CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 215/TT/2016

Coram:
Shri P.K. Pujari, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member

Date of Order: 9th of July, 2018

In the matter of:

Determination of transmission tariff for Asset-1:2 Nos. 400 kV Line bays at Narendra (New), 2 Nos. 400 kV line bays at Madhugiri (Tumkur), 2X63 MVAR (fixed) line reactors (with 600 ohm NGRs) at Narendra (New) and 2X63MVAR (fixed) line reactors (with 600 ohm NGRs) at Madhugiri (Tumkur) for Narendra (New) - Madhugiri (Tumkur) 765 kV D/C line (initially charged at 400 kV), Asset-2: 2 Nos. 400 kV line bays at Madhugiri (Tumkur) for Madhugiri (Tumkur) -Bidadi 400 kV D/C (Quad) line and Asset-3: 2 Nos. 400 kV line bays at Bidadi for Madhugiri (Tumkur)-Bidadi 400KV D/C (Quad) line under "Sub-station extension works associated with transmission system required for evacuation of power from Kudgi TPS (3 X 800 MW in Phase -I) of NTPC Limited" in Southern Region under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And
In the matter of:

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

Vs.

1. Karnataka Power Transmission Corporation Ltd. (KPTCL),
KaveriBhawan, Bangalore-560009

2. Transmission Corporation of Andhra Pradesh Ltd. (APTRANSCO),
VidyutSoudha, Hyderabad-500 082

3. Kerala State Electricity Board (KSEB),
VaidyuthiBhavanam, Pattom, Thiruvananthapuram-695004

4. Tamil Nadu Generation and Distribution Corporation Limited,
NPKRR Maaligai, 800, Anna Salai,
Chennai-600002

5. Electricity Department, Government of Goa,
VidyutiBhawan, Panji, Goa 403001

6. Electricity Department, Government of Pondicherry,
Pondicherry-605001

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

8. Southern Power Distribution Company of Andhra Pradesh Ltd. (APSPDCL),
SrinivasasaKalyanaMandapam Backside,
Tiruchanoor Road, KesavayanaGunta,
Tirupati-517501

9. Central Power Distribution Company of Andhra Pradesh Ltd. (APCPDCL),
Corporate Office, Mint Compound,
Hyderabad-500063

10. Northern Power Distribution Company of Andhra Pradesh Ltd. (APNPDCL),
Opp. NIT Petrol Pump, Chaitanyapuri, Kazipet,
Warangal-506004

11. Bangalore Electricity Supply Company Ltd. (BESCOM),
Corporate Office, K. R. Circle,
Bangalore-560001

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

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

14. MESCOM Corporate Office, Paradigm Plaza,
AB Shetty Circle, Mangalore-575001

15. Chamundeswari Electricity Supply Corporation Ltd. (CESC),
927, L J Avenue, Ground Floor, New KantharajUrs Road,
Saraswatipuram, Mysore-570009

16. Transmission Corporation of Telangana Ltd.,
VidhyutSudha, Khairatabad Hyderabad 500082 **………Respondents**

Parties Present:

For Petitioner: Shri Vivek Kumar Singh, PGCIL
Shri Rakesh Prasad, PGCIL
Shri S.K. Venkatesan, PGCIL
Shri S.S. Raju, PGCIL

Shri V.P. Rastogi, PGCIL

For Respondents: ShriS. Vallinayagam, Advocate for TANGEDCO

ORDER

The Petitioner, Power Grid Corporation of India Limited (PGCIL), has filed the present petition for seeking approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as the '2014 Tariff Regulations') for determination of transmission tariff from COD to 31.3.2019 for Asset-I:2 Nos. 400 kV Line bays at Narendra (New), 2 Nos. 400 kV line bays at Madhugiri (Tumkur), 2X63 MVAR (fixed) line reactors (with 600 ohm NGRs) at Narendra (New) and 2X63MVAR (fixed) line reactors (with 600 ohm NGRs) at Madhugiri (Tumkur) for Narendra (New)-Madhugiri (Tumkur) 765 kV D/C line (initially charged at 400 kV), Asset-2: 2 Nos. 400 kV line bays at Madhugiri (Tumkur) for Madhugiri (Tumkur) - Bidadi 400 kV D/C (Quad) line, and Asset-3: 2 Nos. 400 kV line bays at Bidadi for Madhugiri (Tumkur)-Bidadi 400KV D/C (Quad) line (hereinafter referred to as "transmission assets") under "Sub-station extension works associated with transmission system required for evacuation of power from Kudgi TPS (3 X 800 MW in Phase -I) of NTPC Limited (hereinafter referred to as "transmission project") for the tariff period 2014-19 in Southern Region under 2014 Tariff Regulations.

2. The Investment Approval and expenditure sanction for the transmission project was accorded by the Board of Directors of the Petitioner company on 5.2.2014 for ₹167.40 crore including IDC of ₹8.06 crore based on December, 2013 price level. Subsequently, the Petitioner, vide affidavit dated 31.3.2017, has submitted the Revised Cost Estimate (RCE) of the project as ₹157.27 crore including an IDC of ₹7.51 crore based on October,

2016 price level. The Project was scheduled to be commissioned within 22 months from the date of Investment Approval i.e. 5.2.2014. Therefore, the scheduled date of commissioning of the transmission system was 4.12.2015.

3. The Transmission System for evacuation of power from Kudgi TPS of NTPC was discussed and agreed in the 33rd SCM of Southern Region Constituents held on 20.10.2011. Subsequently, in the Empowered Committee on Transmission meeting held on 15.6.2012 at CERC, New Delhi, the implementation of the transmission lines through Tariff Based Competitive Bidding was recommended. However, the same Empowered Committee on Transmission recommended that the present scope of the scheme (i.e. associated bays) has to be implemented by PGCIL.

4. The scope of work covered under the transmission system is broadly as under:-

Sub Station

(a) Extension of Narendra (New) substation (GIS) at Kudgi

This substation is under construction by PGCIL and shall be extended to accommodate following under this project.

(i) 4 Nos. 400 kV line bays at Narendra (New) for Kudgi TPS- Narendra (New) 400 kV 2XD/c Quad lines.

(ii) 2 Nos. 400 kV line bays at Narendra (New) for Narendra (New)-Madhugiri 765 kV D/C line initially charged at 400 kV.

(b) Extension of Madhugiri sub-station (AIS)

This substation is under construction by PGCIL and shall be extended to accommodate following under this project.

(i) 2 Nos. 400 kV line bays at Madhugiri for Narendra (New)-Madhugiri 765 kV D/C line initially charged at 400 kV.

(ii) 2 Nos. 400 kV line bays at Madhugiri for Madhugiri- Bidadi 400 kV D/c (Quad) line

(c) Extension of Bidadi substation (GIS)

This sub-station is under operation by PGCIL and shall be extended to accommodate the following under this project.

(i) 2 Nos. 400 kV line bays at Bidadi for Madhugiri- Bidadi 400 kV D/C (Quad) line.

Reactive Compensation

Line Reactors (400 kV)

- 2X63MVAR (fixed) line reactors (with 600ohm NGRs) at Narendra (New) for Narendra (New) – Madhugiri 765 kV D/C line initially charged at 400 kV.
- 2X63MVAR (fixed) line reactors (with 600ohm NGRs) at Madhugiri for Narendra (New) – Madhugiri 765 kV D/c line initially charged at 400kV

5. The details of the assets covered in the instant petition are as under:-

Name of Asset	COD
Asset-1: 2 Nos. 400 kV line bays at Narendra (New), 2 Nos. 400 kV line bays at Madhugiri (Tumkur), 2X63 MVAR (fixed) line reactors (with 600ohm NGRs) at Narendra (New) & 2X63MVAR (fixed) line reactors (with 600ohm NGRs) at Madhugiri (Tumkur) for Narendra (New) - Madhugiri (Tumkur) 765 kV D/C line (initially charged at 400 kV)	24.9.2016
Asset-2: 2 Nos. 400 kV line bays at Madhugiri (Tumkur) for Madhugiri (Tumkur) -Bidadi 400 kV D/C (Quad) line; and	25.8.2016
Asset-3: 2 Nos. 400 kV line bays at Bidadi for Madhugiri (Tumkur)-Bidadi 400 kV D/C (Quad) line	3.4.2017

6. The balance scope of work as per investment approval covered in other petition is as under:-

Scope as approved	Actual COD	Petition No.	Order date
4 Nos. 400 kV line bays at Narendra (New) for Kudgi TPS-Narendra (New) 400 kV 2XD/C Quad lines	11.12.2015	201/TT/2015	29.7.2016

7. Annual Fixed Charges was granted for the instant transmissionassets vide order dated 6.3.2017 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations, for inclusion in the PoC charges.

8. The Petitioner has claimed the following transmission charges for the transmission assets:-

(₹ in lakh)

Particulars	Asset-1		
	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	158.07	332.10	346.23
Interest on Loan	168.80	335.08	322.55
Return on Equity	175.55	368.88	384.61
Interest on Working Capital	17.44	35.49	36.30
O & M Expenses	124.03	246.70	254.88
Total	**643.89**	**1318.25**	**1344.57**

(₹ in lakh)

	Asset- 2			Asset- 3	
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**	**2017-18**	**2018-19**
Depreciation	13.87	30.57	36.55	115.31	127.34
Interest on Loan	14.48	30.34	34.05	124.18	127.33
Return on Equity	15.31	33.79	40.45	128.47	141.88
Interest on Working Capital	5.01	9.02	9.61	13.94	14.79
O & M Expenses	77.52	133.02	137.42	113.05	117.46
Total	**126.19**	**236.74**	**258.08**	**494.95**	**528.80**

9. The details of the 'Interest on Working Capital' claimed by the Petitioner for the transmission assets are as under:-

(₹ in lakh)

Asset-1			
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Maintenance Spares	35.82	37.01	38.23
O & M expenses	19.90	20.56	21.24
Receivables	206.59	219.71	224.10
Total	**262.31**	**277.28**	**283.57**
Interest Rate	17.44	35.49	36.30
Rate of Interest	12.80%	12.80%	12.80%

(₹ in lakh)

	Asset- 2			Asset- 3	
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**	**2017-18**	**2018-19**
Maintenance Spares	19.31	19.95	20.61	17.05	17.62
O & M expenses	10.73	11.09	11.45	9.47	9.79

Receivables	34.93	39.46	43.01	82.95	88.13
Total	**64.97**	**70.50**	**75.07**	**109.47**	**115.54**
Interest Rate	5.01	9.02	9.61	13.94	14.79
Rate of Interest	12.80%	12.80%	12.80%	12.80%	12.80%

10. The Petitioner has served the copy of the petition on the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 (hereinafter referred to as "the Act"). No comments have been received from the general public in response to the notices published by the Petitioner under Section 64 of the Act. Tamil Nadu Generation and Distribution Corporation Ltd., (hereinafter referred to as "TANGEDCO") has filed reply vide affidavit dated 14.12.2016. The Petitioner has filed its rejoinder to the reply vide affidavit dated 5.1.2017. The submissions made by TANGEDCO and the Petitioner are addressed in the relevant paragraphs of this order.

Date of Commercial Operation ("COD")

11. The Petitioner has claimed the date of the commercial operation of the transmission assets as under:-

S.No.	Assets	COD
1	Asset-I	24.9.2016 (Actual)
2	Asset-II	25.8.2016 (Actual)
3	Asset-III	3.4.2017 (Actual)

12. The Petitioner, vide Record of Proceedings for the hearing dated 20.6.2017,was directed to submit the detailed write-up and copy of system studies carried out and also to state whether the interim arrangement has been removed. In response, the Petitioner vide its affidavit dated 11.8.2017 has submitted that the following transmission lines, associated with NTPC Kudgi generation project, were implemented through TBCB by KTL:

“(i) Narendra (New)-Madhugiri (Tumkur) 765 kV D/Cline(charged at 400 kV)

(ii) Madhugiri (Tumkur)-Bidadi 400 kV Quad D/C line.

Bays for termination of the above lines were to be implemented by PGCIL. The associated 400kV bays at Narendra (New) and Madhugiri (Tumkur) for Narendra (New)-Madhugiri (Tumkur) 765kV D/c line (initially charged at 400 kV) were commissioned matching with the transmission line.

With regard to commissioning of Madhugiri (Tumkur)–Bidadi 400kV Quad D/C line, there was mismatch in the commissioning of 400kV bays as compared to the transmission line. Therefore, the following temporary arrangement was proposed for charging and utilization of this line:

(a) To inter-connect one circuit of 400 kV D/c Madhugiri (Tumkur)-Bidadi Quad line with one circuit of existing 400 kV D/c Bidadi - Nelamangala line and the remaining circuit from Madhugiri (Tumkur) would be terminated at Bidadi GIS utilizing the vacated bay.

(b) For termination at Madhugiri (Tumkur), available bays of 400 kV D/c Madhugiri (Tumkur) – Yelahanka line would be utilized.

It was envisaged that this arrangement would provide alternate path and relieve loading on lines viz. 400 kV Gooty-Somanhally, 400 kV Gooty – Nelamangala, 400 kV Hiriyur-Nelamangala and 400 kV Kolar- Hoody lines. Subsequently, detailed studies were carried out and as per studies, under base case the loading on Gooty-Nelamangala, Gooty-Somanhally and Hiriyur-Nelamangala lines per circuit was 620MW, 542MW and 472MW respectively.

With the proposed temporary rearrangement, the loading on Gooty-, Gooty-Somanhally and Hiriyur-Nelamangala lines per circuit reduces to 438 MW, 413 MW and 384 MW.

Considering the readiness of this line, a meeting was held in CEA on 2.8.2016 to discuss above temporary arrangement. During the meeting, POSOCO opined that the Gooty-Madhugiri(Tumkur)-Bidadi 400kV DC line is parallel path to Gooty-Somanhally and Gooty-Nelamangala 400 kV corridor. There is reduction in flow on Gooty-Somanhally, Gooty-Nelamangala and Hiriyur-Nelamangala lines with the above temporary arrangement. POSOCO further opined that implementation of this arrangement may be having advantage compared to current scenario.

After deliberations, proposed temporary arrangement was agreed in the minutes of meeting held at CEA on 2.8.2016 and the same was deliberated and agreed in the 40th Standing Committee on Power System Planning in Southern Region (SCPSPSR) held on 19.11.2016. The temporary arrangement was restored in April. 2017.”

13. We have considered the submissions of the Petitioner. According to the Petitioner, date of commercial operation of Assets-I, II andIII was as 24.9.2016, 25.8.2016 and 3.4.2017, respectively. In support of commercial operationof the assets covered in the instant petition, the Petitioner has placed on record the RLDC Certificates dated 15.12.2016, 19.10.2016 and 25.4.2017 for the Asset-I, II and III issued by SRLDC and has confirmed that the assets are put to use. The Petitioner has submitted the CEA Certificates for Assets-I, II and III dated 2.9.2016, 4.11.2015 and 29.3.2017 under Regulation 43 of the Central Electricity Authority (Measures Related to Safety and Electricity Supply) Regulations, 2010. The Petitioner, vide affidavit dated 23.10.2017 has enclosed CMD certificate as required under Regulation 6.3 (A) (4) of the Grid Code.

14. Taking into considerations the submissions made by the Petitioner, SRLDC certificates and CEA certificates submitted by the Petitioner in support of trial operation, dates of commercial operation of the Assets-I, II and III are approved as 24.9.2016, 25.8.2016 and 3.4.2017 respectively.

<u>Capital Cost:</u>

15. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as under:

> **"**(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."

16. The Petitioner, vide affidavits dated 19.10.2016 and 12.6.2017 and Auditor's Certificate dated 29.9.2016 and 29.5.2017 has claimed the tariff based on actual/estimated expenditure to be incurred upto COD and additional capitalization projected to be incurred from COD to 31.3.2019 in respect of the assets covered in present petition. The Petitioner has submitted the details of capital cost as under:

(₹ in lakh)

Name of the element	Apportioned Approved Cost as per FR	Apportioned Approved Cost as per RCE	Exp. Upto COD	Projectedexpenditure in 2016-17	Projected expenditure in 2017-18	Projected expenditure in 2018-19	Estimated completion Cost	Cost Overrun as comp to FR cost
Asset-I	6589.18	7161.28	5517.22	571.64	398.80	99.85	6587.51	No
Asset-II	1126.57	895.43	361.64	148.97	130.35	93.10	734.06	No
Asset-III	1863.75	2495.54	2079.95	0	273.29	117.12	2470.36	Yes
Total	9579.50	10552.25	7958.81	720.61	802.44	310.07	9791.93	Yes

17. Against the total apportioned approved cost of ₹65.89 crore and ₹11.26 crore, the estimated completion cost as per the Auditor's Certificate is ₹65.87 crore and ₹7.34 crore with respect to Asset-I and Asset-II respectively. Therefore, there is no cost over-run in comparison to FR cost. However, against the total apportioned approved cost of ₹18.64 crore, the estimated completion cost is ₹24.70 crore with respect to Asset-III. Therefore, there is cost over-run of ₹6.06 crore in comparison to FR cost.

18. TANGEDCO has submitted that with respect to Asset-II, there is cost under-run of ₹3.9 crore i.e. 34.8% variation. However, there is cost over-run of 25.75% with respect to Asset-III and there is no deviation with respect to Asset-I.According to TANGEDCO, the Petitioner has not followed prudent methods in cost estimations since all the three assets are identical in nature and executed in the same period. TANGEDCO has also submitted that the Petitioner has not followed the IEEMA price variation formulae for allowing the price escalation.

19. The Petitioner was directed to submit the reasons for cost under-run in respect of Asset-II and cost over-run with respect to Asset-III. The Petitioner vide affidavit dated 11.8.2017 has submitted the item-wise variation as under:-

Asset-II: 2 Nos. 400 kV line bays at Madhugiri (Tumkur) for Madhugiri (Tumkur)-Bidadi 400 kV D/C (Quad) line.

(₹ in lakh)

S.No.	Description	FR Cost (a)	Completion Cost (b)	Variation (a-b)
		(as per Form-5 submitted in the Petition)		
1	Total Substation Equipment cost	720.10	716.01	4.09
2	Overheads (IEDC)	295.01	7.28	287.73
3	IDC	111.46	10.78	100.68
	TOTAL	**1126.57**	**734.07**	**392.50**

20. The Petitioner has submitted that the cost under-run is mainly due to change in overheads like, IEDC and IDC which has been considered as per actual.

Asset-III: 2 Nos. 400 kV line bays at Bidadi for Madhugiri (Tumkur) - Bidadi 400 kV D/C (Quad) line.

(₹ in lakh)

S. No.	Description	FR Cost (a)	Completion Cost (b)	Variation (a-b)
		(as per Form-5 submitted in petition)		
1	Total Substation Equipment cost	1504.22	2177.71	-673.49
2	Overheads (IEDC)	254.08	86.77	167.31
3	IDC	105.45	205.88	-100.43
	TOTAL	**1863.75**	**2470.30**	**-606.61**

21. The Petitioner has submitted that the cost estimate of the project is on the basis of December, 2013 price level.The Petitioner has further submitted that the cost variation of supply period (2015) is mainly attributable to inflationary trends prevalent during the execution of project and also market forces prevailing at the time of bidding process of various packages and the price variation can be bifurcated into two parts i.e., one from FR to award of various contract and other from award of contract to final execution. With regard to price variation from FR to award, the Petitioner has submitted that the contracts for various packages under this project were awarded to the lowest evaluated and responsive bidder, on the basis of Open Competitive Bidding. Therefore, the award prices represent the lowest prices available at the time of bidding of various packages, thus capturing the price level at the bidding stage. The price variation from award to final execution is mainly on the basis of PV based on indices as per provision of respective contracts. According to the Petitioner, there is variation of around ₹2.97 crore (included in total sub-station equipment cost in above table) mainly on accounts of actual taxes and duties, octoroi, custom duty, excise duty, etc. encountered during the transportation of the materials and actual custom duty and taxes paid. The Petitioner has further submitted that there is technological difference between both the sub-station i.e. Asset-II is of Conventional/Air Insulated substation (AIS) and Asset-III is of Gas Insulated sub-station (GIS).

22. We have considered the submissions made by the Petitioner and TANGEDCO. The Petitioner has submitted that the cost over-run is mainly due to change in price levels of awarded packages through competitive bidding. The Petitioner has contended that there is variation of around ₹2.97 crore on account of actual taxes and duties during the transportation of materials. The estimated completion cost is ₹9664.29 lakh which is lower than the total apportioned approved cost of ₹10552.25 lakh. Therefore,there is no cost over-run. Since, the cost variationis not attributable to the Petitioner, it has been considered for the purpose of tariff. Therefore, the capital cost claimed as on COD isas under:

(₹ in lakh)

Name of the elements	FR Apportioned Approved Cost	Cost as per RCE (apportioned)	Expenditure up to COD
Asset-I	6589.18	7161.28	5517.22
Asset-II	1126.57	895.43	361.64
Asset-III	1863.75	2495.54	2079.95

<u>Time Over-run</u>

23. As per the original Investment Approval, the project was scheduled to be commissioned within 22 months from the date of Investment Approval (i.e. 5.2.2014). Accordingly, the schedule date of completion of the transmission assets works out to 4.12.2015. The detail of the assets commissioned and delay in commissioning thereof, in the instant petition are as under:

Assets	Scheduled Date of Completion (SCOD) as per IA	Actual/Anticipated DOCO	Delay
Asset-1	4.12.2015	24.9.2016(actual)	9 months 21 days
Asset-2		25.8.2016(actual)	8 months 22 days
Asset-3		3.4.2017(actual)	16 months

24. With regard to delay in completion of all the three assets, TANGEDCO has submitted that the Commission in Petition Nos. 236/MP/2015 and 201/TT/2015 had directed NTPC Limited and PGCIL respectively, to share the transmission charges in 50:50 ratio as the delay was attributed to them. TANGEDCO has contended that if the delay is attributed to Kudgi Transmission Limited (hereinafter referred to as "KTL"), who is executing the transmission lines, then the transmission charges for the delayed period should be recovered from KTL and should not be passed on to the beneficiaries.

25. The Petitioner has submitted that there is a delay of about 9 to 16 months in COD of the Assets-I, II and III. The Petitioner has submitted that based on the deliberation in the 29th Empowered Committee (EC) Meeting held on 15.6.2010 and in order to avoid the idling of resources, the Petitioner has planned to implement the bays i.e., Asset-I matching with COD of Narendra (New)- Madhugiri (Tumkur) 765 kV D/C line (initially charged at 400 kV) of KTL. The Petitioner has submitted that the status of the transmission line was deliberated in 29th SRPC Meeting held on 5.3.2016 wherein it was informed that the transmission line was anticipated to be put into commercial operationby August, 2016. However, Narendra (New)-Madhugiri (Tumkur) 765 kV D/C line (initially charged at 400 kV) of KTL is now put under commercial operation w.e.f. 24.9.2016 and accordingly, the implementation of bays had been deferred and is now put under commercial operation from 24.9.2016 matching with the transmission line. Similarly, with regard to Asset-II, the Petitioner has submitted that the Commissioning of Asset-II was planned to match the commissioning of Madhugiri (Tumkur)-Bidadi 400 kV D/C (Quad) line of KTL. Madhugiri (Tumkur)-Bidadi 400 kV D/C (Quad) line has been put into commercial operation w.e.f. 25.8.2016 and accordingly, bays at Madhugiri for the instant line has been charged and put under commercial operation from 25.8.2016. The Petitioner has submitted that award for bays at Bidadi were placed with completion

schedule as June, 2016. However, bays at Bidadi could not be completed and PGCIL has provided a temporary arrangement for facilitating the charging of Madhugiri (Tumkur)-Bidadi 400 KV D/C (Quad) line of KTLfrom 25.8.2016. In this regard, the Petitioner has placed on record the minutes of meeting on "Temporary arrangement at Bidadi GIS for connecting one circuit of 400 kV Tumkur (Vasanthanarasapura)–Bidadi Quad line with one circuit of 400 kV DC Bidadi–Neelamangala Twin line" held on 2.8.2016 in CEA. The bays at Bidadi were expected to be commissioned by 30.9.2016 against which the bays have been commissioned by 3.4.2017. The Petitioner has further submitted that although there is a delay w.r.t. IA in commissioning of Asset-III, all efforts have been made to match the commissioning of bays with the transmission line and generation project.

26. During the course of hearing, learned counsel for TANGEDCO submitted that there is time over-run in case of all the three assets. The time over-run in case of Assets-I and II is attributable to the phasing of commissioning of these assets to match with the commissioning of the Narendra-Madhugiri 765 kV D/C line and Madhugiri-Bidadi 400 kV D/C line executed by KTL and in case of Asset-III, the delay is attributable to the Petitioner.

27. We have considered the submissions made by the Petitioner and TANGEDCO. With regard to Assets-I and II, the Petitioner has submitted that the assets are delayed due to matching with the commissioning of the Narendra-Madhugiri 765 kV D/C line and Madhugiri-Bidadi 400 kV D/C line executed by KTL. However, the Petitioner has not submitted the documentary evidence in support of its readiness on SCoD i.e. CEA certificate, etc. The Petitioner vide Provisional Tariff order dated 6.3.2017 was directed to submit the valid documentary evidence. However, the Petitioner did not submit any documentary evidence. Therefore, the time over-run of 9 months 21 days and 8 months

22 days for Assets-I and II respectively is not condoned. With regard to Asset-III, the Petitioner has submitted that the Asset-III was delayed due to matching with the commissioning of bays with the transmission line and generation project. Since, the bays at Bidadi could not be completed, PGCIL provided a temporary arrangement for facilitating the charging of Madhugiri (Tumkur)-Bidadi 400 kV D/C (Quad) line of KTL from 25.8.2016. Therefore, the reasons given by the Petitioner for delay of bays at Bidadi are not clear. The Petitioner has not clarified as to with which generator or with which line PGCIL was trying to match the commissioning schedule. It is noted that PGCIL has made interim arrangement due to non-commissioning of its bays at Bidadi. The bays have been commissioned on 3.4.2017 and subsequently the temporary arrangement was restored in April, 2017. Therefore, the timedelay is attributable to the Petitioner. Accordingly, the time over-run of 16 months is not condoned. The time over-run is condoned as under:-

Asset	**Time Delay**	**Time delay condoned**	**Time delay not condoned**
Asset-I	9 months 21 days	-	9 months 21 days
Asset-II	8 months 22 days	-	8 months 22 days
Asset-III	16 months	-	16 months

<u>Treatment of Interest During Construction(IDC) and Incidental Expenditure during Construction (IEDC)</u>

28. Regulation 11 of the 2014 Tariff Regulations provides as under:

"**11. Interest during construction (IDC), Incidental Expenditure during Construction (IEDC)**

(A) Interest during Construction (IDC):

(1) Interest during construction shall be computed corresponding to the loan from the date of infusion of debt fund, and after taking into account the prudent phasing of funds upto SCOD.

(2) In case of additional costs on account of IDC due to delay in achieving the SCOD, the generating company or the transmission licensee as the case may be, shall be required to furnish detailed justifications with supporting documents for such delay including prudent phasing of funds: Provided that if the delay is not attributable to the generating company or

the transmission licensee as the case may be, and is due to uncontrollable factors as specified in Regulation 12 of these regulations, IDC may be allowed after due prudence check.

Provided further that only IDC on actual loan may be allowed beyond the SCOD to the extent, the delay is found beyond the control of generating company or the transmission licensee, as the case may be, after due prudence and taking into account prudent phasing of funds.

(B) Incidental Expenditure during Construction (IEDC):

(1) Incidental expenditure during construction shall be computed from the zero date and after taking into account pre-operative expenses upto SCOD:

Provided that any revenue earned during construction period up to SCOD on account of interest on deposits or advances, or any other receipts may be taken into account for reduction in incidental expenditure during construction.

(2) In case of additional costs on account of IEDC due to delay in achieving the SCOD, the generating company or the transmission licensee as the case may be, shall be required to furnish detailed justification with supporting documents for such delay including the details of incidental expenditure during the period of delay and liquidated damages recovered or recoverable corresponding to the delay:

Provided that if the delay is not attributable to the generating company or the transmission licensee, as the case may be, and is due to uncontrollable factors as specified in regulation 12, IEDC may be allowed after due prudence check:

Provided further that where the delay is attributable to an agency or contractor or supplier engaged by the generating company or the transmission licensee, the liquidated damages recovered from such agency or contractor or supplier shall be taken into account for computation of capital cost.

(3) In case the time over-run beyond SCOD is not admissible after due prudence, the increase of capital cost on account of cost variation corresponding to the period of time over run may be excluded from capitalization irrespective of price variation provisions in the contracts with supplier or contractor of the generating company or the transmission licensee."

29. The Petitioner has claimed the IDC and IEDC as under:

(₹ in lakh)

Particular	IDC	IEDC
Asset-I	247.26	150.26
Asset-II	10.78	7.28
Asset-III	205.88	86.77

30. The IDC has been worked out considering the information submitted by the Petitioner. We have perused the loan details submitted by the Petitioner in Form-9C for

period 2014-19 and date of drawl submitted in IDC statement for the purpose of calculating IDC for both the assets.

31. The IEDC as per the abstract cost estimate is 10.75% of the estimated hard cost. Considering the IEDC percentage on Hard Cost as indicated in the Abstract Cost Estimate and by not condoning the time over-run, IEDC for the purpose of tariff has been worked out on pro-rata basis. For the purpose of computing the tariff, the details of IDC and IEDC allowed as on COD are as under:

(₹ in lakh)

Particulars	Capital cost claimed by the Petitioner	IDC allowed up to SCOD on cash basis after considering timeover-run	IEDC allowed on cash basis after considering time over-run.	Capital cost allowed as on COD
Asset-1	5119.70	81.49	104.18	5305.37
Asset-2	343.58	2.90	5.21	351.69
Asset-3	1787.30	53.94	50.20	1891.43

Initial Spares

32. Regulation 13 of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system as under:

> **“13.Initial spares**
>
> Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:
>
> (d) Transmission system
>
> (i) Transmission line - 1.00%
>
> (ii) Transmission Sub-station (Green Field) - 4.00%
>
> (iii) Transmission Sub-station (Brown Field) - 6.00%
>
> (iv) Series Compensation devices and HVDC Station - 4.00%
>
> (v) Gas Insulated Sub-station (GIS)-5.00%

(vi) Communication system-3.5%

Provided that:

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) where the generating station has any transmission equipment forming part of the generation project, the ceiling norm for initial spares for such equipments shall be as per the ceiling norms specified for transmission system under these regulations:

(iii) once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the breakup of head wise IDC & IEDC in its tariff application."

33. The Petitioner has claimed initial spares for Asset-I and Asset-III amounting to ₹33.74 lakh and ₹17.11 lakh respectively. Initial spares claimed by the Petitioner are within the ceiling limit as specified in the 2014 Tariff Regulations and thus have been allowed and considered for the purpose of tariff in this order. The Petitioner has not claimed initial spares for Asset-II.

Capital Cost allowed as on "COD"

34. Based on the above, the capital cost allowed as on COD under Regulation 9 (2) of the 2014 Tariff Regulations after making the necessary adjustment in respect of capital expenditure of IDC and IEDC is as under:

Particulars	Capital cost allowed as on COD after adjusting IDC and IEDC and Initial spares
Asset-I	5305.37
Asset-II	351.69
Asset-III	1891.43

Additional Capital Expenditure

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

> "(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 thedate 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 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."

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

> "cut-off date" means 31stMarch 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 31stMarch 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 cutoff date for reasons beyond the control of the project developer;"

37. The cut-off date in the case of Assets-I and II is 31.3.2019 and Asset-III is 31.3.2018.

38. The Petitioner has submitted the details of additional capital expenditure as under:

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19	Total
Asset-I	571.64	398.80	99.85	1070.29
Asset-II	148.97	130.35	93.10	372.42
Asset-III	0.00	273.29	117.12	390.41

39. The additional capital expenditure claimed by the Petitioner as per the Auditor certificate is allowed which shall be reviewed at the time of truing up based on the submission of required information by the Petitioner.

40. Based on the above, the following capital cost as on COD and as on 31.3.2019 after taking into consideration the allowable IDC, IEDC and initial spare is considered for the computation of tariff for the assets covered in the present petition:-

(₹ in lakh)

Particulars	Allowed Capital Cost as on COD	Projected Additional capitalization			Capital Cost as 31.3.2019
		2016-17	2017-18	2018-19	
Asset-I	5305.37	571.64	398.80	99.85	**6421.74**
Asset-II	351.69	148.97	130.35	93.10	**724.11**
Asset-III	1891.43	0.00	273.29	117.12	**2281.84**

Debt- Equity Ratio

41. Clauses 1 and 5 of Regulation 19 of the 2014 Tariff Regulations specifies as under:

"(1) For a project declared under commercial operation on or after 1.4.2014, the debtequity 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

42. The Petitioner has claimed debt-equity ratio of 70:30 as on the date of commercial operation of the instant assets. The details of debt- equity in respect of the assets covered in the instant petition as on COD and as on 31.3.2019 are as under:-

(₹ in lakh)

Asset-I	**As on COD**		**As on 31.3.2019**	
	Capital Cost	**%**	**Capital Cost**	**%**
Debt	3713.76	70.00	4462.96	70.00
Equity	1591.61	30.00	1912.70	30.00
Total	**5305.37**	**100.00**	**6375.66**	**100.00**

(₹ in lakh)

Asset-II	**As on COD**		**As on 31.3.2019**	
	Capital Cost	**%**	**Capital Cost**	**%**
Debt	246.19	70.00	506.88	70.00
Equity	105.51	30.00	217.23	30.00
Total	**351.69**	**100.00**	**724.11**	**100.00**

(₹ in lakh)

Asset-III	**As on COD**		**As on 31.3.2019**	
	Capital Cost	**%**	**Capital Cost**	**%**
Debt	1324.01	70.00	1597.29	70.00
Equity	567.43	30.00	684.55	30.00
Total	**1891.43**	**100.00**	2281.84	**100.00**

<u>Return on Equity (RoE)</u>

43. Clause (1) and (2) of Regulation 24 and Clause (1) and (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."

44. The Petitioner has submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate of 20.961% as per the above Regulations. According to the Petitioner, 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 2014-15 to 2018-19 on actual gross income of any financial year. The Petitioner has submitted that 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. The Petitioner has submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.

45. We have considered the submissions made by the Petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of RoE. 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 RoE. The MAT rate is applicable to the Petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of RoE, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. Accordingly, the details of RoE calculated are as under:-

(₹ in lakh)

Asset-I			
Particulars	**2016-17**	**2017-18**	**2018-19**
Opening Equity	1591.61	1763.10	1882.74
Addition due to Additional Capitalization	171.49	119.64	29.96
Closing Equity	1763.10	1882.74	1912.70
Average Equity	1677.36	1822.92	1897.72
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
MAT rate for the Financial year 2013-14	20.961%	20.961%	20.961%

Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	**170.32**	**357.48**	**372.14**

(₹ in lakh)

Asset-II			
Particulars	**2016-17**	**2017-18**	**2018-19**
Opening Equity	105.51	150.20	189.30
Addition due to Additional Capitalization	44.69	39.11	27.93
Closing Equity	150.20	189.30	217.23
Average Equity	127.85	169.75	203.27
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
MAT rate for the Financial year 2013-14	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	**15.04**	**33.29**	**39.86**

(₹ in lakh)

Asset-III		
Particulars	**2017-18**	**2018-19**
Opening Equity	567.43	649.42
Addition due to Additional Capitalization	81.99	35.14
Closing Equity	649.42	684.55
Average Equity	608.42	666.98
Return on Equity (Base Rate)	15.50%	15.50%
MAT rate for the Financial year 2013-14	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
Return on Equity (Pre-tax)	**118.66**	**130.80**

Interest on Loan (IOL)

46. Regulation 26 of the 2014 Tariff Regulations with regard to IOL specifies 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."

47. In these calculations, IOL has been worked out as hereinafter:-

(a) Gross amount of loan and rate of interest and weighted average rate of interested on actual average loan have been considered as per the petition;

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

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

48. The Petitioner has submitted that the IOL has been considered on the basis of rate prevailing as on DOCO and the change in interest due to floating rate of interest applicable, if any, for the project needs to be claimed/ adjusted over the tariff block of 5 years directly from the beneficiaries. It is clarified that the IOL has been calculated on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing up.

49. Detailed calculations in support of IOL have been given in the **Annexure** to this order.

50. The details of IOL calculated are as under:

(₹ in lakh)

Asset-I			
Particulars	**2016-17**	**2017-18**	**2018-19**
Gross Normative Loan	3713.76	4113.91	4393.07
Cumulative Repayment upto previous Year	0.00	153.36	475.18
Net Loan-Opening	3713.76	3960.55	3917.89
Addition due to Additional Capitalization	400.15	279.16	69.90
Repayment during the year	153.36	321.82	335.01
Net Loan-Closing	3960.55	3917.89	3652.78
Average Loan	3837.16	3939.22	3785.33
Weighted Average Rate of Interest on Loan	8.2429%	8.2429%	8.2429%
Interest on Loan	**163.78**	**324.71**	**312.02**

(₹ in lakh)

Asset-II			
Particulars	**2016-17**	**2017-18**	**2018-19**
Gross Normative Loan	246.19	350.46	441.71
Cumulative Repayment upto previous Year	0.00	13.63	43.74
Net Loan-Opening	246.19	336.83	397.97
Addition due to Additional Capitalization	104.28	91.25	65.17
Repayment during the year	13.63	30.11	36.02
Net Loan-Closing	336.83	397.97	427.13
Average Loan	291.51	367.40	412.55
Weighted Average Rate of Interest on Loan	8.1366%	8.1354%	8.1348%
Interest on Loan	**14.23**	**29.89**	**33.56**

(₹ in lakh)

Asset-III		
Particulars	**2017-18**	**2018-19**
Gross Normative Loan	1324.01	1515.31
Cumulative Repayment upto previous Year	0.00	106.50
Net Loan-Opening	1324.01	1408.81
Addition due to Additional Capitalization	191.30	81.98
Repayment during the year	106.50	117.39
Net Loan-Closing	1408.81	1373.41
Average Loan	1366.41	1391.11
Weighted Average Rate of Interest on Loan	8.4396%	8.4366%
Interest on Loan	**114.69**	**117.36**

Depreciation

51. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as follows:

"27. Depreciation:

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

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

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

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(2) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(3) 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."

52. The instant transmission assets were put under commercial operation during 2014-19 tariff period. Accordingly, it will complete 12 years beyond the tariff period 2014-19. Therefore, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations.

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

(₹ in lakh)

Asset-I			
Particulars	**2016-17**	**2017-18**	**2018-19**
Gross Block as on COD	5305.37	5877.01	6275.81
Addition during 2014-19	571.64	398.80	99.85
Gross Block	5877.01	6275.81	6375.66
Average Gross Block	5591.19	6076.41	6325.74
Rate of Depreciation	5.2969%	5.2963%	5.2960%
Depreciable Value	5032.07	5468.77	5693.17
Remaining Depreciable Value	5032.07	5315.42	5217.99
Depreciation	**153.36**	**321.82**	**335.01**

(₹ in lakh)

Asset-II			
Particulars	**2016-17**	**2017-18**	**2018-19**
Gross Block as on COD	351.69	500.66	631.01
Addition during 2014-19	148.97	130.35	93.10
Gross Block	500.66	631.01	724.11
Average Gross Block	426.18	565.84	677.56
Rate of Depreciation	5.3303%	5.3207%	5.3158%
Depreciable Value	383.56	509.26	609.81
Remaining Depreciable Value	383.56	495.63	566.07
Depreciation	**13.63**	**30.11**	**36.02**

(₹ in lakh)

Asset-III		
Particulars	**2017-18**	**2018-19**
Gross Block as on COD	1891.43	2164.72
Addition during 2014-19	273.29	117.12
Gross Block	2164.72	2281.84

Average Gross Block	2028.08	2223.28
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	1825.27	2000.96
Remaining Depreciable Value	1825.27	1894.46
Depreciation	**106.50**	**117.39**

Operation and Maintenance Expenses (O&M Expenses)

54. The Petitioner has claimed the following O&M Expenses:-

S.No.	Asset	O&M Expenses claimed by the Petitioner		
		2016-17	2017-18	2018-19
1.	Asset-I	124.03	246.70	254.88
2.	Asset-II	77.52	133.02	137.42
3.	Asset-III	0	113.05	117.46

55. The Petitioner has claimed normative O&M Expenses as per sub-clause (a) of clause (4) of Regulation 29 of the 2014 Tariff Regulations. According to the Petitioner, O&M Expenses for the tariff period 2014-19 had been arrived at on the basis of normalized actual O&M Expenses during the periods 2008-09 to 2012-13. The Petitioner has submitted that the wage revision of the employees is due w.e.f 1.1.2017 and actual impact of wage hike effective from a future date has not been factored in fixation of the normative O&M rates specified for the tariff period 2014-19. The Petitioner has submitted that it would approach the Commission for suitable revision in norms for O&M Expenses for claiming the impact of wage hike from 1.1.2017 onwards, if any.

56. 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.

57. As per Regulation 29(4) of 2014 Tariff Regulations, the allowable O&M expenses for the assets covered in the instant petition are as under:

(₹ in lakh)

Sl.No.	Asset	O&M expenses allowed		
		2016-17	2017-18	2018-19
1.	Asset-I	123.64	246.7	254.88
2.	Asset-II	77.244	133.02	137.42
3.	Asset-III	-	113.05	117.46

Interest on Working Capital (IWC)

58. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as under:

"**28. Interest on Working Capital:**

(1) The working capital shall cover:

(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:

(i) Receivables equivalent to two months of fixed cost;

(i) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and

(ii) Operation and maintenance expenses for one month"

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later"

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

59. The Petitioner is entitled to claim IWC 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 of annual transmission charges.

(ii) Maintenance spares:

Regulation 28 of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses. The value of maintenance spares has accordingly been worked out.

(iii) O&M Expenses:

O&M Expenses have been considered for one month as a component of working capital.

(iv) Rate of Interest on Working Capital:

As per proviso 3 of Regulation 28 of the 2014 Tariff Regulations, SBI base rate of 9.30% and 9.10% as on 1.4.2016 and 1.4.2017 respectively, plus 350 bps i.e. 12.80% for Asset-I and Asset-II and 12.60% for Asset-III have been considered for the asset, as the rate of interest on working capital.

60. Accordingly, the interest on working capital as determined is as under:-

(₹ in lakh)

Asset-I			
Particulars	**2016-17**	**2017-18**	**2018-19**
Maintenance Spares	35.93	37.01	38.23
O & M expenses	19.96	20.56	21.24
Receivables	202.33	214.25	218.27
Total	**258.22**	271.81	277.74
Interest	**17.11**	**34.79**	**35.55**

(₹ in lakh)

Asset-II			
Particulars	**2016-17**	**2017-18**	**2018-19**
Maintenance Spares	19.31	19.95	20.61
O & M expenses	10.73	11.09	11.45

Receivables	34.76	39.22	42.74
Total	64.80	70.25	74.80
Interest	**4.98**	**8.99**	**9.57**

(₹ in lakh)

Asset-III		
Particulars	**2017-18**	**2018-19**
Maintenance Spares	17.05	17.62
O & M expenses	9.47	9.79
Receivables	78.09	82.82
Total	104.62	110.22
Interest	**13.11**	**13.89**

<u>Annual Transmission charges</u>

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

(₹ in lakh)

Asset-I			
Particulars	**2016-17**	**2017-18**	**2018-19**
Depreciation	153.36	321.82	335.01
Interest on loan	163.78	324.71	312.02
Return on Equity	170.32	357.48	372.14
Interest on Working Capital	17.11	34.79	35.55
O&M Expenses	123.64	246.70	254.88
Total	**628.21**	**1285.50**	**1309.60**

(₹ in lakh)

Asset-II			
Particulars	**2016-17**	**2017-18**	**2018-19**
Depreciation	13.63	30.11	36.02
Interest on loan	14.23	29.89	33.56
Return on Equity	15.04	33.29	39.86
Interest on Working Capital	4.98	8.99	9.57
O&M Expenses	77.24	133.02	137.42
Total	**125.13**	**235.30**	**256.43**

(₹ in lakh)

Asset-III		
Particulars	**2017-18**	**2018-19**
Depreciation	106.50	117.39
Interest on loan	114.69	117.36
Return on Equity	118.66	130.80
Interest on Working Capital	13.11	13.89
O&M Expenses	113.05	117.46
Total	**466.00**	**496.89**

62. The Petitioner has submitted that the claim for transmission charges and other charges is exclusive of incentive, late payment surcharge, FERV, any statutory taxes, levies, duties, cess and charges or any other kind of impositions, etc. The same if imposed shall be borne and additionally paid by the Respondents. The Petitioner is entitled to FERV as provided under Regulation 50 of the 2014 Tariff Regulations and the Petitioner can make other claims as per the 2014 Tariff Regulations.

Filing Fee and the Publication Expenses

63. The Petitioner has sought reimbursement of fee paid by it for filing the petitionand publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The Petitioner shall be entitled for reimbursement of the filing fees, publication expenses and licence fee 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

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

Service Tax

65. The Petitioner has sought to recover service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We have considered the submission of the Petitioner. Service tax is not levied on transmission. Since, service tax is subsumed by GST, Petitioner's prayer has become infructuous.

Goods and Services Tax

66. The Petitioner has prayed for reimbursement of tax, if any, on account of proposed implementation of GST. Since, GST is not levied on transmission at present, the Petitioner's prayer is premature.

Sharing of Transmission Charges

67. The transmission charges shall be recovered on monthly basis in accordance with Regulation 43 of the 2014 Tariff Regulations and shall be shared by the beneficiaries and long term transmission customers in terms of the Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 as amended time to time.

68. This order disposes of Petition No. 215/TT/2016.

Sd/-	sd/-	sd/-	sd/-
(M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**	**(P.K.Pujari)**
Member	**Member**	**Member**	**Chairperson**

Annexure
Asset-I

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN			
				(₹ in lakh)
	Details of Loan	**2016-17**	**2017-18**	**2018-19**
1	**Bond LIV**			
	Gross loan opening	1764.01	1764.01	1764.01
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1764.01	1764.01	1764.01
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1764.01	1764.01	1764.01
	Average Loan	1764.01	1764.01	1764.01
	Rate of Interest	7.97%	7.97%	7.97%
	Interest	140.59	140.59	140.59
	Rep Schedule	Redeemable at par in 3 equal installments on 15.7.2021, 15.7.2026 & 15.7.2031		
2	**Bond XLIX**			
	Gross loan opening	482.00	482.00	482.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	482.00	482.00	482.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	482.00	482.00	482.00
	Average Loan	482.00	482.00	482.00
	Rate of Interest	8.15%	8.15%	8.15%
	Interest	39.28	39.28	39.28
	Rep Schedule	Redeemable at par in 3 equal installments on 9.3.2020, 9.3.2025 & 9.3.2030		
3	**Bond LI**			
	Gross loan opening	665.62	**665.62**	**665.62**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**	**0.00**
	Net Loan-Opening	665.62	665.62	665.62
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	665.62	665.62	665.62
	Average Loan	665.62	665.62	665.62
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	55.91	55.91	55.91
	Rep Schedule	12 annual installments from 14.09.2019		
4	**Bond XLVIII**			

	Gross loan opening	385.55	**385.55**	**385.55**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**	**0.00**
	Net Loan-Opening	385.55	385.55	385.55
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	385.55	385.55	385.55
	Average Loan	385.55	385.55	385.55
	Rate of Interest	8.20%	8.20%	8.20%
	Interest	31.62	31.62	31.62
	Rep Schedule	4 equal installments on 23.1.2020, 23.1.2022, 23.1.2025 and 23.1.2030		
5	**SBI Loan 2015-16**			
	Gross loan opening	311.47	**311.47**	**311.47**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**	**0.00**
	Net Loan-Opening	311.47	311.47	311.47
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	311.47	311.47	311.47
	Average Loan	311.47	311.47	311.47
	Rate of Interest	9.55%	9.55%	9.55%
	Interest	29.75	29.75	29.75
	Rep Schedule	20 equal HY installmentsw.e.f. 15.6.2019		
6	**Bond L**			
	Gross loan opening	196.92	196.92	196.92
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	196.92	196.92	196.92
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	196.92	196.92	196.92
	Average Loan	196.92	196.92	196.92
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	16.54	16.54	16.54
	Rep Schedule	12 annual installments from 27.5.2019		
	Total Loan			
	Gross loan opening	3805.57	3805.57	3805.57
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	3805.57	3805.57	3805.57
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	3805.57	3805.57	3805.57
	Average Loan	3805.57	3805.57	3805.57
	Rate of Interest	8.2429%	8.2429%	8.2429%
	Interest	313.69	313.69	313.69

Asset-II

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN			
				(₹ in lakh)
	Details of Loan	**2016-17**	**2017-18**	**2018-19**
1	**Bond LIV**			
	Gross loan opening	152.49	154.21	156.14
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	152.49	154.21	156.14
	Additions during the year	1.72	1.93	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	154.21	156.14	156.14
	Average Loan	153.35	155.18	156.14
	Rate of Interest	7.97%	7.97%	7.97%
	Interest	12.22	12.37	12.44
	Rep Schedule	Redeemable at par in 3 equalinstallments on 15.7.2021, 15.7.2026 & 15.7.2031		
2	**Bond LI**			
	Gross loan opening	30.94	**30.94**	**30.94**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**	**0.00**
	Net Loan-Opening	30.94	30.94	30.94
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	30.94	30.94	30.94
	Average Loan	30.94	30.94	30.94
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	2.60	2.60	2.60
	Rep Schedule	12 annual installments from 14.9.2019		
3	**Bond L**			
	Gross loan opening	66.07	66.07	66.07
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	66.07	66.07	66.07
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	66.07	66.07	66.07
	Average Loan	66.07	66.07	66.07
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	5.55	5.55	5.55
	Rep Schedule	12 annual installments from 27.5.2019		
	Total Loan			
	Gross loan opening	249.50	251.22	253.15

	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	249.50	251.22	253.15
	Additions during the year	1.72	1.93	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	251.22	253.15	253.15
	Average Loan	250.36	252.19	253.15
	Rate of Interest	8.1366%	8.1354%	8.1348%
	Interest	20.37	20.52	20.59

Asset-III

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN		
			(₹ in lakh)
	Details of Loan	**2017-18**	**2018-19**
1	**Bond LIII**		
	Gross loan opening	304.79	333.56
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	304.79	333.56
	Additions during the year	28.77	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	333.56	333.56
	Average Loan	319.18	333.56
	Rate of Interest	8.13%	8.13%
	Interest	25.95	27.12
	Rep Schedule	12 annual equal instalments from 25.4.2020	
2	**SBI Loan 2014-15**		
	Gross loan opening	488.53	**488.53**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**
	Net Loan-Opening	488.53	488.53
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	488.53	488.53
	Average Loan	488.53	488.53
	Rate of Interest	8.90%	8.90%
	Interest	43.48	43.48
	Rep Schedule	20 equal HY instalments w.e.f 15.6.2019	
3	**Bond LI**		
	Gross loan opening	68.15	**68.15**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**
	Net Loan-Opening	68.15	68.15
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	68.15	68.15
	Average Loan	68.15	68.15
	Rate of Interest	8.40%	8.40%
	Interest	5.72	5.72
	Rep Schedule	12 annual installments from 14.9.2019	
4	**Bond XLVIII**		
	Gross loan opening	504.77	**504.77**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**
	Net Loan-Opening	504.77	504.77
	Additions during the year	0.00	0.00

	Repayment during the year	0.00	0.00
	Net Loan-Closing	504.77	504.77
	Average Loan	504.77	504.77
	Rate of Interest	8.20%	8.20%
	Interest	41.39	41.39
	Rep Schedule	4 equalinstalments on 23.1.2020, 23.1.2022, 23.1.2025 and 23.1.2030	
5	**Bond L**		
	Gross loan opening	60.95	60.95
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	60.95	60.95
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	60.95	60.95
	Average Loan	60.95	60.95
	Rate of Interest	8.40%	8.40%
	Interest	5.12	5.12
	Rep Schedule	12 annual installments from 27.5.2019	
	Total Loan		
	Gross loan opening	1427.19	1455.96
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	1427.19	1455.96
	Additions during the year	28.77	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	1455.96	1455.96
	Average Loan	1441.58	1455.96
	Rate of Interest	8.4396%	8.4366%
	Interest	121.66	122.83