provision in 2009 regulations regarding determination of tariff of communication system and ULDC system of the petitioner. For the new assets, the tariff will be decided as per the regulations for communication systems to be framed. Accordingly we direct the staff of the Commission to take necessary action to prepare draft regulations for determination of tariff for the communication system and ULDC system of the petitioner."
>
> "21. We have considered the submission of the petitioner and the respondents. We are of the view that replacement of microwave links with fibre optic links should be implemented as agreed by the beneficiaries to ensure safe and reliable operation of the power system. Moreover, the petitioner has submitted that surrender of the microwave frequencies would save substantial cost and the fibre optic system would be beneficial in the long run as the fibre optic communication network is required for implementation of new technologies like Wide Area Measurement System (WAMS), Special Protection Schemes (SPS) etc. in view of fast development and complexity of the power system in the country. As regards the regulatory approval, we are of the view that since the project has been agreed to be implemented by the constituents of each of the regions, regulatory approval is not considered necessary. The petitioner is granted liberty to approach the Commission for determination of tariff for the fibre optic network being installed in lieu of microwave links for each of the region separately. As regards the submission of UPPTCL, it is clarified that if the state portion is not being implemented by it separately as proposed earlier, the same shall be implemented by the petitioner and UPPTCL would be required to share the tariff in proportion to the assets being utilised by it. It is however made clear that the timeline for replacement of the digital microwave by optical fibre should be strictly complied with."

10. However, the provisions for determining tariff of communication system and ULDC system of the petitioner have now been specified in the 2014 Tariff Regulations as an element of a transmission system. Accordingly, the annual transmission charges of the optic fibre have been determined as per the provisions of the 2014 Tariff Regulations in this order.

11. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003. Kerala State Electricity Board Limited (KSEBL), Respondent No. 3 have filed reply vide affidavit dated 29.12.2015. The respondent has raised the issue of capital cost, additional capitalisation and delay in commissioning of the instant assets. The petitioner has filed rejoinder to the reply of KSEBL vide affidavit dated 21.3.2016. The issues raised by KSEBL and the clarification given by the petitioner are addressed in the relevant paragraphs of this order.

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

Date of Commercial operation

13. The petitioner has claimed the date of commercial operation of the instant transmission assets as 1.6.2015 for Asset I and II. The petitioner was directed vide ROP dated 22.3.2016 to submit the certificate issued by RLDC as per Regulation 5 (2) of the 2014 Tariff Regulations in support of commercial operation of the instant assets. In response, the petitioner vide affidavit dated 4.5.2016 has submitted the RLDC certificate issued by SRLDC dated 29.4.2016. As the petitioner has fulfilled the requirements of Regulation 5(2) of the 2014 Tariff Regulations, the COD of the assets is approved as 1.6.2015.

Annual Fixed Charges for the period from COD to 31.3.2016

14. The petitioner has claimed transmission charges for the Assets I and II as given hereunder:-

(₹ in lakh)

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation	3.15	3.89	3.89	3.89
Interest on Loan	3.24	3.66	3.29	2.91
Return on equity	2.93	3.62	3.62	3.62
Interest on Working Capital	0.22	0.26	0.25	0.24
O & M Expenses	0.00	0.00	0.00	0.00
Total	**9.54**	**11.43**	**11.05**	**10.66**

Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation	0.12	0.22	0.22	0.22
Interest on Loan	0.12	0.22	0.20	0.17
Return on equity	0.11	0.21	0.21	0.21
Interest on Working Capital	0.01	0.01	0.01	0.01
O & M Expenses	0.00	0.00	0.00	0.00
Total	0.36	0.66	0.64	0.61

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

(₹ in lakh)

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	0.00	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00	0.00
Receivables	1.91	1.91	1.84	1.78
Total	1.91	1.91	1.84	1.78
Interest	0.21	0.26	0.25	0.24
Rate of Interest	13.50%	13.50%	13.50%	13.50%

Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	0.00	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00	0.00
Receivables	0.07	0.11	0.11	0.10
Total	0.07	0.11	0.11	0.10
Interest	0.01	0.01	0.01	0.01
Rate of Interest	13.50%	13.50%	13.50%	13.50%

Capital cost

16. Clause (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

"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 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."

17. The capital cost has been considered as per Regulation 9(2) of the 2014 Tariff Regulations. The petitioner has submitted Auditor's Certificate dated 14.10.2015 which shows the capital cost claimed by the petitioner as on actual COD and estimated additional capitalization projected to be incurred for Assets I and II The summary of capital cost claimed by the petitioner is given below:-

(₹ in lakh)

Asset	**Approved apportioned cost**	**Cost incurred as on COD**	**Estimated additional capital expenditure**	**Total estimated completion cost**
			2015-16	
Asset I	77.82	57.96	3.53	61.49
Asset II	10.18	0.98	2.56	3.54

18. According to Auditor Certificate, the expenditure up to 31.3.2015 has been verified from the books of accounts of the project and projected expenditure is on the basis of details furnished by the Management.

Cost Over- run.

19. The estimated completion cost of Assets I and II is within the approved apportioned cost and there is no cost over-run.

Time Over- run

20. As per investment approval dated 15.2.2011, the project was scheduled to be commissioned within 30 months from the date of investment approval i.e. 15.2.2011. The scheduled commissioning works out to be 14.8.2013. Assets I and II were commissioned on 1.6.2015. Thus, there is time over-run of 21 months 17 days in the commissioning of the assets. The petitioner was directed to submit, vide RoP dated 22.3.2016, detailed justification for the time over-run.

21. The petitioner has submitted the reasons for time over-run in commissioning of the asset in the petition and vide affidavit dated 4.5.2016. The petitioner has submitted that the reasons for delay in execution of project are due to delay in completion of works under its scope by TSTRANSCO and addition of additional links at a later stage by KSEBL. The petitioner, vide affidavit dated 4.5.2016, has further submitted that Vidyuth Soudha-Chandrayanagutta UGOFC link of 19.5 km of TSTRANSCO has been delayed on account of non-availability of site front, which was to be made available by TSTRANSCO. The agency was to pull underground fibre cable through the trench/duct through the space permitted by the owner and provisioning of the same has caused the delay in completion of the link. As regards to Asset-II, i.e LILO of Kozhikode-Kannur to Vadakara of 0.697 km OPGW link, the

petitioner submitted that the instant link was originally not included in the scope and subsequently the same was taken up at the request of KSEBL. Further, even though the link was completed and TOC was issued w.e.f. 28.2.2014, the same was clubbed for commercial declaration with the above UGOFC link since the link was very small and only installation portion was to be capitalized.

22. KSEBL, in its reply has submitted that the time over-run of 21 months is due to "controllable factors" as per Regulation 12(1). KSEBL submitted that installation of OPGW and communication equipment was scheduled during the period 7.3.2011 to 7.8.2013. The OPGW communication link in 0.697 km LILO of Areakode and Kanhirode to Vadakara was approved by KSEBL on 24.6.2011 and the petitioner was requested to include the work also in the "Microwave replacement project" on 27.7.2011. The petitioner replied vide letter dated 4.8.2011 that since tendering process had already started inclusion of additional equipment was not feasible at that time and could be included as per provision for +/- 30% quantity variation after award of contract. KSEBL informed the petitioner, vide letter dated 11.7.2013, that SDH equipments has been installed and requested to provide connectivity. KSEBL further submitted that the petitioner, vide letter dated 24.01.2014, has intimated that initially the sub-contractor, M/s BGR was reluctant to execute the link quoting that the link is very small and is away from the original route of the project under execution and that M/s BGR agreed to take up the work only after a lot of persuasion by the petitioner. KSEBL has submitted that as requested by the petitioner, on 24.1.2014, KSEBL issued confirmation to carry out the work and M/s BGR completed the work on 21.2.2014. KSEBL has submitted that even though KSEBL requested to add the link after initiation of tendering process, the long delay in execution of the project

occurred due to delay on the part of the petitioner to carry out the work through the sub-contractor, M/s BGR. KSEBL has requested to disallow any increase in cost due to the delay in execution of the work by the contractor as provided under Regulation 12(1) of 2014 Tariff Regulations, 2014.

23. The petitioner in its rejoinder, dated 21.3.2016, to the reply filed by KSEBL has submitted that Asset-II was completed and TOC was issued on 28.2.2014 but since it was a very small link, it was clubbed with Asset-I and put into commercial operation.

24. We have considered the submissions of the petitioner and KSEBL regarding time over-run. As per the petitioner, the time over-run in case of the instant assets is mainly due to non-availability of site front and change in the scope of the work. However, the petitioner has not furnished any documents to substantiate its contention. Further, in order dated 8.12.2011 in Petition No. 68/2010 it was made clear that the timeline for replacement of the digital microwave by optical fibre should be strictly complied with. The relevant extract of the said order is as below:-

> "21. We have considered the submission of the petitioner and the respondents. We are of the view that replacement of microwave links with fibre optic links should be implemented as agreed by the beneficiaries to ensure safe and reliable operation of the power system. Moreover, the petitioner has submitted that surrender of the microwave frequencies would save substantial cost and the fibre optic system would be beneficial in the long run as the fibre optic communication network is required for implementation of new technologies like Wide Area Measurement System (WAMS), Special Protection Schemes (SPS) etc. in view of fast development and complexity of the power system in the country. As regards the regulatory approval, we are of the view that since the project has been agreed to be implemented by the constituents of each of the regions, regulatory approval is not considered necessary. The petitioner is granted liberty to approach the Commission for determination of tariff for the fibre optic network being installed in lieu of microwave links for each of the region separately. As regards the submission of UPPTCL, it is clarified that if the state portion is not being implemented by it separately as proposed earlier, the same shall be implemented by the petitioner and UPPTCL would be required to share the tariff in proportion to the assets being utilised by it. It is however made clear that the timeline for replacement of the digital microwave by optical fibre should be strictly complied with."

25. In view of the above, time over-run of 21 months and 17 days is not condoned.

Treatment of Interest During Construction (IDC)

26. The petitioner claimed IDC of ₹4.94 lakh and ₹0.10 lakh, on accrual basis, for Asset I and Asset II respectively. The petitioner also has submitted a statement showing IDC discharged up to COD for both the assets.

(₹ in lakh)

Asset	IDC claimed on Accrual basis as per CA Certificate dated 14.10.2015	Discharge of IDC as submitted by Petitioner in IDC Statement	
		Up to DOCO	During 2015-16
Asset 1	4.94	3.92	1.02
Asset II	0.10	0.07	0.03

27. The petitioner, vide affidavit dated 7.3.2016, has segregated the claimed IDC as follows:-

(₹ in lakh)

Asset	IDC from the date of infusion of debt fund up to SCOD	IDC from SCOD up to actual COD	Total IDC claimed up to actual COD
	1	2	3=(1+2)
Asset I	4.59	0.35	4.94
Asset II	0.00	0.10	0.10

28. The petitioner, vide affidavit dated 4.5.2015, has further submitted that undischarged IDC has been included as additional capital expenditure during 2015-16 and 2016-17.

29. As per the IDC Statement submitted by the petitioner, it is observed that the loan fund infusion started for both the assets only from 28.2.2014, which falls after the scheduled COD of 14.8.2013. It is clear that the entire IDC claimed pertains to the period of time over-run which was not condoned. Therefore, the IDC claimed by the petitioner for the instant assets is disallowed. Accordingly the amount of ₹4.59

lakh and ₹0.10 lakh for Asset I and Asset II respectively is reduced from the capital cost as on COD.

Treatment of Incidental Expenditure During Construction (IEDC)

30. The petitioner has claimed IEDC of ₹1.63 lakh and ₹0.10 lakh for Assets I and II respectively. The petitioner has segregated the claimed IEDC is as follows:-

(₹In Lakh)

Asset	IEDC up to SCOD (i.e. 14.08.2013)	IEDC from SCOD up to Actual COD (i.e. 01-06-2015)	Total IEDC Claimed up to Actual COD
	1	2	3=(1+2)
Asset I	0.65	0.98	1.63
Asset II	0.00	0.10	0.10

The percentage on 'Hard Cost' as indicated in the Abstract Cost Estimate has been considered as the allowable limit to the IEDC. In the instant petition, 10.75% of the 'Hard Cost' (i.e. ₹5.52 lakh for Assets I and ₹0.08 lakh for Assets II is the maximum limit for allowing IEDC). However, the entire IEDC is shown under the period of time over-run which is not condoned (i.e. the period from SCOD to actual COD). Thus, entire IEDC amounting ₹0.98 lakh and ₹0.10 lakh has been disallowed from the capital cost as on COD of Asset –I and Asset-II respectively.

Initial spares

31. The petitioner has claimed initial spares amounting to ₹0.01 lakh pertaining to communication line for Asset-I which is within the ceiling limit specified in the 2014 Tariff Regulations. Accordingly, it is allowed. The petitioner has not claimed any initial spare for Asset-II.

Capital cost as on COD

32. Details of the capital cost as on COD considered for computing tariff is given below:-

(₹ in lakh)

Asset	Capital cost as on COD claimed by petitioner	IDC disallowed	IEDC disallowed	Capital cost as on COD considered for tariff calculation
1	2	3	4	5 = (2-3-4)
Asset-I	57.96	4.94	0.98	52.04
Asset-II	0.98	0.10	0.10	0.78

Projected additional capital expenditure

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

> " (1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:
> (i) Undischarged liabilities recognised to be payable at a future date;
> (ii) Works deferred for execution;
> (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
> (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
> (v) Change in Law or compliance of any existing law:"
>
> Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.

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

> "cut-off date" means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation".

Accordingly, the "cut-off" date of the instant transmission asset is 31.3.2018

35. Additional capital expenditure has been considered as per Regulation 14(1) of 2014 Tariff Regulations. The petitioner has claimed add-cap for 2015-16 as mentioned at para 17 above. The “cut-off” date for the instant assets is 31.3.2018. The projected additional capital expenditure as claimed by the petitioner has been considered for the purpose of calculation of tariff which is subject to true up.

Capital cost summary from COD to 31.3.2019

36. Based on the above, the summary of capital cost considered for tariff from COD to 31.3.2019 is given below:-

(₹ in lakh)

Particulars	Capital cost allowed as on COD	Add-cap during 2015-16	Total estimated completion cost as on 31.3.2019
Asset-I	52.04	3.53	55.57
Asset-II	0.78	2.56	3.34

Debt- equity ratio

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

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

Provided that:

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

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

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

38. Debt-equity ratio as on actual COD and as on 31.3.2019 considered in the tariff calculation is as follows:-

(₹ in lakh)

	%	As on COD		As on 31.3.2019	
		Asset I	Asset II	Asset I	Asset II
Debt	70.00	36.43	0.55	38.90	2.34
Equity	30.00	15.61	0.23	16.67	1.00
Total	100.00	52.04	0.78	55.57	3.34

Additional capital expenditure has been considered in the debt-equity ratio of 70:30.

Return on Equity (RoE)

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

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

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

Provided that:

(i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

(iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

(iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/

Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

(v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

(vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers."

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

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

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."

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

applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. Accordingly, the ROE allowed is given below:-

(₹ in lakh)

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Opening Equity	15.61	16.67	16.67	16.67
Addition due to Additional Capitalisation	1.06	0.00	0.00	0.00
Closing Equity	16.67	16.67	16.67	16.67
Average Equity	16.14	16.67	16.67	16.67
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	2.64	3.27	3.27	3.27

Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Opening Equity	0.23	1.00	1.00	1.00
Addition due to Additional Capitalisation	0.77	0.00	0.00	0.00
Closing Equity	1.00	1.00	1.00	1.00
Average Equity	0.61	1.00	1.00	1.00
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	0.10	0.20	0.20	0.20

Interest on loan

41. Regulation 26 of the 2014 Tariff Regulations provides as under:-

> "(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.
>
> (2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.
>
> (3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

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

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

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

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

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

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

(i) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per Form 9C given in the petition.

(ii) The normative repayment for the tariff period 2014-19 shall deemed to be equal to the depreciation allowed for that period.

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

43. Detailed calculations in support of the weighted average rates of interest applicable to Asset-I and Asset-II have been given in Annexure-I and II respectively to this order.

44. Based on the above, interest on loan has been calculated as follows:-

(₹ in lakh)

Asset-I				
Particular	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	36.43	38.90	38.90	38.90
Cumulative Repayment up to Previous year	0.00	2.84	6.35	9.87
Net Loan-Opening	36.43	36.06	32.54	29.03
Addition due to Additional Capitalization	2.47	0.00	0.00	0.00
Repayment during the year	2.84	3.52	3.52	3.52
Net Loan-Closing	36.06	32.54	29.03	25.51
Average Loan	36.25	34.30	30.79	27.27
Weighted Avg. Rate of Interest on Loan	9.6500%	9.6500%	9.6500%	9.6500%
Interest	2.91	3.31	2.97	2.63

Asset-II				
Particular	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	0.55	2.34	2.34	2.34
Cumulative Repayment up to Previous year	0.00	0.11	0.32	0.53
Net Loan-Opening	0.55	2.23	2.02	1.81
Addition due to Additional Capitalization	1.79	0.00	0.00	0.00
Repayment during the year	0.11	0.21	0.21	0.21
Net Loan-Closing	2.23	2.02	1.81	1.60
Average Loan	1.39	2.13	1.92	1.70
Weighted Avg. Rate of Interest on Loan	9.6500%	9.6500%	9.6500%	9.6500%
Interest	0.11	0.21	0.18	0.16

Depreciation

45. Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

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

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

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

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-IIto 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."

46. The instant assets are put under commercial operation during 2015-16. Thus, depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-II of 2014 Tariff Regulations.

47. Based on the above, the depreciation has been considered as under :-

(₹ in lakh)

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	52.04	55.57	55.57	55.57
Addition during 2009-14 due to Projected Additional Capitalization	3.53	0.00	0.00	0.00
Closing Gross Block	55.57	55.57	55.57	55.57
Average Gross Block	53.81	55.57	55.57	55.57
Rate of Depreciation	6.3300 %	6.3300 %	6.3300 %	6.3300 %
Depreciable Value	48..42	50.01	50.01	50.01
Remaining Depreciable Value	48.42	45.59	42.07	38.55
Depreciation	2.84	3.52	3.52	3.52

Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	0.78	3.34	3.34	3.34
Addition during 2009-14 due to Projected Additional Capitalisation	2.56	0.00	0.00	0.00
Closing Gross Block	3.34	3.34	3.34	3.34
Average Gross Block	2.06	3.34	3.34	3.34
Rate of Depreciation	6.3300 %	6.3300 %	6.3300 %	6.3300 %

Depreciable Value	1.85	3.01	3.01	3.01
Remaining Depreciable Value	1.85	1.75	1.53	1.32
Depreciation	0.11	0.21	0.21	0.21

Operation & Maintenance Expenses (O&M Expenses)

48. The petitioner is not entitled for O&M Expenses since the instant asset pertains to state portion. The petitioner also has not claimed any O &M Expenses.

Interest on working capital

49. Clause C (i) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify 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"
>
> "3(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;"

50. The petitioner is entitled to claim interest on working capital as per the 2014 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:-

(i) Receivables

Receivables as a component of working capital will be equivalent to two months fixed cost. The petitioner has claimed the receivables on the basis of 2 months annual transmission charges. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

(ii) Rate of interest on working capital

The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points).

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

(₹ in lakh)

Asset-I				
Particulars	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Maintenance Spares	0.00	0.00	0.00	0.00
O & M Expenses	0.00	0.00	0.00	0.00
Receivables	1.72	1.72	1.66	1.61
Total	1.72	1.72	1.66	1.61
Interest	0.19	0.23	0.22	0.22
Rate of Interest	13.50%	13.50%	13.50%	13.50%

Asset-II				
Particulars	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Maintenance Spares	0.00	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00	0.00
Receivables	0.07	0.10	0.10	0.10
Total	0.07	0.10	0.10	0.10
Interest	0.01	0.01	0.01	0.01
Rate of Interest	13.50%	13.50%	13.50%	13.50%

<u>Transmission charges</u>

52. The details of the tariff allowed for Assets I and II are as under:-

(₹ in lakh)

Asset-I				
Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation	2.84	3.52	3.52	3.52
Interest on Loan	2.91	3.31	2.97	2.63
Return on Equity	2.64	3.27	3.27	3.27
Interest on Working Capital	0.19	0.23	0.22	0.22
O & M Expenses	0.00	0.00	0.00	0.00
Total	**8.58**	**10.33**	**9.98**	**9.63**

Asset-II				
Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation	0.11	0.21	0.21	0.21
Interest on Loan	0.11	0.21	0.18	0.16
Return on Equity	0.10	0.20	0.20	0.20
Interest on Working Capital	0.01	0.01	0.01	0.01

O & M Expenses	0.00	0.00	0.00	0.00
Total	**0.33**	**0.63**	**0.61**	**0.58**

Filing fee and the publication expenses

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

Licence fee and RLDC Fees and Charges

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

Service tax

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

Sharing of Transmission Charges

56. The tariff for transmission (communication system) of Electricity (Annual Fixed Cost) as shall be shared as per Regulation 43 of 2014 Tariff Regulations. These charges shall be recovered on monthly basis and the billing collection and disbursement of transmission charges shall be governed by provision of Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 as amended time to time.

57. This order disposes of Petition No. 255/TT/2015.

(Dr. M.K. Iyer)	(A.S. Bakshi)	(A.K. Singhal)	(Gireesh B. Pradhan)
Member	**Member**	**Member**	**Chairperson**

Annexure -I

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN (Asset-I)

(₹ in lakh)

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	**BOND XLV**				
	Gross loan opening	**40.57**	**40.57**	**40.57**	**40.57**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**	**3.38**
	Net Loan-Opening	40.57	40.57	40.57	37.19
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3.38	3.38
	Net Loan-Closing	40.57	40.57	37.19	33.81
	Average Loan	40.57	40.57	38.88	35.50
	Rate of Interest	**9.65%**	**9.65%**	**9.65%**	**9.65%**
	Interest	3.92	3.92	3.75	3.43
	Rep Schedule	12 Annual Instalment from 28.02.2018			
	Total Loan				
	Gross loan opening	**40.57**	**40.57**	**40.57**	**40.57**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**	**3.38**
	Net Loan-Opening	**40.57**	**40.57**	**40.57**	**37.19**
	Additions during the year	**0.00**	**0.00**	**0.00**	**0.00**
	Repayment during the year	**0.00**	**0.00**	**3.38**	**3.38**
	Net Loan-Closing	**40.57**	**40.57**	**37.19**	**33.81**
	Average Loan	**40.57**	**40.57**	**38.88**	**35.50**
	Rate of Interest	**9.6500%**	**9.6500%**	**9.6500%**	**9.6500%**
	Interest	3.92	3.92	3.75	3.43

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(₹ in lakh)

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	**BOND XLV**				
	Gross loan opening	**0.69**	**0.69**	**0.69**	**0.69**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**	**0.06**
	Net Loan-Opening	0.69	0.69	0.69	0.63
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.06	0.06
	Net Loan-Closing	0.69	0.69	0.63	0.58
	Average Loan	0.69	0.69	0.66	0.60
	Rate of Interest	**9.65%**	**9.65%**	**9.65%**	**9.65%**
	Interest	0.07	0.07	0.06	0.06
	Rep Schedule	12 Annual Installment from 28.02.2018			
	Total Loan				
	Gross loan opening	**0.69**	**0.69**	**0.69**	**0.69**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**	**0.06**
	Net Loan-Opening	**0.69**	**0.69**	**0.69**	**0.63**
	Additions during the year	**0.00**	**0.00**	**0.00**	**0.00**
	Repayment during the year	**0.00**	**0.00**	**0.06**	**0.06**
	Net Loan-Closing	**0.69**	**0.69**	**0.63**	**0.58**
	Average Loan	**0.69**	**0.69**	**0.66**	**0.60**
	Rate of Interest	**9.6500%**	**9.6500%**	**9.6500%**	**9.6500%**
	Interest	0.07	0.07	0.06	0.06