CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 45/TT/2017

Coram:

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

Date of Order : 19.07.2018

In the matter of:

Petition for determination of transmission tariff from DOCO to 31.3.2019 for Transmission Asset "(a) LILO of Gazuwaka - Vijayawada 400 kV S/C line at Vemagiri Pooling Station along with associated bays and (b) Establishment of 765/400 kV GIS Pooling Station at Vemagiri with 2X1500MVA 765/400 kV Transformers, 2nos 240 MVAR 765kV & 1 no. 80 MVAR 400 kV Bus Reactors at Vemagiri and 2nos 765 kV bays along with 1 no. 240 MVAR switchable line reactor each at Vemagiri & Srikakulam pooling stations each for both circuits of Srikakulam PS - Vemagiri PS 765 kV D/C line under "Sub-Station Works Associated with System Strengthening in Southern Region for Import of Power from Eastern Region" in Southern Region 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.

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.
   Kaveri Bhawan, K. G. Road
   Bangalore—560 009.
2. Transmission Corporation of Andhra Pradesh Ltd.
   Vidyut Soudha, Khairatabad,
   Hyderabad-500 082.
3. Kerala State Electricity Boards,

Vydyuthi Bhavanam,
Thiruvananthapuram-695 004.

4. Tamil Nadu Electricity Board (TNEB)
NPKRR Maaligai, 800, Anna Salai,
Cennai-600 002.

5. Electricity Department
Government of Goa
Vidyuti Bhawan, Panaji
Goa-403001.

6. Electricity Department,
Government of Pondicherry,
Pondicherry-605 001.

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

8. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL)
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta,
Tirupati-517 501, Chittoor District, Andhra Pradesh.

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

10. Northern Power Distribution Company of Andhra Pradesh Limited (APNPDCL)
NIT Petrol Pump
Chaitanyapuri, Kazipet, WARANGAL – 506 004
Andhra Pradesh

11. Bangalore Electricity Supply Company Ltd. (BESCOM)
Corporate Office, K. R. Circle,
Bangalore-560 009.

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

13. Hubli Electricity Supply Company Ltd. (HESCOM),
P.B. Road, Nava Nagar Hubli,
Karnataka.

14. Mangalore Electricity Supply Company Ltd. (MESCOM)
Paradingm Plaza, A.B. Shetty Circle,
Mangalore-575 001.

15. Chamundeshwari Electricity Supply Corp. Ltd.
(CESC),
Corporate Office, 927, L. J. Avenue, Ground Floor
New Kantharaj Urs Road,
Saraswathi Puram, Mysore-570 009.

16. Vizag Transmission Limited, GM I/C (TBCB)
Powergrid Corporation of India Ltd,
Saudamini, Plot No-2 Sector-29,
Gurgaon, 12200, Haryana

17. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad, 500082 .....**Respondents**

For Petitioner : Shri S.K. Venkatesan, PGCIL
Shri Rakesh Prasad, PGCIL
Shri S.S.Raju, PGCIL
Shri Anil Kumar Meena, PGCIL
Shri Vivek Kumar Singh, PGCIL
Shri B.Dash, PGCIL
Shri Aryaman Saxena, PGCIL

For Respondents : Shri Vallinayagam, Advocate, TANGEDCO

ORDER

The instant petition has been filed by Power Grid Corporation of India Ltd. (PGCIL) for approval of the transmission tariff for Asset- 1(A) (a): “LILO of Gazuwaka - Vijayawada 400 kV S/C line at Vemagiri Pooling Station along with associated bays Asset- 1(A) (a): Establishment of 765/400kV GIS Pooling Station at Vemagiri with 1X1500MVA 765/400 kV Transformer, 2nos 240 MVAR 765 kV & 1 no. 80 MVAR 400 kV Bus Reactors at Vemagiri and 2nos 765 kV bays along with 1 no. 240 MVAR switchable line reactor each at Vemagiri & Srikakulam pooling stations each for both circuits of Srikakulam PS - Vemagiri PS 765 kV D/C line and Asset- 1(A) (a): 1X1500 MVA, 765/400 kV ICT-II alongwith associated bays and equipment at Vemagiri (hereinafter referred to as transmission assets) under “Sub-Station Works Associated with System Strengthening in Southern Region for Import of Power from Eastern Region”(hereinafter referred to as transmission assets) for the 2014-19 tariff block, in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter "the 2014 Tariff Regulations").

2. The petitioner has made the following prayers:-

(i) “Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition, as per para –9.2 above.

(ii) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation projected to be incurred.

(iii) Tariff may be allowed on the estimated completion cost, the completion cost for the assets covered under instant Petition are within the overall project cost.

(iv) Approve the Additional ROE as claimed in the Petition.

(v) Allow the Petitioner to approach Hon’ble Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.

(vi) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided under clause 25 of the Tariff regulations 2014.

(vii) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure (if any) in relation to the filing of petition.

(viii) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

(ix) Allow the petitioner 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.

(x) Allow the Petitioner to bill and recover Service tax on Transmission Charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list at any time in future. Further, any taxes and duties including cess etc. imposed by any statutory/Govt/municipal authorities shall be allowed to be recovered from the beneficiaries.

(xi) Allow tariff up to 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.

(xii) Allow Reimbursement of Tax if any on account of the proposed implementation of GST and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice."

3. The Investment Approval for the transmission project was accorded by the Board of Directors of the petitioner (on 11.11.2014) vide Memorandum No. C/CP/Import ER to SR dated 18.11.2014, at an estimated cost of Rs.97242.00 lakh including an IDC of Rs 5972.00 lakh (based on August, 2014 price level). The project was scheduled to be commissioned within 36 months from the date of Investment Approval. Therefore, the scheduled date of commissioning of the transmission system was 11.11.2017.

4. The Revised Cost Estimate (RCE) for the transmission system was accorded by the Board of Directors of the petitioner vide the Memorandum no. C/CP/PA1617-09-0P-RCE004 dated 21.09.2016 at RCE of Rs.116930 lakh including IDC of Rs.8145 lakh (based on February, 2016 price level).

5. The system requirement was discussed and agreed in the 36th & 37th SCM of Southern Region Constituents held on 4.9.2013 & 31.7.2014 respectively, which further has been discussed and ratified by SRPC in the 23rd SRPC meetings held on 26.10.2013.

6. The scope of work covered under the transmission system "Sub-Station Works

Associated with System Strengthening in Southern Region for Import of Power from Eastern Region" is as follows:-

Transmission Line

(i) LILO of Gazuwaka-Vijayawada 400 kV S/C Line at Vemagiri Pooling Station

Sub Station

(ii) Establishment of 765/400 kV GIS Pooling Station at Vemagiri with 2X1500 MVA 765/400 kV transformers

(iii) 2 nos 765 kV bays each at Vemagiri Pooling Station and Srikakulam Pooling Station for terminating Srikakulam PP - Vemagiri - II Pooling Station 765 kV D/C line being implemented under Tariff Based Competitive Bidding

(iv) 2 nos 400 kV bays each at Khammam (existing) and Nagarjunsagar for terminating Khammam - Nagarjunsagar 400 kV D/C line being implemented under Tariff Based Competitive Bidding

Reactive Compensation

(i) 2 nos 240 MVAR, 765 kV Bus Reactors at Vemagiri Pooling Station

(ii) 1 no 80 MVAR, 400 kV Bus Reactor at Vemagiri Pooling Station

(iii) 1 no 240 MVAR switchable line reactor at Vemagiri PS and Srikakulam PS each for both circuits of Srikakulam PP - Vemagiri - II PS 765kV D/C line

7. The details of the other assets covered in the instant transmission system along with the petition number is given below:-

<table>
<tr><th>Asset</th><th>COD</th><th>Petition No.</th><th>Date of order</th></tr>
<tr><td>2 nos 400 kV bays each at Khammam (existing) and Nagarjunsagar for terminating Khammam - Nagarjunsagar 400 kV D/C line being implemented under TBCB</td><td>04.01.2016</td><td>270/TT/2015</td><td>23.05.2016</td></tr>
<tr><td>Asset-I (A) (a) LILO of Gazuwaka - Vijayawada 400 kV S/C line at Vemagiri PS along with associated bays</td><td>01.02.2017</td><td colspan="2" rowspan="3">Covered under instant petition</td></tr>
<tr><td>Asset-I (A) (b) Establishment of 765/400kV GIS Pooling Station at Vemagiri with 1x1500 MVA 765/400 kV Transformers, 2nos 240 MVAR 765 kV & 1 no. 80 MVAR 400 kV Bus Reactors at Vemagiri and 2nos 765 kV bays along with 1 no. 240 MVAR switchable line reactor each at Vemagiri & Srikakulam PS each for both circuits of Srikakulam PS - Vemagiri PS 765 kV D/C line</td><td>01.02.2017</td></tr>
<tr><td>Asset-I (B) 1x1500 MVA, 765/400 kV ICT-II along with associated bays and Equipments at Vemagiri PS.</td><td>31.03.2017</td></tr>
</table>

8. Annual Fixed Cost was granted for the instant transmission asset vide order dated 6.7.2017 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges.

9. The petitioner has claimed the following transmission charges for the instant assets:-

Asset-I (A)(a) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	32.02	217.94	236.92
Interest on Loan	33.04	215.06	216.67
Return on Equity	36.60	249.21	270.96
Interest on working capital	3.30	21.59	22.73
O & M Expenses	20.70	128.34	132.60
Total	**125.66**	**832.14**	**879.88**

Asset-I (A)(b) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	599.61	4202.97	4637.61
Interest on Loan	689.93	4642.73	4785.84
Return on Equity	741.99	5193.41	5725.58
Interest on working capital	53.89	365.56	391.73
O & M Expenses	183.56	1137.89	1175.66
Total	**2268.98**	**15542.56**	**16716.42**

Asset-I (B) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	0.54	231.03	274.05
Interest on Loan	0.58	238.45	264.02
Return on Equity	0.62	265.73	315.20
Interest on working capital	0.06	23.87	26.71
O & M Expenses	0.39	149.95	154.93
Total	**2.19**	**909.03**	**1034.91**

10. The details of the Interest on Working Capital claimed by the petitioner for the instant assets are as under:-

Asset-I (A)(a) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	18.63	19.25	19.89
O & M Expenses	10.35	10.70	11.05
Receivables	125.66	138.69	146.65
Total	**154.64**	**168.64**	**177.59**
Rate of Interest	12.80%	12.80%	12.80%
Interest	**3.30**	**21.59**	**22.73**

Asset-I (A)(b) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	165.20	170.68	176.35
O & M Expenses	91.78	94.82	97.97
Receivables	2268.98	2590.43	2786.07
Total	**2525.97**	**2855.93**	**3060.39**
Rate of Interest	12.80%	12.80%	12.80%
Interest	**53.89**	**365.56**	**391.73**

Asset-I (B) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	21.76	22.49	23.24
O & M Expenses	12.09	12.50	12.91
Receivables	135.57	151.51	172.48
Total	**169.42**	**186.49**	**208.63**
Rate of Interest	12.80%	12.80%	12.80%
Interest	**0.06**	**23.87**	**26.71**

11. The petitioner has served 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 public in response to the notices published by the petitioner under Section 64 of the Act. Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO), Respondent No. 4, has filed reply vide affidavit dated 26.4.2017 and 5.2.2018. The petitioner has filed its rejoinder to the reply vide affidavit dated 10.1.2018 and 23.2.2018. The issues raised by TANGEDCO and the clarifications given by the petitioner are dealt in relevant paragraphs of the order. The hearing in this matter was held on 8.5.2018.

12. This order has been issued after considering the petitioner's affidavits dated 15.5.2017, 26.5.2017, 21.6.2017, 16.8.2017, 29.8.2017, 27.12.2017 and 16.2.2018.

13. Having heard the petitioner and perused the material on record, we proceed to dispose of the petition.

<u>Date of Commercial Operation ("COD")</u>

14. Clause (3) of Regulation 4 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"

15. The petitioner has submitted that the COD of the instant assets: Asset-I(A)(a), Asset-I(A)(b) and Asset-I(B) was 1.2.2017, 1.2.2017 and 31.3.2017 respectively. The petitioner has submitted RLDC trial run operation certificate dated 27.2.2017 and 15.5.2017, CMD certificate as required under grid code, CEA Certificate dated 22.12.2016 and 27.12.2016 under Regulation 43 of CEA (Measures Related to Safety & Electricity Supply) Regulations, 2010 and the self-declaration COD certificate dated 31.1.2017, in respect of the claim of commercial operation date.

16. Taking into consideration the RLDC certificate, CEA certificate and CMD certificate, the COD of the Asset-I(A)(a), Asset-I(A)(b), Asset-I(B) is approved as 1.2.2017, 1.2.2017, 31.3.2017 respectively and considered for the purpose of tariff computation. The tariff is worked out from COD to 31.3.2019.

Capital Cost

17. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

'(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 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."

18. The details of apportioned approved cost, capital cost as on COD and incurred/projected additional capital expenditure and the estimated completion cost of the instant assets are as follows:-

(Rs. in lakh)

Approved apportioned cost	Revised apportioned cost as per RCE	Capital cost as on COD	Estimated additional capital expenditure			Total estimated completion cost
			2016-17	2017-18	2018-19	
3763.53	5628.59	3601.21	258.18	602.41	0.00	4461.80
84880.46	102284.39	71473.30	6842.24	15965.22	0.00	94280.76
6698.17	6551.58	3944.84	0.00	1025.68	439.58	5410.10
95342.16	**114464.56**	**79019.35**	**7100.42**	**17593.31**	**439.58**	**104152.66**

Cost over-run

19. The FR approved apportioned cost of the instant asset is 95342.16 lakh and the

total estimated completion cost is Rs.104152.66 lakh and hence there is a cost over-run of Rs. 8810.50 lakh in comparison to FR cost. The petitioner has submitted the following reasons for cost over-run:-

a) The increase in cost of about Rs.35.00 lakh is on account of increased compensation paid for crop, tree, forest clearance and PTCC.

b) Impact of foreign currency variation led to increase in the completion cost of the project by approximately Rs.4794 lakh

c) The increase in line length from 18.10 kms to 18.80 km, angle towers, hardware fittings, insulators etc, which leds to increase the cost by Rs.882 lakh

d) The increase in cost of about Rs.8055 lakh is on account of increased civil works for Foundation for structure, Fire Water Pump house, LT Switchgear room Road & drainage.

e) The increase in cost of about Rs.2792 lakh is on account of increased taxes and duties.

f) Reduction of about Rs.8750 lakhs due to early commission of the instant assets.

The petitioner has submitted that the overall cost over-run is Rs.8810.50 lakh which is only 9.24% of the total approved apportioned cost.

20. TANGEDCO has submitted that petitioner has not followed prudent methods of cost estimation and is very casual in its approach. The petitioner has not followed the procedures and guidelines of the GoI “Manual on Policies and procedure for purchase of goods” in awarding contracts under competitive biddings. The petitioner has not even furnished the details of the basis of arriving at the compensation, the claims made, paid

so far and pending to be paid. TANGEDCO requests to direct the petitioner to furnish the details in respect of the custom duty. TANGEDCO submitted that no foreign component is involved in the capital investment either in debt or in equity, also there is no provision in Regulations for claiming FERV under contractual obligations. Regulation 50 of the 2014 Tariff Regulations provides that foreign exchange exposure in respect of the interest on foreign currency loan and repayment of foreign loan acquired for the generating station or the transmission system may be hedged by the licensee. The contractual obligations cannot be directly passed on to the beneficiaries. The cost towards foundation of structures is escalated by 508.60 % for Rs. 8054.97 lakh against the original cost of Rs.1323.50 lakh. TANGEDCO also submitted that the cost of initial spares including the undischarged liability is Rs. 4043.96 lakh against the approved cost of Rs.1723.19 lakh. There is a cost escalation of 134.67% amounting to Rs. 2320.77 lakh. TANGEDCO requests to restrict the spares to the original approved cost and direct the petitioner to furnish the details of spares procured so far and the items to be procured within the cut-off date. The petitioner has not followed prudent bench mark costing and the cost estimation is not the true representation of actual costs. Further, TANGEDCO submitted that the auxiliary bus module for spare transformer and spare line/reactor which are not in beneficial use should be excluded or removed from the capital cost of the existing and new projects.

21. The petitioner, in response, vide rejoinder dated 10.01.2018 has submitted that the manual "Manual on Policies and Procedure for purchase of goods" is not applicable in the present case and petitioner has stated the following:-

> “The “Manual on Policies and Procedure for purchase of goods, works and consultancy" are generic guidelines issued by the Department of Expenditure, Ministry of Finance in the General Financial Rules ('GFR') 2005 which regulate public procurement by

'Ministries' and 'Departments' of Union Government.

In the absence of an overarching procurement law, various departments and other Public organization have developed, under the broad framework of GFR, their own procurement manuals and procedures which guide them in conducting procurement activities in their respective fields. POWERGRID being a Nav-Ratna company carries out procurement following its own internally developed procedures viz Works & Procurement Policy and Procedure (WPPP) which was adopted in 2001 and subsequently, Works and Procurement Policy - Volume -I, November 2016.

The prices of goods and labour are highly variable in long duration contracts due to fluctuation in the currency market. It is, therefore, an international best practice to provide Price Variation on account of variation in cost of raw materials & labour to have more realistic competitive bids and execution of contracts on equitable and just manner.

The Price Variation in the instant case is attributable to inflationary trends prevalent during the execution of project and also market forces prevailing at the time of bidding process of various packages.

Further, for the purpose of price adjustment for different components of its assets, POWERGRID follows standard price variation formulae based on indices for various materials, Wholesale Price Index (WPI), labour and diesel oil etc; which are stipulated by POWERGRID in the Bidding Documents/ Contracts. In case of domestic contract, the indices for various materials are considered as published by Indian Electrical and Electronics manufacturer's Association (IEEMA) or other recognized sources/publication only when IEEMA does not publish such indices. The Wholesale Price Index (WPI) is considered as published by Reserve Bank of India (RBI) and the indices for labour is considered as published/ declared by Labour Bureau, Shimla. Further, the rate of diesel oil is conserved as published by Indian Oil Corporation."

22. The petitioner in its rejoinder has submitted that the major variation in cost is attributable to the following:

a	*Price variation*	*11.90%*
b	*Quantity variation*	*0.08%*
c	*Addition/Deletion*	*0.36%*
d	*Land & Compensation*	*0.25%*
e	*FERV*	*4.93%*
f	*Increase in IDC & IEDC*	*2.72%*

The variation has been incurred from the time of approval of project till award of various contracts (DPR to LOA) based on prices received as per competitive bidding and a variation has been incurred/ likely to be incurred on the basis of PV based on indices as per provision of respective contracts. In regard to PV from DPR to LOA, it is submitted that the Contracts for various packages under this project were awarded to the lowest evaluated and responsive bidder, on the basis of Competitive Bidding by POWERGRID, after publication of NITs in leading newspapers. Thus, the award prices represent the lowest prices available at the time of bidding of various packages. The type of various towers and foundations in the DPR were estimated on the basis of walk-over/preliminary survey. However, during execution of project, there has been increase under the head due to increase in the line length of 400 kV S/C line from 18.10 km to 18.80 km as per site conditions. As regards issue of crop and tree compensation, petitioner has submitted that these are paid based on the rates notified by the departments of horticulture & forest of the Government of A.P. The increase in tree/ crop compensation is due to payment of compensation for diminishing land value due to tower construction as per guidelines issued by Govt. of AP and MOP guidelines dtd. 15.10.2015. The compensation on account of diminishing land value due to tower locations/ structures under the line is Rs. 0.89 Cr which was not factored in the FR as the guidelines were issued in 2015. Further, Vemagiri area is located in East Godavari District of AP and is a very fertile area as it is located on the banks of river Godavari. As a result, the vegetation is dense & the trees under the line corridor were numerous which had been considered on a normative basis in the FR. This resulted in increase of the tree compensation to the tune of Rs. 5.95 Cr. The overall expenditure on account of tree/ crop/ tower location compensation is Rs. 7.85 Cr as compared to Rs 0.98 Cr indicated in FR. Petitioner also submitted the documentary evidence regarding the amount paid with regards to tree and crop compensation and custom duty.

23. As regards FERV, the petitioner has submitted that the landed cost of the equipment includes FERV which is a part of the project cost. The FERV on account of

import of equipments is included in the equipment cost up to the COD as per the accounting policy of the company. The instant project involves foreign packages for GIS equipment. Due to variation in exchange rates for contracts awarded in foreign currency, an increase in liability on account of FERV is Rs. 47.94 Cr (4.93%). The petitioner has submitted the details for Foreign exchange variation statement for the payment made in foreign currency due to contractual obligation. The petitioner also submitted that the initial spares claim for transmission line and GIS Substation are within the norms as per Regulation 13, of the 2014 Tariff Regulation. Further, the petitioner has submitted that the Auxiliary bus module is the integral part of Gas Insulated Substation and the same shall be used for all the part of the ICT/switching reactor installed and charged along with main bus-I & II in totality for substation. Every feeder in substation requires auxiliary supply for operation and feeders shall be connected as and when they come.

24. We have considered the submissions of the petitioner and TANGEDCO. The petitioner has submitted that the cost variation is due to increase in compensation against transmission line construction for crop and tree, actual custom duty paid, FERV variation and decrease in overheads and IDC during the execution of project. It is observed that the estimated completion cost is within the RCE. Therefore, the cost variation is allowed.

Time over-run

25. As per the Investment Approval dated 11.11.2014, the commissioning scheduled of the project was 36 months from the date of Investment Approval. Accordingly, the schedule date of commercial operation was 11.11.2017, against which subject assets

was put under commercial operation on 1.2.2017, 1.2.2017 and 31.3.2017 respectively. Hence, there is no time over-run in COD of the instant transmission assets.

Interest During Construction (IDC)

26. The petitioner has claimed IDC on cash basis as under:-

(Rs in lakh)

Asset	IDC As per Auditor certificate	IDC Discharged up to COD	IDC Discharged in 2016-17	IDC Discharged in 2017-18
Asset I(A)(a)	143.24	29.45	0.00	113.79
Asset I(A)(b)	3298.90	1687.90	50.14	1560.86
Asset I (B)	217.40	53.29	0.00	164.11

27. The IDC claimed above on cash basis has been considered for the purpose of tariff, subject to true-up.

28. The petitioner has claimed IEDC of Rs 52.43 lakh, Rs 1047.63 lakh, Rs 76.75 lakh for Asset-I(A)(a), Asset-I(A)(b) and Asset-I(B), respectively paid during construction as on COD, which is within the percentage of Hard Cost (i.e, 5%) indicated in the Abstract Cost Estimate and accordingly it is allowed. Hence, no adjustment of IEDC is required in the case of instant assets. Year wise details of actual amount of IEDC discharged i.e. Form-12A is also submitted by the petitioner. However, the petitioner, vide affidavit dated 26.05.2017, has submitted that entire IEDC claimed in Auditor Certificate is on cash basis and is paid up to COD of the assets. Hence, the entire amount of IEDC has been allowed.

Initial Spares

29. Regulation 13(d) 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) --------
>
> (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.

30. The petitioner has claimed initial spares of Rs.14.81 lakh for Asset-I(A)(a) corresponding to transmission line and Rs. 3797.46 lakh and Rs.166.50 lakh in respect for Assets-I(A)(b) and Asset-I(B) respectively, corresponding to Sub-Station. Initial spares, claimed by the petitioner in respect of the instant assets are within the ceiling specified in the 2014 Tariff Regulations. Hence, no adjustment of initial spares is required. Further, the petitioner, vide affidavit dated 16.02.2018, has submitted the details of discharged initial spares liabilities. The details are as follows:-

(Rs. in lakh)

Particulars	Total initial spares claimed		Initial Spares discharged as on COD		Initial Spares estimated to be discharged during 2016-17	
	T/L	S/S	T/L	S/S	T/L	S/S
Asset-I(A)(a)	14.81	--	10.37	--	4.44	--
Asset-I(A)(b)	--	3797.46	--	2658.22	--	1139.24
Asset-I(B)	--	166.50	--	116.55	--	49.95

<u>Capital cost as on COD</u>

31. Detail of the capital cost considered as on COD after making the necessary adjustment in respect capital expenditure of IDC and IEDC is as follows:-

(Rs. in lakh)

Asset	Capital cost as on COD claimed by the petitioner	Un- discharged IDC as on COD.	Excess initial spare disallowed	Capital cost as on COD considered for tariff calculation
1	2	3	4	5 = (2-3-4)
Asset-I(A)(a)	3601.21	113.79	0.00	3487.42
Asset-I(A)(b)	71473.30	1611.00	0.00	69862.30
Asset-I(B)	3944.84	164.11	0.00	3780.73

<u>Additional Capital Expenditure</u>

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

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

(i) Undischarged liabilities recognised to be payable at a future date;
(ii) Works deferred for execution;
(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
(v) Change in Law or compliance of any existing law:‖

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff."

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

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

34. The cut-off date in the case of instant transmission asset is 31.3.2020.

35. The petitioner has claimed additional capital expenditure of Rs. 258.18 lakh, and Rs.716.20 lakh during 2016-17 and 2017-18 respectively for Asset-I(A)(a), Rs. 6892.38 lakh, and Rs.17526.08 lakh during 2016-17 and 2017-18 respectively for Asset-I(A)(b) and Rs. 1189.79 lakh, and Rs.439.58 lakh during 2017-18 and 2018-19 respectively for Asset-I(B) respectively. The additional capital expenditure claimed by the petitioner for the instant assets for the period 2016-17, 2017-18 and 2018-19 is within the cut- off date and is on account of balance and retention payments and accordingly it is allowed under Regulation 14(1)(i) of the 2014 Tariff Regulations. The petitioner's claim of additional capital expenditure is within the cut-off date. Accordingly, the petitioner's claim is allowed. The additional capital expenditure allowed is as follows:-

(Rs. in lakh)

Assets	2016-17	2017-18	2018-19
Asset-I(A)(a)	258.18	716.20	--
Asset-I(A)(b)	6892.38	17526.08	--
Asset-I(B)	--	1189.79	439.58

<u>Capital cost as on 31.3.2019</u>

36. Detail of the capital cost considered as on 31.3.2019 is as follows:-

(Rs. in lakh)

Asset	Cost on COD	Additional capital expenditure for 2016-17	Additional capital expenditure for 2017-18	Additional capital expenditure for 2018-19	Total estimated cost as on 31.3.2019

Asset-I(A)(a)	3487.42	258.18	716.20	0.00	4461.80
Asset-I(A)(b)	69862.30	6892.38	17526.08	0.00	94280.76
Asset-I(B)	3780.73	0.00	1189.79	439.58	5410.10

Debt- Equity ratio

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

> "(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:
>
> Provided that:
>
> i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
> ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
> iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.
>
> **Explanation.-**The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.
>
> "(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as maybe admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

38. The capital cost on the date of commercial operation arrived at as above and additional capitalization allowed have been considered in the normative debt-equity ratio of 70:30 as provided under clause (1) and (5) of the 2014 Tariff Regulations. The details of debt-equity as on the date of commercial operation and 31.3.2019 considered on normative basis are as under:-

Asset-I (A)(a) **(Rs. in lakh)**

Particulars	%	Capital cost as on tariff COD	Add Cap during 2016-17 to 2018-19	Capital cost as on 31.3.2019
		Amount	Amount	Amount
Debt	70.00	2441.19	682.07	3123.26
Equity	30.00	1046.23	292.31	1338.54
Total	**100.00**	**3487.42**	**974.38**	**4461.80**

Asset-I (A)(b) **(Rs. in lakh)**

Particulars	%	Capital cost as on tariff COD	Add Cap during 2016-17 to 2018-19	Capital cost as on 31.3.2019
		Amount	Amount	Amount
Debt	70.00	48903.61	17092.92	65996.53
Equity	30.00	20958.69	7325.54	28284.23
Total	**100.00**	**69862.30**	**24418.46**	**94280.76**

Asset-I (B) **(Rs. in lakh)**

Particulars	%	Capital cost as on tariff COD	Add Cap during 2016-17 to 2018-19	Capital cost as on 31.3.2019
		Amount	Amount	Amount
Debt	70.00	2646.51	1140.56	3787.07
Equity	30.00	1134.22	488.81	1623.03
Total	**100.00**	**3780.73**	**1629.37**	**5410.10**

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

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

> **"24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.
>
> (2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:
>
> Provided that:
>
> (i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in **Appendix-I:**
>
> (ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

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

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

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

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

"25. Tax on Return on Equity:

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

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

Rate of pre-tax return on equity = Base rate / (1-t)

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

Additional Return on Equity

40. The petitioner has further submitted that the assets covered in the instant petition were put into commercial operation within the time line specified in the 2014 Tariff Regulations and has prayed for grant of additional RoE of 0.5%. The petitioner has

further submitted that SRPC has also certified that the total time taken for completion of instant assets is 26 month and 20 days, which is within the time specified in the 2014 Tariff Regulations.

41. The petitioner has further submitted that RoE has been calculated at the rate of 20.243% after grossing up the RoE with MAT rate of 20.961% as per the above Regulations. The petitioner has further submitted that the grossed up RoE is subject to truing up based on the effective tax rate of respective financial year applicable to the petitioner company.

42. TANGEDCO has submitted that delay in execution of Srikakulam PS and the associated bays associated with the instant petition, the Vemagiri- Srikakulam 765 kV lines could not be commissioned, Vizag Transmission Limited was ready for commissioning the Vemagiri- Srikakulam 765 kV lines on 30.9.2016 as per their notification. But due to delay in execution of Srikakulam PS, the transmission line was not brought into beneficial use. In response, the petitioner has submitted that the investment approval and the project implementation could commence only after receipt of approval from GoI under Setion-68 of Electricity Act 2003. However, Vemagiri 765 kV Sub-station and bays at Srikakulam Sub-station was assigned to the petitioner vide MOP letter Ref.no:11/02/2011-PG dated: 25.8.2014. Accordingly, approval for investment accorded by Board of director of the petitioner on 11.11.2014, with schedule of 36 months. The petitioner has further submitted that the SCOD of the instant project is 11.11.2017 and the assets under the project have been commissioned ahead of the scheduled. Further, the early commissioning of the assets has also be discussed and agreed in 32nd meeting of SRPC held on 22.08.2017.

43. We have considered the submission made by the petitioner and respondent. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of RoE with the effective tax rate for the purpose of RoE. The SRPC vide letter 26.12.2017 has certified that the following elements covered in the instant petition fulfill the requirements of Regulation 24(2)(iii) of the 2014 Tariff Regulations:-

Sl. No	Asset Name	Actual DOCO
1	400 kV bays of Vijayawada & Gazuwaka lines at Vemagiri GIS	01.02.2017
2	400 kV 80 MVAR Bus Reactor and its bays at Vemagiri GIS	01.02.2017
3	240 MVAR Switchable line Reactors of Srikakulam 1&2 lines at Vemagiri GIS	01.02.2017
4	765 kV Bays at Srikakulam-1&2 bays at Vemagiri GIS	01.02.2017
5	1500 MVA 765/400kV ICT-1 and its bays at Vemagiri GIS	01.02.2017
6	2X240 MVAR, 765kV Bus Reactors and its bays at Vemagiri GIS	01.02.2017
7	1500 MVA 765/400 kV ICT-2 and its bays at Vemagiri GIS	01.02.2017
8	240 MVAR Switchable line Reactors of Vemagiri 1&2 lines at Srikakulam	01.02.2017
9	765 kV Bays at Vemagiri -1&2 bays at Srikakulam	01.02.2017

44. The petitioner in original petition has claimed additional RoE based on anticipated COD which falls in 2009-14 tariff period. However, additional RoE was also claimed by the petitioner in the revised tariff forms submitted as per affidavit dated 26.05.2017 for all assets under instant petition, which were based on actual COD (i.e. 2014-19 tariff period) of the assets.

45. The timeline specified in Appendix-II of the 2014 Tariff Regulations for grant of additional RoE of 0.5% in case of the instant assets is 36 months. The instant assets were put into commercial operation in 26 months and 20 days which is within the timeline of 36 months. However, for Asset-I (A)(a) the petitioner in Form-2 (submitted

vide affidavit dated:26.5.2017 based on actual COD) has mentioned the line length of the Asset-I (A)(a) as 18.79 kilometers. It is noted that as per proviso (vi) of Regulation 24 (2), of 2014 Tariff Regulations, additional RoE shall not be admissible for transmission line having length of less than 50 kilometers. Hence, the additional RoE is not admissible for the Asset-I (A)(a).

46. The petitioner has also claimed additional RoE of 0.5% for GIS Sub-station, transformers, Bus Reactors, Line Reactors alongwith associated bays at Vemagiri Sub-stations and Line Reactor and associated bays at Srikakulam Sub-station. The petitioner has submitted RPC approval dated 26.12.2017 for the 400 kV 80 MVAR Bus Reactor and its bays at Vemagiri GIS, 240 MVAR Switchable line Reactors of Srikakulam 1&2 lines at Vemagiri GIS, 765 kV Bays at Srikakulam-1&2 bays at Vemagiri GIS, 1500 MVA 765/400 kV ICT-1 and its bays at Vemagiri GIS, 2X240 MVAR, 765 kV Bus Reactors and its bays at Vemagiri GIS, 240 MVAR Switchable line Reactors of Vemagiri 1&2 lines at Srikakulam, 765kV Bays at Vemagiri -1&2 bays at Srikakulam and 1500 MVA 765/400 kV ICT-2 and its bays at Vemagiri GIS. As per Regulation 24(2)(iii) additional RoE is allowed for Asset-I(A)(b) and Asset-I(B). As regards bay extensions in existing Srikakulam Sub-stations, the Commission in order dated 10.11.2015 in Review petition 04/RP/2015 held that they are also part of the transmission project and hence qualify for grant of additional RoÉ of 0.5%. The relevant portion of the said order is extracted below. Therefore, additional RoE of 0.5% is allowed for the bays extensions at Srikakulam Sub-stations.

> *"9*. We have considered the submissions of the review petitioner. We are of the view that bay extension is part of the scheme consisting of transmission line and the bay. Project has been defined as the transmission system which means a line or group of lines with or without associated sub-station and includes equipment associated with the transmission system and sub-stations. Where a scheme has been approved consisting

of a transmission line and bay extension in an existing sub-station, it will be considered as a project. If both the elements have been commissioned within the timeline given in the Appendix-II to the 2009 Tariff Regulations, then it will be eligible for additional RoE. The bay extension cannot be seen in isolation. Similar approach has been adopted by the Commission in Petition No. 34/TT/2011 and 46/TT/2013. In the instant case, the entire project including the bay extension has been commissioned within the time line specified in the Appendix-II to the 2009 Tariff Regulations and accordingly we are of the view that the instant asset is eligible for additional RoE".

47. Accordingly, the RoE allowed for the assets covered in the instant petition is as follows:-

(Rs. in lakh)

Asset-I (A)(a)					
Particulars	**2014-15**	**2015-16**	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Opening Equity	--	--	1046.23	1123.68	1338.54
Addition due to Additional Capitalisation	--	--	77.45	214.86	0.00
Closing Equity	--	--	**1123.68**	**1338.54**	**1338.54**
Average Equity	--	--	1084.95	1231.11	1338.54
Return on Equity (Base Rate)	--	--	15.50%	15.50%	15.50%
Tax rate for the year 2014-15 (MAT)	--	--	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	--	--	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	--	--	**34.39**	**241.42**	**262.49**

Asset-I (A)(b)					
Particulars	**2014-15**	**2015-16**	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Opening Equity	--	--	20958.69	23026.40	28284.23
Addition due to Additional Capitalisation	--	--	2067.71	5257.82	0.00
Closing Equity	--	--	**23026.40**	**28284.23**	**28284.23**
Average Equity	--	--	21992.55	25655.32	28284.23
Return on Equity (Base Rate)	--	--	16.00%	16.00%	16.00%
Tax rate for the year 2008-09 (MAT)	--	--	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	--	--	20.243%	20.243%	20.243%
Return on Equity (Pre Tax)	--	--	**719.63**	**5193.41**	**5725.58**

Asset-I (B)					
Particulars	**2014-15**	**2015-16**	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Opening Equity	--	--	1134.22	1134.22	1491.16
Addition due to Additional Capitalisation	--	--	0.00	356.94	131.87
Closing Equity	--	--	**1134.22**	**1491.16**	**1623.03**
Average Equity	--	--	1134.22	1312.69	1557.09

Return on Equity (Base Rate)	--	--	16.00%	16.00%	16.00%
Tax rate for the year 2008-09 (MAT)	--	--	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	--	--	20.243%	20.243%	20.243%
Return on Equity (Pre Tax)	--	--	**0.63**	**265.73**	**315.20**

Interest on Loan (IoL)

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

> "(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan
>
> (2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.
>
> (3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization 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."

49. The petitioner's entitlement to IoL has been calculated as per the provisions of Regulation 26 of the 2014 Tariff Regulations as detailed below:-

(i) Gross amount of loan, repayment of installments and rate of interest have been considered as perform 9C in the petition;

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

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

50. The petitioner has submitted that the IoL has been claimed on the basis of rate prevailing as on COD i.e. 01.02.2017, 01.02.2017 and 31.03.2017 and the change in interest due to floating rate of interest applicable, if any, needs to be claimed/ adjusted over the tariff block 2014-19. The same has been considered, subject to truing-up.

51. The details of IoL allowed are as under:-

Asset-I (A) (a) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	2441.19	2621.92	3123.26
Cumulative Repayment upto Previous Year	0.00	31.06	248.99
Net Loan-Opening	**2441.19**	**2590.86**	**2874.27**
Addition due to Additional Capitalisation	180.73	501.34	0.00
Repayment during the year	31.06	217.94	236.92
Net Loan-Closing	**2590.86**	**2874.27**	**2637.35**
Average Loan	2516.03	2732.57	2755.81
Weighted Average Rate of Interest on Loan	7.882%	7.873%	7.865%
Interest on Loan	**32.05**	**215.14**	**216.75**

Asset-I (A) (b) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	48903.61	53728.28	65996.53
Cumulative Repayment upto Previous Year	0.00	581.54	4784.51
Net Loan-Opening	**48903.61**	**53146.73**	**61212.02**
Addition due to Additional Capitalisation	4824.67	12268.26	0.00
Repayment during the year	581.54	4202.97	4637.61

Net Loan-Closing	**53146.73**	**61212.02**	**56574.41**
Average Loan	51025.17	57179.38	58893.21
Weighted Average Rate of Interest on Loan	8.114%	8.122%	8.129%
Interest on Loan	**669.25**	**4644.20**	**4787.31**

Asset-I (B) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	2646.51	2646.51	3479.36
Cumulative Repayment upto Previous Year	0.00	0.55	231.58
Net Loan-Opening	**2646.51**	**2645.96**	**3247.78**
Addition due to Additional Capitalisation	0.00	832.85	307.71
Repayment during the year	0.55	231.03	274.05
Net Loan-Closing	**2645.96**	**3247.78**	**3281.44**
Average Loan	2646.24	2946.87	3264.61
Weighted Average Rate of Interest on Loan	8.096%	8.092%	8.087%
Interest on Loan	**0.59**	**238.45**	**264.02**

Depreciation

52. Regulation 27 of the 2014 Tariff Regulations 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.

4) 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.

(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."

53. The petitioner has claimed the actual depreciation as a component of annual fixed charges. The instant transmission asset was put under commercial operation during 2016-17. Accordingly, it will complete 12 years after 2018-19. As such, depreciation has been calculated annually based on Straight Line Method in accordance with Regulation 27 at the rates specified in Appendix-II to the 2014 Tariff Regulations.

54. The details of the depreciation worked out are as under:-

Asset-I (A) (a) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Average capital cost	3616.51	4103.70	4461.80
Freehold land included above	0.00	0.00	0.00

Rate of Depreciation	5.312%	5.311%	5.310%
Depreciable Value	3254.86	3693.33	4015.62
Remaining Depreciable Value	3254.86	3662.27	3766.63
Depreciation	**31.06**	**217.94**	**236.92**

Asset-I (A) (b) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Average capital cost	73308.49	85517.72	94280.76
Freehold land included above	2061.72	2061.72	2061.72
Rate of Depreciation	4.908%	4.915%	4.919%
Depreciable Value	64122.09	75110.40	82997.14
Remaining Depreciable Value	64122.09	74528.86	78212.63
Depreciation	**581.54**	**4202.97**	**4637.61**

Asset-I (B) **(Rs. in lakh)**

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Average capital cost	3780.73	4375.63	5190.31
Freehold land included above	0.00	0.00	0.00
Rate of Depreciation	5.280%	5.280%	5.280%
Depreciable Value	3402.66	3938.06	4671.28
Remaining Depreciable Value	3402.66	3937.52	4439.70
Depreciation	**0.55**	**231.03**	**274.05**

Operation & Maintenance Expenses (O&M Expenses)

55. Regulation 29(4)(a) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system based on the type of sub-station and the transmission line. Norms specified in respect of the elements covered in the instant petition are as under:-

(Rs. in lakh)

Element	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-I (A)(a) (COD-01.02.2017)					
D/C Twin & Three conductors	0.707	0.731	0.755	0.780	0.806
400 kV GIS bays	51.54	53.25	55.02	56.84	58.73

(Rs. in lakh)

Element	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-I (A)(b) (COD-01.02.2017)					

765kV bays	84.420	87.220	90.120	93.110	96.200
400 kV GIS bays	51.54	53.25	55.02	56.84	58.73

(Rs. in lakh)

Element	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Asset-I (B) (COD-31.03.2017)					
765kV bays	84.420	87.220	90.120	93.110	96.200
400 kV GIS bays	51.54	53.25	55.02	56.84	58.73

56. The petitioner has computed normative O&M Expenses as per sub-clause (a) of clause (4) of Regulation 29 of the 2014 Tariff Regulations. Accordingly, the allowable O&M Expenses for the instant transmission asset are as under:-

(Rs. in lakh)

Element	**2016-17**	**2017-18**	**2018-19**
Asset-I (A) (a)			
D/C Twin & Three conductors	2.33	14.66	15.14
2 nos. 400 kV GIS bays at Vemagiri Pooling Station	18.08	113.68	117.46
Total	**20.41**	**128.34**	**132.60**

(Rs. in lakh)

Element	**2016-17**	**2017-18**	**2018-19**
Asset-I (A) (b)			
07 no 765kV bay at Vemagiri & 04 no 765kV bay at Vemagiri Srikakulam Pooling Station (Total:11 nos 765kV bays)	160.24	1024.21	1058.20
02 no 400 kV GIS bay at Vemagiri Pooling Station	17.78	113.68	117.46
Total	**178.02**	**1137.89**	**1175.66**

(Rs. in lakh)

Element	**2016-17**	**2017-18**	**2018-19**
Asset-I (B)			
01 no 765kV bay at Vemagiri Pooling Station	0.24	93.110	96.200
01 no 400 kV GIS bay at Vemagiri Pooling Station	0.15	56.84	58.73
Total	**0.39**	**149.95**	**154.93**

57. The O&M Expenses claimed by the petitioner is as under:-

(Rs. in lakh)

Asset	**2016-17**	**2017-18**	**2018-19**
Asset-I (A) (a)	20.70	128.34	132.60
Asset-I (A) (b)	183.56	1137.89	1175.66
Asset-(B)	0.39	149.95	154.93

58. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 had been arrived at on the basis of normalized actual O&M Expenses during the period 2008-09 to 2012-13. The petitioner has further submitted that the wage revision of the employees is due during 2014-19 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 block 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 during 2014-19, if any.

59. TANGEDCO in its reply has submitted that there is no provision in 2014 Tariff Regulations for revising the normative O&M charges based on the actuals. TANGEDCO has submitted that the O&M rates are arrived based on past five years actual O&M Expenses which include the wage hikes during the previous five years and 10% margin over and above the effective CAGR of O&M Expenses have been allowed. The beneficiaries are over-burdened due to the exorbitant O&M rates when compared to the rates of State Transmission Utilities. Therefore, the request for revision of O&M rates should not be allowed.

60. In response, the petitioner has submitted that being a CPSU, the scheme of wage

revision is binding on the petitioner. However the actual impact of wage hike (due w.e.f. 1.1.2017) has not been factored in fixation of the normative O&M rates prescribed for the 2014-19 tariff block. In line with the Regulation 19(f)(ii) of the 2014 Tariff Regulations, norms for O&M Expenses for the year 2009-10 were derived considering the impact of wage hike of the employees under PSUs. The petitioner has prayed for suitable revision in the norms for O&M Expenses for claiming the impact of wage hike during 2014-19 periods.

61. The O&M Expenses have been worked out as per the norms specified in the 2014 Tariff Regulations. As regards the 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 (IWC)

62. Regulation 28(1)(c) and Regulation 3(5) of the 2014 Tariff Regulations specify as follows:-

> "**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;
>
> (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
>
> (iii) 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;"

63. 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:-

(iv) **Receivables**

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

(v) **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.

(vi) **O & M Expenses**

O&M Expenses have been considered for one month as a component of working capital. The petitioner has claimed O&M Expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(vii) **Rate of IWC**

As provided under Regulation 28(3) of the 2014 Tariff Regulations, SBI Base rate 9.30% as on 1.4.2016 plus 350 BPS i.e. 12.80% has been considered as the rate of IWC.

64. Accordingly, the IWC allowed for the instant assets is as under:-

Asset-I (A) (a)

(Rs. in lakh)

Particulars	2016-17	2017-18	2018-19
Maintenance Spares	3.01	19.25	19.89
O & M expenses	1.67	10.70	11.05
Receivables	20.13	137.38	145.22
Total	**24.81**	**167.32**	**176.16**
Interest Rate	12.800%	12.800%	12.800%
Interest (pro-rata)	**3.18**	**21.42**	**22.55**

Asset-I (A) (b)

(Rs. in lakh)

Particulars	2016-17	2017-18	2018-19
Maintenance Spares	26.70	170.68	176.35
O & M expenses	14.84	94.82	97.97
Receivables	366.79	2590.68	2786.32
Total	**408.33**	**2856.18**	**3060.64**
Interest Rate	12.800%	12.800%	12.800%
Interest (pro-rata)	**52.27**	**365.59**	**391.76**

Asset-I (B)

(Rs. in lakh)

Particulars	2016-17	2017-18	2018-19
Maintenance Spares	0.06	22.49	23.24
O & M expenses	0.03	12.50	12.91
Receivables	0.37	151.51	172.49
Total	**0.46**	**186.49**	**208.64**
Interest Rate	12.800%	12.800%	12.800%
Interest (pro-rata)	**0.06**	**23.87**	**26.71**

Transmission charges

65. The transmission charges allowed for the instant transmission asset are summarized as under:-

Asset-I(A)(a)

(Rs. in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	31.06	217.94	236.92
Interest on Loan	32.05	215.14	216.75
Return on Equity	34.39	241.42	262.49
Interest on Working Capital	3.18	21.42	22.55
O & M Expenses	20.08	128.34	132.60
Total	**120.76**	**824.26**	**871.30**

Asset-I(A)(b)

(Rs. in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	581.54	4202.97	4637.61
Interest on Loan	669.25	4644.20	4787.31
Return on Equity	719.63	5193.41	5725.58
Interest on Working Capital	52.27	365.59	391.76
O & M Expenses	178.03	1137.89	1175.66
Total	**2200.72**	**15544.05**	**16717.92**

Asset-I(B)

(Rs. in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	0.55	231.03	274.05
Interest on Loan	0.59	238.45	264.02
Return on Equity	0.63	265.73	315.20
Interest on Working Capital	0.06	23.87	26.71
O & M Expenses	0.40	149.95	154.93
Total	**2.22**	**909.03**	**1034.91**

66. 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.

67. TANGEDCO has submitted that as per the Investment Approval there are no external borrowings and hence the petitioner‘s request for escalation on account of

FERV should not be allowed. We have considered the submissions of the petitioner and TANGEDCO. 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

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

Licence Fee and RLDC fees and Charges

69. The petitioner has requested to allow the petitioner to bill and recover License 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), respectively, of Regulation 52 of the 2014 Tariff Regulations.

Service Tax

70. 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 was not levied on transmission service. Further, service tax is subsumed by GST and hence petitioner’s prayer is infructuous.

Goods and Services Tax

71. The petitioner has prayed for reimbursement of tax, if any, on account of proposed implementation of GST. The petitioner has submitted that the Commission should allow to recover GST from the beneficiaries, if imposed on transmission charges under the proposed GST when implemented by Government of India. We are of the view that petitioner's prayer is premature.

Sharing of Transmission Charges

72. 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 as per Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges & Losses) Regulations, 2010 as amended time to time.

73. This order disposes of Petition No. 45/TT/2017.

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