

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**PETITION NO. 61/TT/2015**

**Coram:**

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

**Date of Hearing: 06.04.2016  
Date of Order : 26.05.2016**

**In the matter of:**

Determination of transmission tariff for Narendra (New, Kudgi)-Narendra (Existing) 400 kV D/C Quad TL along with New 765/400 kV GIS Sub-station at Narendra (New, Kudgi) and Bay extensions at Narendra (Existing), Narendra (New, Kudgi)-Kolhapur (New) 765 kV D/C TL and associated bays at Narendra (New, Kudgi) and Kolhapur (New) under Transmission System associated with System Strengthening-XVII in Southern Regional Grid" in Southern Region for tariff block 2014-19 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

**And in the Matter of:**

Power Grid Corporation of India Ltd,  
SAUDAMINI, Plot No. 2,  
Sector-29, Gurgaon-122001 (Haryana)

**.....Petitioner**

**Versus**

1. Karnataka Power Transmission Corporation Limited, (KPTCL),  
Kaveri Bhawan,  
Bangalore – 560009
2. Transmission Corporation of Andhra Pradesh Limited, (APTRANSCO),  
Vidyut Soudha, Hyderabad- 500082
3. Kerala State Electricity Board (KSEB),  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram - 695 004
4. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO),  
NPKRR Maaligai, 800, Anna Salai,  
Chennai - 600 002



5. Electricity Department, Govt. of Pondicherry,  
Pondicherry - 605001
6. Eastern Power Distribution Company of Andhra Pradesh Limited, (APEPDCL)  
P&T Colony, Seethmmadhara,  
Vishakhapatnam, Andhra Pradesh
7. Southern Power Distribution Company of Andhra Pradesh Limited, (APSPDCL),  
Srinivasasa Kalyana Mandapam Backside,  
Tiruchanoor Road, Kesavayana Gunta,  
Tirupati-517 501, Chittoor District, Andhra Pradesh
8. Central Power Distribution Company of Andhra Pradesh Limited, (APCPDCL),  
Corporate Office, Mint Compound,  
Hyderabad - 500 063, Andhra Pradesh
9. Northern Power Distribution Company of Andhra Pradesh Limited, (APNPDCL),  
Opp. NIT Petrol Pump, Chaitanyapuri,  
Kazipet, Warangal - 506 004, Andhra Pradesh
10. Bangalore Electricity Supply Company Ltd. (BESCOM),  
Corporate Office, KR.Circle  
Bangalore - 560001, Karnataka
11. Gulbarga Electricity Supply Company Ltd (GESCOM)  
Station Main Road, Gulbarga, Karnataka
12. Hubli Electricity Supply Company Ltd, (HESCOM)  
Navanagar, PB Road,  
Hubli, Karnataka
13. MESCOM Corporate Office,  
Paradigm Plaza, AB Shetty Circle,  
Mangalore – 575001, Karnataka
14. Chamundeswari Electricity Supply Corporation Ltd., (CESC),  
927, L J Avenue, Ground Floor,  
New Kantharaj Urs Road, Saraswatipuram,  
MYSORE - 570 009, Karnataka
15. Electricity Department Govt. Of Goa  
Vidyut Bhawan, Panaji,  
Near Mandvi Hotel, Goa - 403 001
16. II & FS Tamilnadu Power Company Limited,  
B-Block, 4<sup>th</sup> floor,  
Navin's Presidium,  
103, Nelson Manickam Road,  
Aminjikarai,

Chennai- 600029  
Tamil Nadu

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

**...Respondent(s)**

The following were present:

For Petitioner: Shri S.S. Raju, PGCIL  
Shri Avinash M Pavgi, PGCIL  
Shri Rakesh Prasad, PGCIL  
Shri Pankaj Sharma, PGCIL  
Shri M. M. Mondal, PGCIL  
Shri S.K Venkatesan, PGCIL  
Shri S.C Taneja, PGCIL

For Respondents: Shri S. Vallinayagam, Advocate

### **ORDER**

The petition has been preferred by Power Grid Corporation of India Limited ("the petitioner") for determination of tariff under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations") for the period from COD to 31.3.2019 in respect of Narendra (New, Kudgi) - Narendra (Existing) 400 kV D/C Quad TL along with New 765/400 kV GIS Substation at Narendra (New, Kudgi) and Bay extensions at Narendra (Existing), Narendra (New, Kudgi) - Kolhapur (New) 765 kV D/C TL and associated bays at Narendra (New, Kudgi) and Kolhapur (New) under Transmission System associated with System Strengthening-XVII in Southern Regional Grid" in Southern Region (hereinafter referred to as "the transmission asset")

2. The petitioner has been entrusted with transmission system associated with “System Strengthening-XVII in Southern Regional Grid” in Southern Region. The scope of work covered under “System Strengthening-XVII in Southern Regional Grid” in Southern Region is as follows:-

Transmission Lines:

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

Sub Station:

- (i) Establishment of 765/400 kV GIS Sub-station at Narendra (New, Kudgi), (Initially charged at 400 kV).
- (ii) Establishment of 765/400 kV GIS Sub-station at Kolhapur (New), (Initially charged at 400 kV)
- (iii) Extension of 400/220 kV Sub-station at Narendra (AIS)

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

a) The scope of the scheme was discussed and agreed in the 31<sup>st</sup> and 33<sup>rd</sup> SCM of Southern Region Constituents held on 16.11.2010 and 20.10.2011. Subsequently the scheme was discussed and approved in the 18<sup>th</sup> Meeting of SRPC held on 23.12.2011.

b) The Investment Approval (IA) to the transmission project was accorded by the Board of Directors of the petitioner company vide Memorandum No. C/CP/SRSS-XVII dated 2.7.2012, at an estimated cost of ₹150874 lakh including IDC of ₹6197 lakh based on April 2012 price level.



4. As per the IA, the project was scheduled to be commissioned within 33 months from the date of approval of Board of Directors. The date of approval of Board of Directors is 27.6.2012 and accordingly the schedule date of completion of work is 26.3.2015.

5. The petitioner, vide affidavit dated 23.5.2016 , has submitted the actual date of commercial operation of the assets covered in the instant petition, as below:-

<b>Asset description</b>	<b>Actual COD</b>
Narendra (New, Kudgi) – Narendra (Existing) 400 kV D/C Quad TL along with associated bays and equipments at Narendra (New, Kudgi) Sub-station and Narendra (Existing) Sub-station (referred as “Asset-I”)	11.12.2015
One Circuit of Narendra (New, Kudgi) – Kolhapur (New) 765 kV D/C TL (Initially Charged at 400 kV) along with new 765/400 kV GIS SS at Narendra (New, Kudgi) (initially charged at 400 kV) and extension of Kolhapur (New) Sub-station associated bays at Narendra (New, Kudgi) and Kolhapur (New) (referred as “Asset-II”)	19.11.2015
Second Circuit of Narendra (New, Kudgi) – Kolhapur (New) 765 kV D/C TL (Initially Charged at 400 kV) along with associated bays and equipments at Narendra (New, Kudgi) and Kolhapur (New) (referred as “Asset-III”)	11.12.2015

6. The petitioner has submitted vide affidavit dated 23.5.2016, letter declaring the COD and trial operation certificate issued by RLDC in respect of commissioning of the instant transmission assets.

7. The capital cost claimed by the petitioner, as certified vide Auditor’s Certificate dated 16.5.2016 along with the estimated additional capital expenditure during 2014-19 tariff period, is as below:-

(₹ in lakh)

Asset	Re-apportioned approved cost	Capital Cost Up to COD	Additional Capital Expenditure			Total Est. Exp.
			2015-16	2016-17	2017-18	
Asset- I	41762.00	38192.07	472.16	1631.59	135.00	40430.82
Asset- II	68311.00	56375.85	938.68	4799.39	1405.00	63518.92
Asset-III	18378.00	16525.18	262.89	1235.22	230.47	18253.76

8. The Annual Transmission Charges for the instant assets was allowed under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges vide order dated 15.4.2015.

9. The petition was served on the respondents and notice of this application has been published in the newspaper in accordance with Section 64 of the Electricity Act, 2003 (“the Act”). No comments/objections have been received from the public in response to the notice in newspaper. The hearing in this matter was held on 6.4.2016. PEL Power Ltd. has filed reply vide affidavit dated 17.3.2015. TANGEDCO has also filed a reply to the petition. The petitioner has not filed rejoinder to the aforesaid replies. The objections raised by PEL Power Ltd. regarding the payment of transmission charges for the instant assets are being dealt in a separate Petition No. 315/MP/2013, for which the order is reserved by the Commission and thus are not dealt with in the instant petition.

10. The petitioner was directed to submit additional information in respect of the instant transmission assets sought vide order dated 15.4.2015 and the Record of Proceedings for hearing dated 6.4.2016. In response, the petitioner has filed the information vide affidavit dated 23.5.2016.

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

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

**Asset-I:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	619.36	2075.84	2121.94	2125.51
Interest on Loan	151.22	482.39	455.60	418.01
Return on Equity	655.53	2201.28	2253.49	2257.48
Interest on Working Capital	40.02	133.79	136.25	136.39
O & M Expenses	130.16	438.77	453.39	468.46
<b>Total</b>	<b>1596.29</b>	<b>5332.07</b>	<b>5420.67</b>	<b>5405.85</b>

**Asset-II:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	1074.93	3074.54	3228.35	3263.50
Interest on Loan	260.54	709.36	691.62	641.77
Return on Equity	1231.92	3529.38	3712.76	3754.29
Interest on Working Capital	65.13	185.35	193.26	194.47
O & M Expenses	109.30	307.94	318.13	328.72
<b>Total</b>	<b>2741.82</b>	<b>7806.57</b>	<b>8144.12</b>	<b>8182.75</b>

**Asset-III:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	269.20	916.22	952.49	957.85
Interest on Loan	63.94	207.40	199.78	183.95
Return on Equity	301.63	1028.53	1071.85	1078.67
Interest on Working Capital	18.76	63.51	65.63	66.03
O & M Expenses	75.03	252.92	261.29	269.99
<b>Total</b>	<b>728.56</b>	<b>2468.58</b>	<b>2551.04</b>	<b>2556.49</b>

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

**Asset-I:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O&M Expenses	35.39	36.56	37.78	39.04
Maintenance Spares	63.71	65.82	68.01	70.27
Receivables	868.16	888.68	903.45	900.97
Total working capital	967.26	991.06	1009.24	1010.28
Rate of Interest	13.50	13.50	13.50	13.50
Interest on working capital	40.02	133.79	136.25	136.39

**Asset-II:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O&M Expenses	24.84	25.66	26.51	27.39
Maintenance Spares	44.71	46.19	47.72	49.31
Receivables	1246.28	1301.10	1357.35	1363.79
Total working capital	1315.84	1372.95	1431.58	1440.49
Rate of Interest	13.50	13.50	13.50	13.50
Interest on working capital	65.13	185.35	193.26	194.47

**Asset-III:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O&M Expenses	20.40	21.08	21.77	22.50
Maintenance Spares	36.73	37.94	39.19	40.50
Receivables	396.23	411.43	425.17	426.08
Total working capital	453.36	470.44	486.14	489.08
Rate of Interest	13.50	13.50	13.50	13.50
Interest on working capital	18.76	63.51	65.63	66.03

**Date of Commercial Operation (COD)**

14. The petitioner has claimed the date of the commercial operation for the instant transmission assets as below:-



Asset	Actual COD
Asset-I	11.12.2015
Asset-II	19.11.2015
Asset-III	11.12.2015

15. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-

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

xxx

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

xxx

xxx”

16. In response to query of the Commission regarding the reactor Bay Extension in Asset-I towards Bus Reactor, the petitioner has submitted that in Standing Committee Meetings, transmission system for evacuation of power from generating stations or System Strengthening Schemes are discussed which in turn gets approved in respective RPCs of the region. The reactive compensation for controlling voltages is being planned and executed by the petitioner as CTU and the same is approved in DPR. Accordingly, in the Feasibility Report, provision of Bus Reactor has been made and thus the petitioner has claimed Bus Reactor and its bay extension. The petitioner has enclosed the relevant extract of DPR (Scope), indicating provision of reactive compensation in scope of the project including the reactor.

17. The Commission had asked the petitioner to justify the splitting of Asset-II viz. D/C as ckt.1 and ckt.2 with different CODs. The petitioner has submitted that both

the circuits of Kudgi-Kolhapur line were ready in November, 2015 itself and the petitioner sought charging of both the lines simultaneously with RLDC/NLDCs. However, being an inter-regional Link, permission for charging of only one line was given and accordingly only one ckt. of D/C line was commissioned on 19.11.2015 along with the sub-station and other circuit was charged on 1.12.2015 and commissioned on 11.12.2015.

18. We have considered the submissions made by the petitioner. It is observed that the provision of bus reactor bay was made in the “Scope of Works” submitted by the petitioner. It is further observed that the splitting of the Narendra (New, Kudgi)-Kolhapur (New) 765 kV D/C line was done based on the directions of RLDC due to peculiar nature of inter-regional link.

19. The petitioner, vide affidavit dated 23.5.2016, has submitted the RLDC certificates in support of the claim of commercial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations indicating completion of successful trial operation for the instant transmission asset. Taking into consideration the submissions made by the petitioner and the RLDC certificates commissioning of Asset-II in two parts is allowed. Ckt. I and Ckt. II of Asset-II have been numbered as Asset-II and Asset-III. Accordingly, the commercial operation dates of Asset-I, II and III are considered as 11.12.2015, 19.11.2015 and 11.12.2015 respectively. The tariff is worked out for the asset from its COD to 31.3.2019.

### **Capital Cost**

20. The petitioner has claimed the capital cost as mentioned in Para 7 supported by Auditor’s Certificate dated 31.3.2016 for Asset-I and dated 19.5.2016 for Asset-II and III, after adjusting the interest during construction (IDC) and incidental expenditure

during construction (IEDC) as discharged on cash basis. The total capital cost up to 31.3.2019 includes the IDC, IEDC, capitalized spares and estimated additional capital expenditure from COD to 31.3.2019.

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

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

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

- a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- c) Increase in cost in contract packages as approved by the Commission;
- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

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

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

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

22. The admissible capital cost of the transmission asset as on COD is worked out in the subsequent paragraphs.

### **Cost over-run**

23. As per the affidavit dated 23.5.2016, the apportioned approved cost of Asset-I, II and III is ₹41762.00 lakh, ₹68311.00 lakh and ₹18378.00 lakh respectively. The estimated completion cost for all three assets is within the apportioned approved cost as given in Para 7 of this order. Hence, there is no cost over-run in any of the assets.

### **Time Over-run**

24. As per the Investment Approval, the project was scheduled to be commissioned within 33 months from the date of Investment Approval. The date of Investment Approval is 27.6.2012 and accordingly the schedule date of completion of work is 26.3.2015. Against the scheduled completion date of 26.3.2015, the asset has been commissioned as below:-

<b>Asset</b>	<b>Scheduled COD</b>	<b>Actual COD</b>	<b>Time overrun (days)</b>
Asset-I	26.3.2015	11.12.2015	260
Asset-II		19.11.2015	238
Asset-III		11.12.2015	260

Thus, there is time overrun of 260 days in commissioning of Asset-I and III and 238 days in Asset-II.

25. The petitioner has submitted that the reason for time overrun was inordinate delay in handover of land for establishment of sub-station by Karnataka Industrial Areas Development Board (KIADB). The land was to be handed over in June, 2012 (the inception of the project in June 2012) but could actually be acquired only in February 2014, i.e., with a delay of about 20 months. Further, progress of works was affected due to agitation/resistance by affected land owners of NTPC's Kudgi

Thermal Power Station which was beyond the control of petitioner. The detailed reasons for time overrun are as follows:-

### **Land Acquisition**

26. The petitioner has submitted that necessary action and prudent steps were taken for land acquisition. It has been submitted that after the first instance of communication dated 30.12.2011 with the Deputy Commissioner, Bijapur, in respect of acquisition of land for establishing 765/400 kV GIS, the land was finally handed over to the petitioner on 28.2.2014. The petitioner has submitted a detailed chronology of events that led to delay in handing over the land by Karnataka Industrial Areas Development Board (KIADB).

### **Agitation by Land owners**

27. The petitioner has submitted that the progress of work was severely affected due to agitation by affected land owners of the project land which was beyond the control of petitioner. The residents of Kudgi, Telgi, Masuti, Muttagi villages were agitating against setting up of the NTPC plant at Kudgi as they were afraid that the plant will adversely impact their life, cultivation/crops and environment. The said agitation was supported by Karnataka Rajya Raitha Sangha and many times public meetings were conducted and all nearby villagers were mobilized against the plant. Further, on 5.7.2014, a large group of farmers / villagers staged a protest opposing the plant, and a sub-inspector along with a few police personnel and farmers were injured in firing. Due to the above incident, around 3000 workers left the project site including the Kudgi GIS work site. Till end of August 2014, situation was grim and only in the first week of September 2014 normalcy restored and the work was resumed. Thus, the construction work at Kudgi GIS Station was severely affected for



almost two months. The petitioner has further submitted that in light of the above facts, it was not possible for the petitioner to proceed ahead to establish the proposed bays. The inability to continue the construction work was purely on account of circumstances beyond the control of petitioner.

28. The petitioner has submitted that despite substantial delay of about 20 months in land acquisition and stiff resistance from land owners during execution of project, the petitioner has implemented the project on war foot basis and completed the project with a delay of only about 8 months in case of Asset-II and 9 months in case of Asset-I and Asset-3. As regards additional delay of one month for Asset-3 i.e., ckt.2 of 765 kV D/C Kudgi-Kolhapur Line along with associated bays, it is to mention that both the circuits of Kudgi-Kolhapur Lines were ready in November 2015 itself and sought charging of both the lines simultaneously with RLDC/NLDCs. However, being an inter-regional Link, permission for charging of only one line was given and accordingly only one ckt. of D/C line was commissioned on 19.11.2015 along with the sub-station and other circuit was charged on 1.12.2015 and commissioned on 11.12.2015. The petitioner has enclosed the communication depicting request made to RLDC for charging of both the lines and charging codes obtained from NLDC/RLDC. Hence, the delay of about additional one month in respect of Asset-III is mainly due to system constraints.

29. As regards additional delay of 1 month for Asset-1 i.e., 400 kV Kudgi- Narendra D/C line along with associated bays, the petitioner has submitted that all the construction activities of the entire element were completed other than in one location due to protest by land owners. As this element is required for power flow from WR-SR region through Kudgi-Kolhapur inter regional link, temporary

arrangement was made and accordingly CEA clearance was obtained and the line was charged in November 2015 along with 765 kV Kudgi-Kolhapur Line. On continuous persuasion with land owners, the petitioner was able to complete the balance works and declared under commercial operation with effect from 11.12.2015. From the above, it is observed that the line was put to use in November 2015 along with commissioning of 765 kV Kudgi-Kolhapur inter regional link.

30. TANGEDCO has submitted that the delay is more than 6 months from the SCOD and the IDC and IEDC claimed beyond the SCOD is not permissible.

31. We have considered the submissions of the petitioner and the respondent. The petitioner has submitted the detailed chronology of events/activities that led to time overrun on account of land acquisition issues. We have taken chronology of events on record. It is observed from the above chronology that the entire land acquisition process commenced vide letter dated 30.12.2011 and culminated in finally handing over the land to the petitioner by KIADB on 28.2.2014. The petitioner has enclosed relevant correspondences to substantiate the aforesaid activities that led to the delay. It is further observed that there was severe resistance at the Kudgi site and agitation by the land owners towards execution of the power plant leading to a consequential disruption in work related to the 765/400 kV GIS Sub-station at the Kudgi site.

31. The land acquisition issues are to be examined on a case to case basis. We have perused the documents and the newspaper cuttings submitted by the petitioner. The petitioner has submitted letters of communication with the concerned authorities. The letters dated 25.7.2011, 12.3.2012, 11.4.2012, 16.8.2012,

15.11.2012, 20.11.2012, 24.11.2012, 4.12.2012, 20.12.2012, 31.12.2012, 6.4.2013, and 25.2.2014 which demonstrate that the petitioner has made efforts towards resolution of issues for timely commissioning of the assets. Despite the delay of about 20 months in land acquisition and stiff resistance from land owners during execution of project, it is observed that the petitioner has implemented the project with a time overrun of 238 days in case of Asset-II and 260 days in case of Asset-I & Asset-III.

32. Thus, having perused the documents and the submission made by the petitioner, we are of the view that the time overrun in the instant case is beyond the control of the petitioner and it cannot be attributed to the petitioner. Thus, the time overrun of 238 days in Asset-II and 260 days in Asset-I and III is being condoned and the corresponding IDC and IEDC is capitalised.

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

33. The petitioner has submitted vide affidavit dated 23.5.2016, the details of IDC discharged on cash basis as below:-

(₹ in lakh)

Asset	Actual COD	IDC as per Auditor's Certificate	IDC discharged up to COD	IDC discharged during 2015-16
Asset-I	11.12.2015	344.74	141.74	203.00
Asset-II	19.11.2015	676.99	428.02	248.97
Asset-III	11.12.2015	137.21	51.52	85.69

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





34. Thus, IDC amounting to ₹141.74 lakh, ₹428.02 lakh and ₹51.52 lakh discharged up to COD for Asset-I, II and III respectively are considered for tariff determination.

### **Initial Spares**

35. The petitioner has claimed initial spares of ₹306.69 lakh and ₹55.58 lakh pertaining to transmission line and sub-station in Asset-I, ₹306.69 lakh and ₹55.58 lakh pertaining to transmission line and sub-station in Asset-II, ₹154.01 lakh and ₹105.08 lakh pertaining to transmission line and sub-station in Asset-III, corresponding to capital cost (excluding IDC, IEDC, Land cost and cost of civil works) up to the cut-off date of 31.3.2018. TANGEDCO has submitted that the initial spares claimed by the petitioner are in excess of norms as per 2014 Tariff Regulations.

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

(₹ in lakh)

Asset	Element	P&M Cost as per Auditor's Certificate (exc. IDC, IEDC, civil works)	Initial Spares Claimed (as submitted vide Auditor's certificate)	Ceiling limit as per 2014 Regulation	Initial spares allowed	Excess initial spares
Asset-I	Transmission line	30668.66	306.69	1.00%	306.69	0.00
	Substation	3732.43	55.58	5.00%	193.52	0.00
Asset-II	Transmission line	49079.47	490.79	1.00%	490.79	0.00
	Substation	8343.54	639.75	5.00%	405.46	234.29
Asset-III	Transmission line	15400.61	154.01	1.00%	154.01	0.00
	Substation	1770.87	105.08	5.00%	87.67	17.41

37. The initial spares claimed by the petitioner are within the normative limits in Asset-I, in accordance with clause 13 of the Tariff Regulations. In case of Asset-II

and III, the initial spares are in excess for sub-station to the tune of ₹234.29 lakh and ₹17.41 lakh respectively. The same is being considered for the purpose of computation of tariff.

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

**Asset-I:**

(₹ in lakh)

Particulars	Capital cost claimed as on COD	IDC discharged during 2015-16	Capital cost on COD considered for tariff determination
Land - Freehold	0.00	0.00	0.00
Land – Leasehold	0.00	0.00	0.00
Building Civil Works & Colony	483.65	2.56	481.09
Transmission Line	34176.96	180.70	33996.26
Sub Station	3578.81	18.92	3559.89
PLCC	155.65	0.82	154.83
<b>Total</b>	<b>38395.07</b>	<b>203.00</b>	<b>38192.07</b>

**Asset-II:**

(₹ in lakh)

Particulars	Capital cost claimed as on COD	IDC discharged during 2015-16	Capital cost on cash basis	Excess initial spares	Capital cost on COD considered for tariff determination
Land - Freehold	832.51	0.00	832.51	0.00	832.51
Land – Leasehold	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	1359.96	6.07	1353.89	0.00	1353.89
Transmission Line	47030.73	209.87	46820.86	0.00	46820.86
Sub Station	7311.76	32.63	7279.13	231.44	7047.69
PLCC	89.86	0.40	89.46	2.84	86.61
<b>Total</b>	<b>56624.82</b>	<b>248.97</b>	<b>56375.85</b>	<b>234.29</b>	<b>56141.56</b>



### Asset-III:

(₹ in lakh)

Particulars	Capital cost claimed as on COD	IDC discharged during 2015-16	Capital cost on cash basis	Excess initial spares	Capital cost on COD considered for tariff determination
Land - Freehold	0.00	0.00	0.00	0.00	0.00
Land – Leasehold	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	87.11	0.45	86.66	0.00	86.66
Transmission Line	14967.19	77.21	14889.98	0.00	14889.98
Sub Station	1487.16	7.67	1479.49	16.63	1462.86
PLCC	69.40	0.36	69.04	0.78	68.27
<b>Total</b>	<b>16610.86</b>	<b>85.69</b>	<b>16525.17</b>	<b>17.41</b>	<b>16507.76</b>

### Additional Capital Expenditure

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

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

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

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

“Cut-off Date” means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of a year, the cut - off date shall be 31st March of the year closing after three years of the year of commercial operation:

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

41. The cut-off date in case of the instant assets is 31.12.2018. The petitioner has claimed an estimated additional capital expenditure of ₹2238.75 lakh, ₹7143.07 lakh and ₹1728.58 lakh during 2014-19 tariff period, on account of balance and retention payments. TANGEDCO has raised issue regarding the nature of additional capital expenditure claimed by the petitioner. The additional capital expenditure claimed by the petitioner is on account of balance and retention payments and the total estimated completion cost is within the apportioned approved cost. The same is allowed under Regulation 14(1) of 2014 Tariff Regulations, subject to true up on actual basis. The additional capital expenditure approved during 2014-19 is as below:

(₹ in lakh)

Asset	Re-apportioned approved cost	Exp. Up to COD	Additional Capital Expenditure			Total estimated additional capital expenditure	Total completion cost
			2015-16	2016-17	2017-18		
Asset- I	41762.00	38192.07	472.16	1631.59	135.00	2238.75	40430.82
Asset- II	68311.00	56375.85	938.68	4799.39	1405.00	7143.07	63518.92
Asset-III	18378.00	16525.18	262.89	1235.22	230.47	1728.58	18253.76

### **Debt: Equity**

42. Clause (1) of Regulation 19 of the 2014 Tariff Regulations provides as under:-

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

Provided that:

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

The petitioner has submitted vide affidavit dated 23.5.2016, the debt: equity ratio considered for the instant assets. The petitioner has considered debt: equity ratio of 71.76:28.24 for Asset-I, 70.00:30.00 for Asset-II, 70.01:29.99 for Asset-III as on COD which is in line with the 2014 Tariff Regulations, hence the same is considered for calculation of tariff.

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

(₹ in lakh)

Funding	As on COD	(%)	Additional capital expenditure during 2014-19	(%)	As on 31.3.2019	(%)
<b>Asset-I</b>						
Debt	27407.30	71.76	1567.13	70.00	28974.43	71.66
Equity	10784.77	28.24	671.63	30.00	11456.40	28.34
<b>Total</b>	<b>38192.07</b>	<b>100.00</b>	<b>2238.75</b>	<b>100.00</b>	<b>40430.82</b>	<b>100.00</b>
<b>Asset-II</b>						
Debt	39299.09	70.00	5000.15	70.00	44299.24	70.00
Equity	16842.47	30.00	2142.92	30.00	18985.39	30.00
<b>Total</b>	<b>56141.56</b>	<b>100.00</b>	<b>7143.07</b>	<b>100.00</b>	<b>63284.63</b>	<b>100.00</b>
<b>Asset-III</b>						
Debt	11557.49	70.01	1210.01	70.00	12767.51	70.01
Equity	4950.27	29.99	518.58	30.00	5468.85	29.99
<b>Total</b>	<b>16507.76</b>	<b>100.00</b>	<b>1728.59</b>	<b>100.00</b>	<b>18236.35</b>	<b>100.00</b>

### **Return on Equity (“ROE”)**

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

**“24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.  
(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system....”

**“25. Tax on Return on Equity:**

..(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:  
Rate of pre-tax return on equity = Base rate / (1-t)

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

45. The petitioner has claimed ROE at the rate of 20.961% during 2014-15 and at 21.342% during 2015-2019 after grossing up the ROE of 15.5% with MAT rate as per the above said Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

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

47. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return

on equity, which shall be tried up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the instant transmission asset is given below:-

**Asset-I:**

(₹ in lakh)

Return on Equity	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	10784.77	10926.42	11415.90	11456.40
Additions	141.65	489.48	40.50	0.00
Closing Equity	10926.42	11415.90	11456.40	11456.40
Average Equity	10855.59	11171.16	11436.15	11456.40
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	654.60	2201.33	2253.55	2257.54

**Asset-II:**

(₹ in lakh)

Return on Equity	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	16842.47	17124.07	18563.89	18985.39
Additions	281.60	1439.82	421.50	0.00
Closing Equity	17124.07	18563.89	18985.39	18985.39
Average Equity	16983.27	17843.98	18774.64	18985.39
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	1225.27	3516.24	3699.63	3741.16

**Asset-III:**

(₹ in lakh)

Return on Equity	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	4950.27	5029.14	5399.71	5468.85
Additions	78.87	370.57	69.14	0.00
Closing Equity	5029.14	5399.71	5468.85	5468.85
Average Equity	4989.71	5214.42	5434.28	5468.85
Return on Equity (Base Rate) (%)	15.500	15.500	15.500	15.500
MAT Rate for respective year (%)	21.342	21.342	21.342	21.342
Rate of Return on Equity (%)	19.705	19.705	19.705	19.705
Return on Equity	300.88	1027.53	1070.85	1077.66



## **Interest on Loan (“IoL”)**

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

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

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

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

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

49. We have considered the weighted average rate of IOL on the basis of rate prevailing as on 1.4.2014. Further, the petitioner has prayed to allow it to bill and adjust impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period, if any from the respondents. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The petitioner’s prayer to bill and adjust the impact on interest on loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period from the respondents will be considered at the time of truing up. The details of weighted average rate of interest are placed at Annexure-I and the IOL has been worked out as follows:-

### **Asset-I:**

(₹ in lakh)

<b>Interest on Loan</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Normative Loan	27407.30	27737.81	28879.93	28974.43
Cumulative Repayment upto Previous Year	0.00	618.47	2694.31	4816.25
Net Loan-Opening	27407.30	27119.34	26185.61	24158.17
Additions	330.51	1142.11	94.50	0.00
Repayment during the year	618.47	2075.84	2121.94	2125.51
Net Loan-Closing	27119.34	26185.61	24158.17	22032.66
Average Loan	27263.32	26652.48	25171.89	23095.42



Interest on Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Weighted Average Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
Interest on Loan	151.00	482.40	455.61	418.02

#### Asset-II:

(₹ in lakh)

Interest on Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross Normative Loan	39299.09	39956.17	43315.74	44299.24
Cumulative Repayment upto Previous Year	0.00	1068.79	4130.93	7346.87
Net Loan-Opening	39299.09	38887.38	39184.82	36952.37
Additions	657.08	3359.57	983.50	0.00
Repayment during the year	1068.79	3062.14	3215.95	3251.10
Net Loan-Closing	38887.38	39184.82	36952.37	33701.27
Average Loan	39093.24	39036.10	38068.59	35326.82
Weighted Average Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
Interest on Loan	259.06	706.55	689.03	639.41

#### Asset-III:

(₹ in lakh)

Interest on Loan	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross Normative Loan	11557.49	11741.52	12606.18	12767.51
Cumulative Repayment upto Previous Year	0.00	268.53	1183.82	2135.38
Net Loan-Opening	11557.49	11473.00	11422.36	10632.13
Additions	184.03	864.65	161.33	0.00
Repayment during the year	268.53	915.29	951.56	956.92
Net Loan-Closing	11473.00	11422.36	10632.13	9675.21
Average Loan	11515.24	11447.68	11027.24	10153.67
Weighted Average Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
Interest on Loan	63.78	207.20	199.59	183.78

#### Depreciation

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

"27. Depreciation:



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

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

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

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

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

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

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

52. The depreciation has been worked out considering the admitted capital cost as on COD and the additional capital expenditure admitted during 2014-19 period. The weighted average useful life of the asset has been considered as 29 years in accordance with the above regulation. The detailed calculations for depreciation for the transmission asset are worked out and allowed as follows:-

**Asset-I:**

(₹ in lakh)

Depreciation	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	38192.07	38664.23	40295.82	40430.82
Additional Capitalization	472.16	1631.59	135.00	0.00
Closing Gross Block	38664.23	40295.82	40430.82	40430.82
Average Gross Block	38428.15	39480.03	40363.32	40430.82
Rate of Depreciation (%)	5.26	5.26	5.26	5.26
Balance Useful life of the asset	34	33	32	31
Elapsed life	0	1	2	3
Remaining Depreciable Value	0.00	34701.08	32685.99	30564.05
Depreciation during the year	618.47	2075.84	2121.94	2125.51
Cumulative depreciation (incl. of AAD)	618.47	2694.31	4816.25	6941.76

**Asset-II:**

(₹ in lakh)

Depreciation	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	56141.56	57080.24	61879.63	63284.63
Additional Capitalization	938.68	4799.39	1405.00	0.00
Closing Gross Block	57080.24	61879.63	63284.63	63284.63
Average Gross Block	56610.90	59479.94	62582.13	63284.63
Rate of Depreciation (%)	5.16	5.15	5.14	5.14
Balance Useful life of the asset	33	32	31	30
Elapsed life	0	1	2	3
Remaining Depreciable Value	0.00	52040.75	49610.86	46394.92
Depreciation during the year	1068.79	3062.14	3215.95	3251.10
Cumulative depreciation (incl. of AAD)	1068.79	4130.93	7346.87	10597.97

**Asset-III:**

(₹ in lakh)

Depreciation	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	16507.76	16770.66	18005.88	18236.35
Additional Capitalization	262.90	1235.22	230.47	0.00
Closing Gross Block	16770.66	18005.88	18236.35	18236.35
Average Gross Block	16639.21	17388.27	18121.12	18236.35
Rate of Depreciation (%)	5.27	5.26	5.25	5.25
Balance Useful life of the asset	34	33	32	31
Elapsed life	0	1	2	3
Remaining Depreciable Value	0.00	15262.61	14451.04	13499.47
Depreciation during the year	268.53	915.29	951.56	956.92
Cumulative depreciation (incl. of AAD)	268.53	1183.82	2135.38	3092.30



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

53. The petitioner has claimed O&M Expenses as specified in sub-clause (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations. The details of O&M Expenses allowed are given hereunder:-

#### **Asset-I:**

<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>400 kV GIS bay</b>				
No.	2	2	2	2
Norms (₹ lakh/bay)	53.25	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	106.50	110.04	113.68	117.46
<b>400 kV bay</b>				
No.	2	2	2	2
Norms (₹ lakh/bay)	62.3	64.37	66.51	68.71
Total O&M Expenses (₹ lakh)	124.60	128.74	133.02	137.42
<b>D/C bundled (4 or more sub-con.)</b>				
KMs	176.51	176.51	176.51	176.51
Norms (₹ lakh/KM)	1.097	1.133	1.171	1.21
Total O&M Expenses (₹ lakh)	193.63	199.99	206.69	213.58
<b>Total</b>	<b>129.97</b>	<b>438.77</b>	<b>453.39</b>	<b>468.46</b>

#### **Asset-II:**

<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>400 kV GIS bay</b>				
No.	3	3	3	3
Norms (₹ lakh/bay)	53.25	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	159.75	165.06	170.52	176.19
<b>S/C (Bundle Conductor- 6 or more sub-c)</b>				
KMs	189.25	189.25	189.25	189.25
Norms (₹ lakh/KM)	0.731	0.755	0.78	0.806
Total O&M Expenses (₹ lakh)	138.34	142.88	147.62	152.54
<b>Total</b>	<b>109.14</b>	<b>307.94</b>	<b>318.14</b>	<b>328.73</b>

**Asset-III:**

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>400 kV GIS bay</b>				
No.	2	2	2	2
Norms (₹ lakh/bay)	53.25	55.02	56.84	58.73
Total O&M Expenses (₹ lakh)	106.50	110.04	113.68	117.46
<b>S/C (Bundle Conductor- 6 or more sub-c)</b>				
KMs	189.25	189.25	189.25	189.25
Norms (₹ lakh/KM)	0.731	0.755	0.78	0.806
Total O&M Expenses (₹ lakh)	138.34	142.88	147.62	152.54
<b>Total</b>	<b>74.92</b>	<b>252.92</b>	<b>261.30</b>	<b>270.00</b>

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

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

## Interest on Working Capital

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

### **“28. Interest on Working Capital**

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

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

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

### **Asset-I:**

(₹ in lakh)

Interest on Working Capital	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O & M expenses	35.39	36.56	37.78	39.04
Maintenance Spares	63.71	65.81	68.01	70.27
Receivables	868.16	888.69	903.46	900.99
Total	967.27	991.07	1009.25	1010.29
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on Working Capital	39.96	133.79	136.25	136.39

### **Asset-II:**

(₹ in lakh)

Interest on Working Capital	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O & M expenses	24.84	25.66	26.51	27.39
Maintenance Spares	44.71	46.19	47.72	49.31
Receivables	1241.42	1296.26	1352.56	1359.04
Total	1310.97	1368.11	1426.79	1435.74
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on Working Capital	64.80	184.70	192.62	193.82

**Asset-III:**

(₹ in lakh)

Interest on Working Capital	2015-16 (pro-rata)	2016-17	2017-18	2018-19
O & M expenses	20.40	21.08	21.77	22.50
Maintenance Spares	36.73	37.94	39.19	40.50
Receivables	395.86	411.07	424.81	425.72
Total	452.99	470.08	485.78	488.72
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on Working Capital	18.71	63.46	65.58	65.98

**ANNUAL FIXED CHARGES FOR THE 2014-19 TARIFF PERIOD**

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

**Asset-I:**

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Depreciation</b>				
Opening Gross Block	38192.07	38664.23	40295.82	40430.82
Additional Capitalisation	472.16	1631.59	135.00	0.00
Closing Gross Block	38664.23	40295.82	40430.82	40430.82
Average Gross Block	38428.15	39480.03	40363.32	40430.82
Rate of Depreciation	5.26	5.26	5.26	5.26
Depreciable Value	34585.34	35319.55	35380.30	35380.30
Balance Useful life of the asset	34	33	32	31
Elapsed Life	0	1	2	3
Remaining Depreciable Value	0.00	34701.08	32685.99	30564.05
Depreciation	618.47	2075.84	2121.94	2125.51
Cumulative depreciation	618.47	2694.31	4816.25	6941.76
<b>Interest on Loan</b>				
Gross Normative Loan	27407.30	27737.81	28879.93	28974.43
Cumulative Repayment upto Previous Year	0.00	618.47	2694.31	4816.25
Net Loan-Opening	27407.30	27119.34	26185.61	24158.17
Additions	330.51	1142.11	94.50	0.00
Repayment during the year	618.47	2075.84	2121.94	2125.51
Net Loan-Closing	27119.34	26185.61	24158.17	22032.66
Average Loan	27263.32	26652.48	25171.89	23095.42
Weighted Average Rate of Interest on Loan	1.8100	1.8100	1.8100	1.8100
Interest	151.00	482.40	455.61	418.02



Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Return on Equity</b>				
Opening Equity	10784.77	10926.42	11415.90	11456.40
Additions	141.65	489.48	40.50	0.00
Closing Equity	10926.42	11415.90	11456.40	11456.40
Average Equity	10855.59	11171.16	11436.15	11456.40
Return on Equity (Base Rate )	15.500	15.500	15.500	15.500
MAT rate for the respective year	21.342	21.342	21.342	21.342
Rate of Return on Equity	19.705	19.705	19.705	19.705
Return on Equity	654.60	2201.33	2253.55	2257.54
<b>Interest on Working Capital</b>				
O & M expenses	35.39	36.56	37.78	39.04
Maintenance Spares	63.71	65.81	68.01	70.27
Receivables	868.16	888.69	903.46	900.99
Total	967.27	991.07	1009.25	1010.29
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on working capital	39.96	133.79	136.25	136.39
<b>Annual Transmission Charges</b>				
Depreciation	618.47	2075.84	2121.94	2125.51
Interest on Loan	151.00	482.40	455.61	418.02
Return on Equity	654.60	2201.33	2253.55	2257.54
Interest on Working Capital	39.96	133.79	136.25	136.39
O & M Expenses	129.97	438.77	453.39	468.46
<b>Total</b>	<b>1594.01</b>	<b>5332.13</b>	<b>5420.74</b>	<b>5405.91</b>

### Asset-II:

(₹ in lakh)

Particulars	2015-16 (pro-rata)	2016-17	2017-18	2018-19
<b>Depreciation</b>				
Opening Gross Block	56141.56	57080.24	61879.63	63284.63
Additional Capitalisation	938.68	4799.39	1405.00	0.00
Closing Gross Block	57080.24	61879.63	63284.63	63284.63
Average Gross Block	56610.90	59479.94	62582.13	63284.63
Rate of Depreciation	5.16	5.15	5.14	5.14
Depreciable Value	50949.81	53109.54	53741.79	53741.79
Balance Useful life of the asset	33	32	31	30
Elapsed Life	0	1	2	3
Remaining Depreciable Value	0.00	52040.75	49610.86	46394.92
Depreciation	1068.79	3062.14	3215.95	3251.10
Cumulative depreciation	1068.79	4130.93	7346.87	10597.97





<b>Particulars</b>	<b>2015-16 (pro-rata)</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Interest on Loan</b>				
Gross Normative Loan	39299.09	39956.17	43315.74	44299.24
Cumulative Repayment upto Previous Year	0.00	1068.79	4130.93	7346.87
Net Loan-Opening	39299.09	38887.38	39184.82	36952.37
Additions	657.08	3359.57	983.50	0.00
Repayment during the year	1068.79	3062.14	3215.95	3251.10
Net Loan-Closing	38887.38	39184.82	36952.37	33701.27
Average Loan	39093.24	39036.10	38068.59	35326.82
Weighted Average Rate of Interest on Loan	1.8100	1.8100	1.8100	1.8100
Interest	259.06	706.55	689.03	639.41
<b>Return on Equity</b>				
Opening Equity	16842.47	17124.07	18563.89	18985.39
Additions	281.60	1439.82	421.50	0.00
Closing Equity	17124.07	18563.89	18985.39	18985.39
Average Equity	16983.27	17843.98	18774.64	18985.39
Return on Equity (Base Rate )	15.500	15.500	15.500	15.500
MAT rate for the respective year	21.342	21.342	21.342	21.342
Rate of Return on Equity	19.705	19.705	19.705	19.705
Return on Equity	1225.27	3516.24	3699.63	3741.16
<b>Interest on Working Capital</b>				
O & M expenses	24.84	25.66	26.51	27.39
Maintenance Spares	44.71	46.19	47.72	49.31
Receivables	1241.42	1296.26	1352.56	1359.04
Total	1310.97	1368.11	1426.79	1435.74
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on working capital	64.80	184.70	192.62	193.82
<b>Annual Transmission Charges</b>				
Depreciation	1068.79	3062.14	3215.95	3251.10
Interest on Loan	259.06	706.55	689.03	639.41
Return on Equity	1225.27	3516.24	3699.63	3741.16
Interest on Working Capital	64.80	184.70	192.62	193.82
O & M Expenses	109.14	307.94	318.14	328.73
<b>Total</b>	<b>2727.05</b>	<b>7777.56</b>	<b>8115.36</b>	<b>8154.22</b>

**Asset-III:**



(₹ in lakh)

<b>Particulars</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Depreciation</b>				
Opening Gross Block	16507.76	16770.66	18005.88	18236.35
Additional Capitalisation	262.90	1235.22	230.47	0.00
Closing Gross Block	16770.66	18005.88	18236.35	18236.35
Average Gross Block	16639.21	17388.27	18121.12	18236.35
Rate of Depreciation	5.27	5.26	5.25	5.25
Depreciable Value	14975.29	15531.14	15634.85	15634.85
Balance Useful life of the asset	34	33	32	31
Elapsed Life	0	1	2	3
Remaining Depreciable Value	0.00	15262.61	14451.04	13499.47
Depreciation	268.53	915.29	951.56	956.92
Cumulative depreciation	268.53	1183.82	2135.38	3092.30
<b>Interest on Loan</b>				
Gross Normative Loan	11557.49	11741.52	12606.18	12767.51
Cumulative Repayment upto Previous Year	0.00	268.53	1183.82	2135.38
Net Loan-Opening	11557.49	11473.00	11422.36	10632.13
Additions	184.03	864.65	161.33	0.00
Repayment during the year	268.53	915.29	951.56	956.92
Net Loan-Closing	11473.00	11422.36	10632.13	9675.21
Average Loan	11515.24	11447.68	11027.24	10153.67
Weighted Average Rate of Interest on Loan	1.8100	1.8100	1.8100	1.8100
Interest	63.78	207.20	199.59	183.78
<b>Return on Equity</b>				
Opening Equity	4950.27	5029.14	5399.71	5468.85
Additions	78.87	370.57	69.14	0.00
Closing Equity	5029.14	5399.71	5468.85	5468.85
Average Equity	4989.71	5214.42	5434.28	5468.85
Return on Equity (Base Rate )	15.500	15.500	15.500	15.500
MAT rate for the respective year	21.342	21.342	21.342	21.342
Rate of Return on Equity	19.705	19.705	19.705	19.705
Return on Equity	300.88	1027.53	1070.85	1077.66
<b>Interest on Working Capital</b>				
O & M expenses	20.40	21.08	21.77	22.50
Maintenance Spares	36.73	37.94	39.19	40.50



<b>Particulars</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Receivables	395.86	411.07	424.81	425.72
Total	452.99	470.08	485.78	488.72
Rate of Interest (%)	13.50	13.50	13.50	13.50
Interest on working capital	18.71	63.46	65.58	65.98
<b>Annual Transmission Charges</b>				
Depreciation	268.53	915.29	951.56	956.92
Interest on Loan	63.78	207.20	199.59	183.78
Return on Equity	300.88	1027.53	1070.85	1077.66
Interest on Working Capital	18.71	63.46	65.58	65.98
O & M Expenses	74.92	252.92	261.30	270.00
<b>Total</b>	<b>726.83</b>	<b>2466.40</b>	<b>2548.88</b>	<b>2554.34</b>

### **Filing Fee and the Publication Expenses**

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

### **Licence Fee & RLDC Fees and Charges**

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

### **Service Tax**

61. The petitioner has prayed for reimbursement of service tax if it is subjected to such tax in future. TANGEDCO has objected to the claim made by the petitioner. We are of the view that the petitioner's prayer is premature.

### **Foreign Exchange Rate Variation**

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

### **Sharing of Transmission Charges**

62. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time as provided in Regulation 43 of the 2014 Tariff Regulations.

63. This order disposes of Petition No. 61/TT/2015.

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

Sd/-  
**(A.S. Bakshi)**  
Member

## Asset-I:

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

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
Loan under IBRD-V Loan No. 7787-IN	1.8100	27407.30	0.00	27407.30
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	142.13	142.13
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	269.16	269.16
<b>Total</b>		<b>27407.30</b>	<b>411.29</b>	<b>27818.59</b>

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

(₹ in lakh)

	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	27407.30	27818.59	27818.59	27818.59
Cumulative Repayments of Loans upto Previous Year	994.89	1518.90	2545.40	3583.03
<b>Net Loans Opening</b>	<b>26412.41</b>	<b>26299.69</b>	<b>25273.19</b>	<b>24235.56</b>
Add: Draw(s) during the Year	411.29	0.00	0.00	0.00
Less: Repayments of Loan during the year	504.15	1026.50	1037.63	1043.19
<b>Net Closing Loan</b>	<b>26319.55</b>	<b>25273.19</b>	<b>24235.56</b>	<b>23192.37</b>
Average Net Loan	26365.98	25786.44	24754.38	23713.97
Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
<b>Interest on Loan</b>	<b>477.22</b>	<b>466.73</b>	<b>448.05</b>	<b>429.22</b>

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

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
Loan under IBRD-V Loan No. 7787-IN	1.8100	39466.29	0.00	39466.29
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	174.30	174.30
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	689.70	
<b>Total</b>		<b>39466.29</b>	<b>864.00</b>	<b>39640.59</b>

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

(₹ in lakh)

	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	39466.29	40330.29	40330.29	40330.29
Cumulative Repayments of Loans upto Previous Year	2154.86	2202.04	3690.23	5194.55
<b>Net Loans Opening</b>	<b>37311.43</b>	<b>38128.25</b>	<b>36640.06</b>	<b>35135.74</b>
Add: Draw(s) during the Year	864.00	0.00	0.00	0.00
Less: Repayments of Loan during the year	47.18	1488.19	1504.32	1512.39
<b>Net Closing Loan</b>	<b>38128.25</b>	<b>36640.06</b>	<b>35135.74</b>	<b>33623.35</b>
Average Net Loan	37719.84	37384.16	35887.90	34379.55
Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
<b>Interest on Loan</b>	<b>682.73</b>	<b>676.65</b>	<b>649.57</b>	<b>622.27</b>

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

(₹ in lakh)

Particulars	Interest Rate (%)	Loan deployed as on 1.4.2015	Additions during the tariff period	Total
Loan under IBRD-V Loan No. 7787-IN	1.8100	11569.69	0.00	11569.69
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	60.02	60.02
Loan under IBRD-V Loan No. 7787-IN	1.8100	0.00	177.17	177.17
<b>Total</b>		<b>11569.69</b>	<b>237.19</b>	<b>11806.88</b>

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

(₹ in lakh)

	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	11569.69	11806.88	11806.88	11806.88
Cumulative Repayments of Loans upto Previous Year	419.98	644.66	1080.33	1520.73
<b>Net Loans Opening</b>	<b>11149.71</b>	<b>11162.22</b>	<b>10726.55</b>	<b>10286.15</b>
Add: Draw(s) during the Year	237.19	0.00	0.00	0.00
Less: Repayments of Loan during the year	224.68	435.67	440.40	442.75
<b>Net Closing Loan</b>	<b>11162.22</b>	<b>10726.55</b>	<b>10286.15</b>	<b>9843.40</b>
Average Net Loan	11155.97	10944.39	10506.35	10064.78
Rate of Interest on Loan (%)	1.8100	1.8100	1.8100	1.8100
<b>Interest on Loan</b>	<b>201.92</b>	<b>198.09</b>	<b>190.16</b>	<b>182.17</b>

