

**CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI**

**Petition No. 230/TT/2016**

**Coram:**

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

**Date of Order: 19.07.2018**

**In the matter of:**

Determination of transmission tariff for 765 kV D/C Srikakulam-Angul Transmission line under "Common System associated with East Coast Energy Private Limited and NCC power projects limited LTOA generation projects in Srikakulam Area, Part-A" in Southern Region and Eastern Region.

**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 (KSEB),  
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)  
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. Bihar State Electricity Board  
Vidyut Bhawan, Bailey Road  
Patna - 800 001
17. West Bengal State Electricity Distribution Company Ltd  
Vidyut Bhawan, Bidhan Nagar  
Block- DJ, Sector-II, Salt Lake City  
Kolkata - 700 091
18. Grid Corporation of Orissa Ltd.  
Shahid Nagar,  
Bhubaneswar - 751 007
19. Damodar valley Corporation  
DVC Tower, Maniktala  
Civic Centre, VIP Road,  
Kolkata - 700 054
20. Power Department  
Govt. of Sikkim,  
Gangtok - 737 101
21. Jharkhand State Electricity Board  
In Front of main Secretariat  
Doranda, Ranchi - 834002
22. East Coast Energy PVT LTD  
7-1-24, B Block, 5th Floor, Roxana Towers,  
Green lands, Begumpet,  
Hyderabad-500016
23. NCC Power Projects Ltd  
6th Floor, NCC House, Madhapur  
Hyderabad-500081

.....Respondents

**For Petitioner** : Shri Vivek Kumar Singh, PGCIL  
Shri S.S. Raju, PGCIL  
Shri B. Dash, PGCIL  
Shri Rakesh Prasad, PGCIL

**For Respondents** : Shri S. 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 “765 kV D/C Srikakulam-Angul transmission line (hereinafter referred to as “transmission asset”) under Common System associated with East Coast Energy Private Limited and NCC power projects limited LTOA generation projects in Srikakulam Area, Part-A” in Southern Region and Eastern Region 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 was entrusted with the instant transmission scheme and it was discussed and agreed in the 30<sup>th</sup> SCM of Southern Region Constituents held on 13.4.2010, which was further discussed and ratified by SRPC in the special meeting of SRPC held on 25.11.2010. The scheme was also discussed and agreed in the Standing Committee of Eastern Region constituents held on 28.12.2010.

3. The Investment Approval for the transmission project was accorded by the Board of Directors of the petitioner vide Memorandum No. C/CP/LTA Srikakulam Part-A dated 4.6.2012, at an estimated cost of ₹190924 lakh including an IDC of ₹11594 lakh (based on February, 2012 price level).

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/PA1617-03-0V-RCE010 dated 31.3.2017 at RCE of ₹143897.00 lakh including IDC of ₹17180.00 lakh (based on August, 2016 price level).



5. The scope of work covered under the transmission system “Common System associated with East Coast Energy Private Limited and NCC power projects limited LTOA generation projects in Srikakulam Area, Part-A” is as follows:-

**Transmission Line**

- a. Srikakulam Pooling Station-Angul 765 kV D/C line (Initially charged at 400 kV)

**Sub-station**

- a. Establishment of 765 kV Pooling Station at Srikakulam (Initially charged at 400 kV)
- b. Extension of 765/400 kV Angul Substation with provision of 1x1500 MVA 765/400 kV transformer.

**Reactive Compensation**

**Line Reactors (400 kV)**

- a. 80 MVAR line reactors with 800ohms NGR at each end of both circuits of Srikakulam Pooling Station-Angul 765 kV D/C line (Initially charged at 400 kV) (Switchable line reactor at Srikakulam Pooling station end).

**Bus Reactors (400 kV)**

- a. 1x80 MVAR 400 kV Bus reactor at 765/400 kV Srikakulam Pooling Station.

6. 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 29.5.2015. The petitioner, vide affidavit dated 20.3.2017, has submitted that the instant assets were put under commercial operation on 1.2.2017 i.e. after a time over-run of 20 months and 3 days.

7. Annual Fixed Cost was granted for the instant transmission asset vide order dated 12.6.2017 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC charges.



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

Particulars	(₹ in lakh)		
	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	1134.15	70999.76	7392.10
Interest on Loan	1299.49	7773.43	7474.28
Return on Equity	1275.93	7993.69	8326.27
Interest on working capital	83.59	515.40	523.06
O & M Expenses	52.21	323.76	334.55
<b>Total</b>	<b>3845.37</b>	<b>23706.04</b>	<b>24050.26</b>

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

Particulars	(₹ in lakh)		
	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	46.99	48.56	50.18
O & M Expenses	26.11	26.98	27.88
Receivables	3845.37	3951.01	4008.38
<b>Total</b>	<b>3918.46</b>	<b>4026.55</b>	<b>4086.44</b>
Rate of Interest	12.80%	12.80%	12.80%
<b>Interest</b>	<b>81.07</b>	<b>515.40</b>	<b>523.06</b>

10. 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. Only Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO), Respondent No. 4, has filed reply vide affidavit dated 16.3.2017 and 12.3.2018 and Kerala State Electricity Board (KSEB), Respondent No. 3, has filed reply affidavit dated 6.3.2017. CEA in response to the query of the Commission clarified about the usefulness of the transmission system. The petitioner has filed its rejoinder to the reply vide affidavits dated 12.4.2017. The issues



raised by TANGEDCO and KSEB, and the clarifications given by the petitioner are dealt in relevant paragraphs of the order.

11. The Commission directed petitioner to submit the purpose for which the instant line was planned, capacity of the line and actual power flow and the upstream and downstream transmission systems of the instant line, status of associated generating stations and the details of beneficiaries firmed up. The petitioner has submitted that Angul-Srikakulam 765 kV D/C line was earlier planned as part of common transmission system for IPP generation projects in Srikakulam area and later Southern Region became net importer of power. Accordingly, an AC inter-connection through Srikakulam Pooling Station to Vemagiri 765 kV D/C line utilizing Angul- Srikakulam Pooling Station line was proposed with IPPs in Srikakulam area and was agreed in the 33rd SR SCM held on 20.10.2011. The capacity of the line was 2750 MW (based on limit considered for 765 kV D/C lines under N-1 condition for the purpose of ATC-TTC calculation by CTU). Actual power flow on line was 1660 MW (Max) (as per data available from NLDC for the period January to March, 2018). The petitioner also submitted the details of upstream and downstream transmission system at Angul and Srikakulam Sub-stations, the status of generating station and also that no beneficiaries has been firmed up.

12. This order has been issued after considering the respondents and petitioner's affidavits dated 13.12.2016, 12.1.2017, 6.3.2017, 16.3.2017, 20.3.2017, 12.4.2017, 26.4.2017, 18.7.2017, 13.9.2017, 9.1.2018, 20.2.2018, 12.3.2018 and 13.4.2018.

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



### **Date of Commercial Operation (“COD”)**

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. Initially, the petitioner had claimed the anticipated COD of the instant asset as 1.11.2016. The petitioner, vide affidavit dated 20.3.2017, has submitted that the actual COD of the instant asset was 1.2.2017. The petitioner has also submitted the certificate of RLDC as per the 2014 Tariff Regulations, certificate of CEA under Regulation 43 of CEA (Measures Related to Safety and Electric Supply) Regulations, 2010 as well as certificate of CMD as required under the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.

16. We have considered the submissions of the petitioner and have also gone through the certificate of CMD and the certificates issued by RLDC and CEA. Keeping in mind, the submissions of the petitioner supported by documentary evidence, we approve the COD of the instant asset as 1.2.2017 for the purpose of tariff calculation.

### **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 13 of these regulations;
- (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations; 39
- (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:-

(₹ in lakh)						
Approved apportioned cost (FR)	Revised apportioned cost (RCE)*	Capital cost as on COD	Estimated additional capital expenditure			Total estimated completion cost
			2016-17	2017-18	2018-19	
190924.00	143897.00	132033.63	1359.75	7310.28	1654.68	142358.34

\*submitted in Form-5B vide affidavit date 26.4.2017

### **Cost Variation**

19. The FR approved apportioned cost of the instant asset is ₹190924.00 lakh and the total estimated completion cost is ₹142358.34 lakh and hence there is reduction in cost of ₹48565.66 lakh in comparison to FR cost. The petitioner has submitted the following



reasons for cost under-run:-

- a) 765 kV Pooling Station at Srikakulam (initially charged at 400 kV) and Srikakulam Pooling Station-Angul 765 kV D/C line (initially charged at 400 kV) was to be constructed. However, due to changed Load Generation scenario in Southern Region (SR) and consequent approval of Srikakulam Pooling Station-Vemagiri Pooling Station 765 kV D/C line to be charged at 765 kV level, it was agreed to operate the Srikakulam-Angul at its rated voltage of 765 kV right from the beginning. In view of the above, 400 kV elements including reactors and associated switchgear at both Srikakulam and Angul Sub-stations got deleted from the earlier approved scope of the project. However, cost towards preliminary survey, land acquisition, R&R compensation and cost of civil works have been retained under the present project. Due to deletion of sub-station, control room building, fire-fighting pump house which was envisaged in FR (Including IEDC) the same was not taken up. This has resulted in decrease in the cost of the project by ₹12000 lakh.
- b) The line length under the project has decreased from 400 km (as per FR) to 276.49 kms (at actual) due to change in location of sub-station. Accordingly, there has been variation in quantities of various items viz. tower steel, conductor, insulator, reinforcement steel, concrete etc, leading to reduction of approx. ₹31400 lakh.
- c) Land and compensation: The expenditure towards land and compensation has resulted in decrease of approx. ₹15 Crore from the anticipated expenses based on actual amount paid.

The petitioner has submitted that the overall cost reduction was mainly due to change in scope, actual site conditions and other associated factors which were beyond control of the



petitioner.

20. TANGEDCO has submitted that the petitioner has not exercised due diligence in planning the transmission system as there is a huge deviation from their original investment approval. The reduction in route length of the transmission line from 400 km to 276.49 km due to change in location of the sub-station is not substantiated and justified with proper documentary evidence. It shows the negligence on the part of the petitioner in coordinated planning and execution. Even though the cost under run is attributed to the change in scope of the scheme, there is a huge escalation in unit cost of the transmission elements and also 29.12% escalation in IDC which is unrealistic and unjustifiable. The cost escalation of individual elements claimed by the petitioner proves that the petitioner has not followed the IEEMA's formula for price variation. TANGEDCO has requested to restrict the capital cost to original approved FR cost and disallow the cost of redundant assets which are capitalized.

21. KSEB has submitted that the time over-run has resulted into huge increase of 29.12% (₹3376.07 lakhs) in IDC from the original estimate, which is not at all justifiable when the total project cost has been reduced due to decrease in line length and deletion of 400 kV equipment. KSEB also submitted that the increase in capital cost due to price variation and IDC owing to time over-run of the project, is an added liability for the beneficiaries. Further, the Revised Cost Estimate has not been approved by the Board of Directors of the petitioner.

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



a	<b>Price variation</b>	<b>0.46%</b>
b	Quantity variation	-16.47%
c	Addition/Deletion	-6.27%
d	Land & Compensation	-0.80%
e	FERV	0.27%
f	Increase in IDC & IEDC	-2.26%

23. The petitioner has further submitted that the line length under the project has decreased from 400 km (as per DPR) to 276.06 km due to change in location of sub-station land at Srikakulam. On account of this, there has been variation in quantities of various items such as tower steel, conductor, insulator etc., as per details given below:

- a. Tower : (-) ₹15854 lakh,
- b. Conductor : (-) ₹12932 lakh;
- c. Insulators : (-) ₹ 1495 lakh;

Due to above reason, there is a decrease of ₹31448 lakh under the head which works out to (-) 16.47% of the approved cost.

24. There is a decrease in the cost of the project by ₹11968 lakh on account of additions and deletion, which works out to (-) 6.27% of the approved cost in respect of 400 kV Sub-station at Srikakulam and Angul was deleted which has reduced the project by (-) ₹11953 lakh. Due to deletion of sub-station, control room building, firefighting pump house which was available in DPR under the head "Non-residential buildings" was not taken up. This has resulted in deletion of scope of (-) ₹285 lakh. A provision of ₹270 lakh is kept towards open and close store building for storing line and sub-station materials at Srikakulam Sub-station which was not envisaged in DPR.



25. The petitioner has also submitted that the RCE of the project is ₹143897 lakh including an IDC of ₹17180 lakh based on August, 2016 price level against approved cost of ₹90924 lakh including an IDC of ₹11594 lakh at February, 2012 price level. The RCE for the project has been approved by the petitioner's Board of Director's after the project RCE proposal was examined by a Committee of Executive Directors in its 91<sup>st</sup> meeting held on 9.2.2017. After deliberating various aspects of cost over-run/under-run involved in the project, the Committee concluded that the increase in cost of the project was mainly due to increase in price variation, variation in quantities of approved items and increase in IDC etc. The Petitioner submitted that the RCE for the transmission system was accorded by the Board of Directors of the petitioner vide the Memorandum no. C/CP/PA1617-03-0V-RCE010 dated 31.3.2017 at RCE of ₹143897.00 lakh including IDC of ₹17180.00 lakh (based on August, 2016 price level).

26. The petitioner has submitted that there is net decrease of ₹1537 lakh in case of land and compensation paid. Based on actual/anticipated expenditure, an amount of ₹ 4398 lakh is incurred/to be incurred under land and compensation, resulting in decrease of ₹1537 lakh in project cost. The main reason for decrease in land cost is as follows:-

(₹ in lakh)

Description	As per DPR	As per RCE	Remarks
i) Land for SS and R&R Compensation.	20.81	8.10	Based on actual/anticipated Payments. Details of Land area: As per DPR: 137.00 acre. As per RCE: 138.44 acre
ii) Compensation towards Crop and PTCC	5.57	20.88	Based on actual/ anticipated payments.
iii) Compensation towards Forest	32.97	15.00	Based on actual/ anticipated payments. Forest Area: 1) As per DPR : 291.00 Ha 2) As per RCE : 98.63 Ha
<b>TOTAL</b>	<b>59.35</b>	<b>43.98</b>	



27. The petitioner further submitted that the project involves various contracts awarded in foreign currency. Therefore, increase in liability on account of FERV is ₹513 lakh (0.27 %).

The details of exchange rates considered are as follows:-

<b>Equivalent foreign exchange in INR</b>		
	<b>Approved DPR (February, 2012 PL)</b>	<b>RCE</b>
1 USD	49.64	Varied from 49.64 to 68.69

28. The petitioner further submitted that total IDC and IEDC under the project has decreased by ₹4314 lakh in comparison to approved cost, which works out to (-) 2.26% of project cost as per the following break-up:-

A. Decrease in IEDC:- As per the investment approval, the IEDC including contingencies for the project was estimated at ₹13033 lakh on normative bases whereas in the RCE, IEDC under the project works out to ₹3882 lakh based on actual/anticipated expenditure resulting in a decrease of ₹9151 lakh.

B. Increase in IDC :- Interest during Construction (IDC) for the project as per approved DPR cost was estimated at ₹11594 lakh whereas based on the actual and anticipated funds flow, the IDC for the project in the RCE works out to ₹16770 lakh. Thus, there is an increase of ₹5176 lakh in IDC.

29. We have considered the submissions of the petitioner and respondents. It is observed that there is an increase of ₹875 lakh due to price variation, reduction in cost by ₹31448 lakh due to decrease in line length, ₹1537 lakh due to decreased in land compensation, reduction of cost by ₹11953 lakh due to deletion of 400 kV Sub-station at Srikakulam and



Angul, about ₹285 lakh reduction due to deletion of sub-station control room building, fire fighting pump house, about ₹270 lakh is kept towards O&C store building for storing line and sub-station materials at Srikakulam Sub-station, due to variation in exchange rate (FERV) an amount of ₹512 lakh increased, decrease of an amount of ₹4314 lakh towards IEDC and IDC. Hence, approximately an amount of ₹47878 lakh is reduced.

30. The petitioner has revised the total apportioned approved cost as ₹143897.00 lakh (as per RCE) against the estimated completion cost of ₹142358.34 lakh. The cost variation cannot be attributed to the petitioner. Moreover, the completion cost is lower than the revised approved apportioned cost. Accordingly, the cost variation is allowed.

#### **Time over-run**

31. As per Investment Approval, the schedule COD of the instant asset was 29.5.2015 against which the asset was put under commercial operation as on 1.2.2017. Hence, there is a time over-run of 20 months 3 days.

32. TANGEDCO has submitted that the delay is attributed to the lack of coordination between the petitioner and the generation developers as well as other TSPs. However, due to delay in execution of Srikakulam pooling station, the Vemagiri- Srikakulam 765 kV lines could not be put under commercial operation. Vizag Transmission Limited (VTL) 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 Pooling Station, the transmission line was not brought into beneficial use. It is evident that the Srikakulam Pooling Station could be brought into beneficial use with the commissioning of the Vemagiri-Srikakulam 765 kV lines. The petitioner has not only delayed the subject asset but also attributed to the



delayed COD of VTL's assets which attracted liquidated damages for a period of 156 days. TANGEDCO has further submitted that the delay is attributable to the petitioner and hence, the IDC and IEDC for the period of time over-run should be disallowed.

33. KSEB has submitted that the petitioner being a CTU is well conversant with RoW issues and other such problems existing during construction and therefore, the delay indicates lack of proper planning. With proper planning, the delay of 20 months could have been avoided. KSEB has further submitted that the delay is not justifiable and the burden of such delay cannot be passed on to the beneficiaries, as such the time overrun should be disallowed.

34. In response, the petitioner in its rejoinder to the reply filed by TANGEDCO and KSEB has submitted that the suggestion of the respondents is not practicable in the given circumstances. As far as practicable it follows the same pattern which is evident from the detailed account for reasons of delays and actions to mitigate time lapses, as submitted in the petition. The petitioner has further submitted that the time over-run in case of the instant asset was delay in forest clearance, delay in land acquisition at Srikakulam and severe ROW issues at Angul Sub-station, law and order problem at Angul sites, cyclone-Phailin and Hudhud, RoW issues during construction of transmission line and court cases. The details submitted by the petitioner are as under:-

a) **Delay in Statutory clearances:** About 98.632 Ha (approx. 15 km of 765 kV D/C transmission line) of area falls in reserve forest, dense forest area and highly disturbed area, which required number of clearances to be obtained before starting the work of construction of transmission line in these areas. The work in the forest area could not be commenced on time due to late receipt of forest clearance. Forest clearance proposal for





the subject line was submitted in June, 2012. The proposal for forest clearance for 98.632 Ha was submitted after carrying out for surveyed three alternative routes for 765 kV Double circuit (D/C) Transmission Line from Angul Pooling Station to Srikakulam Pooling Station and with one having least involvement of Forest land. However, forest clearance of the line was accorded by DFO (Ghumsur) only on 29.1.2016 and on 11.2.2016 by DFO (Berhampur) after 44 months of submission of proposal which generally takes 10-14 months. This resulted in delay of about 30-34 months. The chronology of various stages is as under:-

Srl. No	Date	Description
1	28.6.2012	Submitted proposal for Forest approval
2	13.2.2013	DFO forwarded proposal to RCCF
3	3.9.2015	Stage-I Clearance obtained
4	29.1.2016	Clearance Obtained from DFO Ghumsur south division
5	11.2.2016	Clearance Obtained from DFO Berhampur division

b) **Delay in land acquisition at Srikakulam:** The proposal for land acquisition at Srikakulam has been submitted well before the IA on 5.12.2011. The land was handed over after proceeding of LAO and RDO under Sec-II of Land Acquisition Act of 1884, Consent Award under section 11 (2) of the LA Act on 22.5.2013.

c) **Delay in respect of ROW issues at Angul Sub-station:** In spite of the formal land allocation, land was acquired on 26.3.2012 for Angul Sub-station. Further, ROW issue affected the progress of the construction of Sub-stations and subsequently delaying the commissioning as well. Various written communications were made to various authorities regarding the obstruction/threat made by the local villagers in working of the petitioner at site of Angul 765 kV Sub-station. Hence, the petitioner was facing the problem of ROW



issues at sub-station, which hampered the progress of work at Angul Sub-station.

**d) Delay due to cyclonic storm- Phailin (October, 2013), HUDHUD (October, 2014)**

**and extended monsoon:** Geographically, this system is around 40 km from sea coast and transmission line passes through Andhra Pradesh and Odisha Sea coast. The construction work was badly effected due to cyclones Phailin and Hudhud. The cyclone brought heavy rain and strong winds with speed reaching up to 200 km an hour, inundated villages and damaged the construction work in nearby sea coast areas. In 2013-14, the extended monsoon made adverse effect on the construction work. Due to which works at many locations were disrupted for months together and material transportation was also suffered. The extracts of report of Indian Meteorological Department regarding extended monsoon, cyclones etc are enclosed.

**e) Delay due to Right of Way issues:** The petitioner has submitted that it faced major RoW issues at Location (loc) no. 61/0, 49/0, 154/0, 60/1, 107/0, 120/0, 122/5 and has submitted that severe ROW issues persisted at location no: 60/1 from 7.11.2014 till 10.5.2016. The following details about RoW issues alongwith the related court cases have been submitted:-

(i) At Location No.60/1: Court case (OS No. 01/2015) was filed by land owners. In addition, court case at loc. 60/1 was due to objection by UNIITECH Residential College at Nayagarh. The petitioner approached district administration to resolve the issue. RoW at location no: 60/1 in Nayagarh, Berhampur section could be made available after the finalization of Court case in late October, 2016. The chronology of Court Case at Location no: 60/1:



Srl. No.	DATE	DETAILS OF EVENT
1	15.9.2014	Miscellaneous Case filed before the Collector and District Magistrate for stop the construction of building by the college authority and allows Powergrid To construct the tower. Misc Case No:5/2014.
2	20.3.2015	Judgement of the above case given by the Collector and DM.
3	16.6.2015	Minutes of meeting held with Chairman Unitech Residential college and Powergrid.
4	25.6.2015	Minutes of meeting held with Chairman Unitech Residential college and Powergrid. College authority agreed and allowed for work.
5	4.12.2015	Show cause notice received from District Magistrate to appear on court for the Misc case No: 01/2015 filed by M/s Unitech Residential college regarding compensation matter on 12.11.2015.
6	5.2.2016	Written argument submitted to the Collector and District Magistrate for the misc case no: 01/2015.
7	7.6.2016	Letter written to sub-collector, Nayagarh requesting for providing police assistance with executive Magistrate for starting the work.
8	21.6.2016	Sub-collector cum Sub Divisional Magistrate issued letter to Superintendent of Police, nayagarh for providing police protection and tahsildar Nayagarh as Executive Magistrate.
9	24.6.2016	Caviet filed at Civil Judge( Sr. Division), Nayagarh and Civil Judge( Jr. Division)
10		Cavite filed High court, Cuttack, Odisha.
11	12.7.2016	Written submission for the Misc Case-01/2015
12	30.7.2016	Misc case No:09/2016 filed before Collector and District magistrate for Right of Way by Powergrid
13	1.8.2016	Letter written to Principal Secretary (Energy), Govt of Odisha for kind co-operation.
14	2.8.2016	M/s Unitech Residential college has approached and filed case at High court, Cuttack, Odisha
15	22.8.2016	Counter affidavit submitted at High court Odisha on 22.08.2016.
16	7.10.2016	Collector Nayagarh issued Final Order
17	14.10.2016	Unitech Received Compensation amount & Compliance report submitted to Collector, Nayagarh

35. We have considered the submissions of TANGEDCO, KSEB and the petitioner with respect to the time over-run. The time over-run of 20 months and 03 days has been mainly



attributed to the reasons for (a) delay in obtaining forest clearance (b) RoW issues faced during construction of the transmission line and various court cases and orders for relocation of tower at various locations.

36. It is noticed that the petitioner was required to obtain the forest clearance from 16 sections in respect of the transmission line. The petitioner had submitted the proposal for forest clearance for line on 28.6.2012. The forest approval in Ghumsur south division section was obtained on 29.1.2016. The last forest approval was obtained for Berhampur section on 11.2.2016. Accordingly, the forest clearance for the entire transmission line was obtained on 11.2.2016. The forest clearance took around 03 years and 08 months. As per the Forest (Conservation) Amendment Rules, 2004 notified by MoEF on 3.2.2004, the timeline for forest approval after submission of proposal is 210 days by the State Government and 90 days by the Forest Advisory Committee of Central Government, resulting in processing time of 300 days. As against the statutory period of 300 days for processing and obtaining the forest clearance, the forest authorities have taken 1335 days for grant of forest clearance. We are of the view that this period is beyond the control of the petitioner and the petitioner cannot be held responsible for the delay.

37. It is also observed that there were severe RoW problems at location nos. 60/1, 49, 101. The petitioner faced similar RoW issues and court cases at other locations as well. The petitioner has also submitted the documents in support of the same. The petitioner was not able to take up any work from 15.9.2014 to 14.10.2016 at location no.60/1. We are of the view that the delay at this location from 15.9.2014 to 14.10.2016 (25 months) is beyond the control of the petitioner.



38. In our view, on account of delay in forest clearance, which is beyond the control of the petitioner, the COD of the assets was delayed. Accordingly, the entire period of time over-run in respect of instant asset is condoned. Since, the other reason for time over-run such as RoW issues and court cases were resolved during the period of obtaining the forest clearance, the said period ran parallel to the period consumed for obtaining the forest clearance and accordingly, subsumed in the time for obtaining forest clearance.

**Interest During Construction (IDC)**

39. The petitioner has claimed IDC of ₹16770.76 lakh for the instant asset and has submitted the Auditor’s certificate dated 17.3.2017 in support of the same. The petitioner has claimed Interest during Construction (IDC) on accrual basis for the instant asset. The petitioner submitted the discharge details of IDC as under:-

(₹ in lakh)			
IDC As per Auditor	IDC Discharged up to COD	IDC Discharged in 2016-17	IDC Discharged in 2017-18
16770.76	13946.81	482.44	2341.51

40. The petitioner has further submitted that the statement showing IDC discharged up to COD for the asset in which the loan wise drawl date has also been mentioned. For the purpose of determining the IDC, the loan wise drawl date as provided by the petitioner has been assumed as date of infusion of debt fund for the concerned loan.

41. The IDC statement includes SBI pertaining to different quarters with different codes no. The Petitioner has shown multiple draws with 8.9% as interest for SBI. Hence, we have considered the same rate of interest as it was given in Form-9C. The following has been



observed while calculating the admissible IDC:-

(i) The Bond XL and XLI are having the repayment during the construction period, but the petitioner has mentioned the same principal amount starting from the infusion date till the COD. Hence, the claimed IDC towards these bonds are differing from computation given in the IDC statement.

(ii) In case of loan (SBI 10000 Drawn 1610-Q2), the claimed IDC are lesser than the IDC worked out based on the given loan amount and interest rate. However, No reason has been mentioned in the IDC computation sheet.

(iii) Due to the above reasons the IDC claimed in Auditor certificate seems to be lesser than the IDC worked out based on the details given in IDC statement (viz. loan infusion date, Loan amount and rate of interest). The IDC statement does not reveal the reason for variations.

(iv) Therefore, the IDC claimed are provisionally allowed and the petitioner may be directed to submit the detailed IDC computation statement explaining/reconciling the deviations as noted above at the time of true up.

42. Accordingly, the claimed and provisionally allowed IDC are summarized as under:-

(₹ in lakh)

IDC Claimed as per the Auditor's Certificate	Entitled IDC as on COD as worked out	IDC Dis-Allowed as on COD due to computation difference (A-B)	Un-discharged portion of Entitled IDC as on COD*	IDC Allowed on cash basis as on COD
b	c	d=b-c	e	f=b-d-e
16770.76	16770.76	0.00	2823.95	13946.81

\* The undischarged portion of IDC has been considered as ACE during the year of discharge.



43. The allowed IDC shall be reviewed at the time of truing up subject to the submission of detailed IDC computation statement explaining/reconciling the deviations as noted above.

**Incidental Expenditure during Construction (IEDC)**

44. The petitioner has claimed IEDC of ₹3132.87 lakh for the instant asset 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. The petitioner vide affidavit dated 20.3.2017 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 claimed has been allowed.

**Initial Spares**

45. 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%

(i) Gas Insulated Sub-station (GIS)-5.00%

(vi) Communication system-3.5%

Provided that:



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

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

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

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

46. The petitioner has claimed initial spares of ₹1100.00 lakh for instant asset corresponding to transmission line. Initial spares, claimed by the petitioner in respect of the instant assets are within the ceiling specified in the 2014 Tariff Regulations. Year wise discharge details of initial spares are not available. Though the spares claimed are within the ceiling limit of 2014 Tariff Regulations. It is assumed that same have already been adjusted in CA certificate dated 17.3.2017. Thus, it shall be reviewed at the time of truing up.

### **Capital cost as on COD**

47. 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:-

(₹ in lakh)

<b>Capital cost as on COD claimed by the petitioner</b>	<b>Undischarged IDC as on COD.</b>	<b>Excess initial spare disallowed</b>	<b>Capital cost as on COD considered for tariff calculation</b>
1	2	3	4 = (1-2-3)
132033.63	2823.95	0.00	129209.68





## **Additional Capital Expenditure**

48. 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.”

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

cut-off date means 31<sup>st</sup> 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 31<sup>st</sup> March of the year closing after three years of the year of commercial operation.”

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

51. The petitioner has claimed additional capital expenditure as per Auditor Certificate and as per Form-7 are summarized below:-

Particulars	Regulation	(₹ in lakh)		
		2016-17 (DOCO to 31.3.2017)	2017-18	2018-19
1. Discharge of un-discharge liabilities on Hard cost	14(1)(i)	1179.25	6481.98	0.00
2. Add cap towards works deferred for execution (by addition into gross block)	14(1)(ii)	180.50	828.30	1654.68



3. Total add-cap as per Auditor Certificate (excluding IDC liability)(1+2)=(3)		1359.75	7310.28	1654.68
4. Discharge of IDC Liability -(4)	14(1)(i)	482.44	2341.51	0.00
<b>5. Total add-cap claimed as per Form 7 (3+4)</b>		<b>1842.19</b>	<b>9651.79</b>	<b>1654.68</b>

52. As discussed in IDC para above, the allowable undischarge IDC as on COD has been allowed as additional capital expenditure during the year of discharge.

53. The additional capital expenditure approved for the period from COD to 31.3.2019 shall be reviewed at the time of true up is as follows:-

(₹ in lakh)				
Allowed Add-cap	Regulation	2016-17	2017-18	2018-19
Discharge of Liability on Hard Cost	14(1)(i)	1179.25	6481.98	0.00
Add cap to the extent of unexecuted work	14(1)(ii)	180.50	828.30	1654.68
Discharge of undercharge liabilities-IDC.	14(1)(i)	482.44	2341.51	0.00
<b>Total allowable add-cap</b>		<b>1842.19</b>	<b>9651.79</b>	<b>1654.68</b>

54. The additional capital expenditure approved for the period from COD to 31.3.2019 is as follows:-

(₹ in lakh)				
Cost on COD	Estimated Additional Capital			Total estimated cost
	2016-17	2017-18	2018-19	
129209.68	1842.19	9651.79	1654.68	142358.34

### **Debt- Equity ratio**

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

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

Provided that:



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

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

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

56. The capital cost as 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. The details of debt-equity as on dates of commercial operation and 31.3.2019 considered on normative basis are as under:-

Particular	(₹ in lakh)			
	As on COD		As on 31.3.2019	
	Amount	(%)	Amount	(%)
<b>Debt</b>	90446.78	70.00	99650.84	70.00
<b>Equity</b>	38762.90	30.00	42707.50	30.00
<b>Total</b>	<b>129209.68</b>	<b>100.00</b>	<b>142358.34</b>	<b>100.00</b>

### **Return on Equity (RoE)**

57. 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 ratell.

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

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

Where -tl 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.”

58. The petitioner has further submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate of 20.961% as per the above Regulations. 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.

59. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the instant transmission asset is given below:-

(₹ in lakh)			
Particulars	2016-17	2017-18	2018-19
Opening Equity	38762.90	39315.56	42211.09
Addition due to Additional Capitalisation	552.66	2895.54	496.40
Closing Equity	39315.56	42211.09	42707.50
Average Equity	39039.23	40763.33	42459.30
Return on Equity (Base Rate )	15.50%	15.50%	15.50%
Tax rate for the year 2013-14	20.961%	20.961%	20.961%



Rate of Return on Equity (Pre	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	<b>1237.48</b>	<b>7993.69</b>	<b>8326.27</b>

### **Interest on Loan (IoL)**

60. 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.”

61. 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. The Gross Normative loan has been considered as per the Loan amount determined based on the debt equity ratio applied on the allowed capital cost.



ii. The depreciation of every year has been considered as Normative repayment of loan of concerned year;

iii. The weighted average rate of interest on actual loan portfolio has been worked out by considering the Gross amount of loan, repayment & rate of interest as mentioned in the petition, which has been applied on the normative average loan during the year to arrive at the interest on loan.

62. The petitioner has submitted that the IoL has been claimed on the basis of rate prevailing as on COD i.e.1.2.2017 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. We have calculated IoL on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing-up.

63. Detailed calculations in support of IoL are given in the Annexure I.

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

Particulars	(₹ in lakh)		
	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	90446.78	91736.31	98492.57
Cumulative Repayment upto Previous Year	0.00	1099.80	8196.36
Net Loan-Opening	90446.78	90636.51	90296.20
Addition due to Additional Capitalisation	1289.53	6756.25	1158.28
Repayment during the year	1099.80	7096.57	7387.83
Net Loan-Closing	90636.51	90296.20	84066.65
Average Loan	90541.65	90466.36	87181.42



Weighted Average Rate of Interest on Loan	8.6131%	8.5960%	8.5772%
<b>Interest on Loan</b>	<b>1260.57</b>	<b>7776.52</b>	<b>7477.68</b>

## **Depreciation**

65. 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.ii”

66. 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.

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

Particulars	(₹ in lakh)		
	2016-17 (pro-rata)	2017-18	2018-19
Gross Block as on COD	129209.68	131051.87	140703.66
Addition during 2014-19 due to Projected Additional Capitalisation	1842.19	9651.79	1654.68
Gross Block as on 31 <sup>st</sup> March	131051.87	140703.66	142358.34
Average Gross Block	130130.78	135877.77	141531.00
Rate of Depreciation	5.2285%	5.2228%	5.2199%
Depreciable Value	116412.81	121561.38	126649.29
Remaining Depreciable Value	116412.81	120461.58	118452.92
<b>Depreciation</b>	<b>1099.80</b>	<b>7096.57</b>	<b>7387.83</b>

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

68. 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:-

Element	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
D/C (Bundled conductors with four sub-Conductors)	1.062	1.097	1.133	1.171	1.210

69. 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:-

Element	(₹ in lakh)		
	2016-17	2017-18	2018-19
D/C (Bundled conductors with four sub-Conductors) (Line length-276.49 kMs)	50.64	323.76	334.55

70. 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.

71. 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.

72. KSEB submitted that with regard to the suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, during 2014-19, the Commission in para 33.2 of the Statement of Reasons of the 2014 Tariff Regulations has explicitly stated that the impact of wage revision shall only be given after seeing impact of one full year.

73. 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.

74. 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)**

75. 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;”

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

**(i) Receivables**

Receivables as a component of working capital will be equivalent to two months of annual transmission charges.

**(ii) Maintenance spares**

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

**(iii) O & M expenses**

Operation and maintenance 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.

(iv) **Rate of interest on working capital**

As per Proviso 3 of Regulation 28 of the 2014 Tariff Regulations, SBI Base rate 9.30% as on 23.10.2016 plus 350 Bps i.e. 12.80% has been considered for the asset, as the rate of interest on working capital

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

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19
Maintenance Spares	46.99	48.56	50.18
O & M expenses	26.11	26.98	27.88
Receivables	3845.45	3950.99	4008.23
<b>Total</b>	<b>3918.55</b>	<b>4026.53</b>	<b>4086.29</b>
Interest Rate	<b>12.80%</b>	<b>12.80%</b>	<b>12.80%</b>
<b>Interest</b>	<b>81.08</b>	<b>515.40</b>	<b>523.05</b>

**Transmission charges**

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

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	1099.80	7096.57	7387.83
Interest on Loan	1260.57	7776.52	7477.68
Return on Equity	1237.48	7993.69	8326.27
Interest on Working Capital	81.08	515.40	523.05
O & M Expenses	50.64	323.76	334.55
<b>Total</b>	<b>3729.56</b>	<b>23705.93</b>	<b>24049.38</b>

79. 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, filing fees, license fee, RLDC fees and charges or any other kind of impositions etc. The same if imposed shall be borne and additionally paid by the respondents. The petitioner is entitled to FERV as provided under Regulation 50 of the 2014 Tariff Regulations and the petitioner can make other claims as per the 2014 Tariff Regulations.

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

80. 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**

81. 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.

### **Goods and Services Tax**

82. 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**

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

84. TANGEDCO in its reply submitted as follows:-

(i) Transmission system for evacuation of power from IPP generation projects in Srikakulam area was evolved in the 30<sup>th</sup> meeting of the Standing Committee on Power Planning held on 13.4.2010 based on the LTOA agreement between PGCIL and two IPPs.

(ii) The transmission system was designed especially for the two IPPs, namely, East Coast Energy Pvt. Ltd and NCC Power Projects Limited. NCC Power Projects Limited has abandoned its commissioning and no particulars are available on record regarding the commissioning of the project of East Coast Energy Pvt. Ltd.

(iii) No system strengthening was required in this case. Hence, the beneficiaries are not liable to bear the transmission charges till the IPPs have firmed up beneficiaries. The liability to pay the transmission charges prior to the period of PPAs entered into with the beneficiaries should rest with the IPPs as it was agreed in the said 30<sup>th</sup> meeting of Standing Committee that sharing of transmission charges would be in line



with the Commission's regulations and the transmission charges would be paid by the beneficiaries as and when they are firmed up.

(iv) The Commission in order dated 8.3.2018 in Petition No. 229/RC/2015 in the light of judgment dated 13.10.2015 in Appeal No. 6 of 2015 of Appellate Tribunal for Electricity has held that if a generator does not bring the dedicated transmission line or commission the unit, then the entire transmission charges have to be borne by the generator. As the generation projects have not been commissioned, the transmission charges should be collected from the generators and no PoC charges should be imposed on the beneficiaries.

85. In response, the petitioner has submitted that while regulatory approval for 765/400 kV pooling station at Srikakulam was obtained, East Coast Energy Private Limited and NCC Power Projects Limited were mentioned as the target beneficiaries. The generators have not come up with their projects. The line is basically devised to cater to the needs of generation as well as transmission of power from generation projects to the ultimate beneficiaries of SR States which is power deficient. With the commissioning of this line, the petitioner is facilitating power evacuation to SR States and as such the SR States are beneficiaries of this line.

86. The Petitioner was directed to submit the documentary proof with regard to the purpose for which the transmission line was envisaged, capacity of the line and actual power flow of the line and the upstream and downstream transmissions system of the transmission line. As regards the purpose of the transmission line, the Petitioner has submitted that Angul-





Srikakulam 765 kV D/C line was earlier placed as part of common transmission system for IPP generation projects in Srikakulam area. In this connection, the Petitioner has placed on record the Minutes of 30<sup>th</sup> SR SCM held on 13.4.2010, 31<sup>st</sup> SR SCM held on 27.12.2010 and 12<sup>th</sup> ER SCM held on 28.12.2010. The Petitioner has submitted that on account of slowing down of the capacity addition based on imported coal, Southern Region became net importer of power. It was agreed in the 33<sup>rd</sup> SR SCM held on 20.10.2011 that Srikakulam Pooling Station-Vemagiri Pooling Station 765 kV D/C line as a System Strengthening Scheme for impact of power from Eastern Region to Southern Region could be made. As regards the power flow, the Petitioner as submitted that the capacity of the Srikakulam Pooling Station-Vemagiri Pooling Station 765 kV D/C line is 2750 MW based on the limit considered for 765 kV D/C line under N-I condition against which the actual power flow on the line is about 1660 MW at present as per the data available from NLDC.

87. The Commission sought comments of CEA vide letter dated 6.2.2017 as to whether 765 kV D/C Srikakulam-Angul transmission line is in regular service and whether the transmission line is serving any useful purpose in the configuration as proposed by PGCIL. In response, CEA replied that Angul-Srikakulam pooling station 765 kV D/C line is connected to Vemagiri Pooling Station and is charged at 765 kV. At Vemagiri pooling station this power is stepped down to 400 kV and is evacuated to Gazuwaka and Vijayawada through LILO of existing Gazuwaka-Vijayawada S/C line at the Vemagiri Pooling Station. Presently, the flow on this line Angul-Srikakulam Pooling Station 765 kV D/C is 600-1000 MW and the line is in use.



88. We have considered the submission of the Petitioner and Respondents. The transmission line was originally conceived for evacuation of power from two generating stations, namely, East Coast Energy Private Limited and NCC Power Projects Limited who have taken the LTA of 1320 MW each. On account of the delay in commissioning of the delay in commission of generation projects, it was subsequently decided in the 33<sup>rd</sup> SR SCM held on 20.10.2011 to use the transmission line as a System Strengthening Scheme for import of power from Eastern Region to Southern Region. CEA has also certified that the line is in use. Therefore, keeping in view that the transmission line is a part of meshed network and is being used as a System Strengthening Scheme for carrying power from Eastern region to Southern region, the tariff of the said line shall be included in PoC Charges.

89. This order disposes of Petition No. 230/TT/2016.

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

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

sd/-  
**(A. K. Singhal)**  
**Member**

sd/-  
**(P.K. Pujari)**  
**Chairperson**



**ANNEXURE-I****CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR  
TARIFF PERIOD 2014-19**

	<b>Details of Loan</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
1	SBI Loan 1.5.2014			
	Gross loan opening	26888.00	26888.00	26888.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	26888.00	26888.00	26888.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	26888.00	26888.00	26888.00
	Average Loan	26888.00	26888.00	26888.00
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	2393.03	2393.03	2393.03
	Rep Schedule	NA		
2	SBI Loan (Oct 2013-Dec 2013)			
	Gross loan opening	3652.00	3652.00	3652.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	3652.00	3652.00	3652.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	3652.00	3652.00	3652.00
	Average Loan	3652.00	3652.00	3652.00
	Rate of Interest	8.90%	8.90%	8.90%
	Interest	325.03	325.03	325.03
	Rep Schedule	NA		
3	Bond XL			
	Gross loan opening	1862.00	1862.00	1862.00
	Cumulative Repayment upto COD/previous year	155.17	155.17	310.33
	Net Loan-Opening	1706.83	1706.83	1551.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	155.17	155.17
	Net Loan-Closing	1706.83	1551.67	1396.50



	Average Loan	1706.83	1629.25	1474.08
	Rate of Interest	9.30%	9.30%	9.30%
	Interest	158.74	151.52	137.09
	Rep Schedule	12 annual installments from 28.6.2016		
4	Bond XLI			
	Gross loan opening	3719.00	3719.00	3719.00
	Cumulative Repayment upto COD/previous year	309.92	309.92	619.83
	Net Loan-Opening	3409.08	3409.08	3099.17
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	309.92	309.92
	Net Loan-Closing	3409.08	3099.17	2789.25
	Average Loan	3409.08	3254.13	2944.21
	Rate of Interest	8.85%	8.85%	8.85%
	Interest	301.70	287.99	260.56
	Rep Schedule	12 annual installments from 19.10.2016		
5	Bond XLII			
	Gross loan opening	1136.00	1136.00	1136.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	1136.00	1136.00	1136.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1136.00	1136.00	1136.00
	Average Loan	1136.00	1136.00	1136.00
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	99.97	99.97	99.97
	Rep Schedule	13.3.2023 Bullet Payment		
6	Bond XLIII			
	Gross loan opening	4709.00	4709.00	4709.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	392.42
	Net Loan-Opening	4709.00	4709.00	4316.58
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	392.42	392.42
	Net Loan-Closing	4709.00	4316.58	3924.17
	Average Loan	4709.00	4512.79	4120.38
	Rate of Interest	7.93%	7.93%	7.93%
	Interest	373.42	357.86	326.75
	Rep Schedule	12 annual installments from 20.5.2017		



7	Bond XLIV			
	Gross loan opening	8763.00	8763.00	8763.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	8763.00	8763.00	8763.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	2921.00
	Net Loan-Closing	8763.00	8763.00	5842.00
	Average Loan	8763.00	8763.00	7302.50
	Rate of Interest	8.70%	8.70%	8.70%
	Interest	762.38	762.38	635.32
	Rep Schedule	3 equal annual installments 15.7.2018, 15.7.2023, 15.7.2028		
8	Bond XLV			
	Gross loan opening	4388.00	4388.00	4388.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	365.67
	Net Loan-Opening	4388.00	4388.00	4022.33
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	365.67	365.67
	Net Loan-Closing	4388.00	4022.33	3656.67
	Average Loan	4388.00	4205.17	3839.50
	Rate of Interest	9.65%	9.65%	9.65%
	Interest	423.44	405.80	370.51
	Rep Schedule	12 annual installments from 28.2.2018		
9	Bond XLVI			
	Gross loan opening	3222.00	3222.00	3222.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	3222.00	3222.00	3222.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	3222.00	3222.00	3222.00
	Average Loan	3222.00	3222.00	3222.00
	Rate of Interest	9.30%	9.30%	9.30%
	Interest	299.65	299.65	299.65
	Rep Schedule	Redeemable at par in 3 equal installments on 4.9.2019, 4.9.2024 & 4.9.2029		
10	Bond XLVII			
	Gross loan opening	4488.00	4488.00	4488.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00



	Net Loan-Opening	4488.00	4488.00	4488.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	374.00
	Net Loan-Closing	4488.00	4488.00	4114.00
	Average Loan	4488.00	4488.00	4301.00
	Rate of Interest	8.93%	8.93%	8.93%
	Interest	400.78	400.78	384.08
	Rep Schedule	Annual installments from 20.10.2018		
11	Bond XLVIII			
	Gross loan opening	119.00	119.00	119.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	119.00	119.00	119.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	119.00	119.00	119.00
	Average Loan	119.00	119.00	119.00
	Rate of Interest	8.20%	8.20%	8.20%
	Interest	9.76	9.76	9.76
	Rep Schedule	Redeemable at par in 4 equal installments on 23.1.2020, 23.1.2022, 23.1.2025 & 23.1.2030		
12	Bond XLIX			
	Gross loan opening	2.00	2.00	2.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	2.00	2.00	2.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2.00	2.00	2.00
	Average Loan	2.00	2.00	2.00
	Rate of Interest	8.15%	8.15%	8.15%
	Interest	0.16	0.16	0.16
	Rep Schedule	Redeemable at par in 3 equal installments on 9.3.2020, 9.3.2025 & 9.3.2030		
13	Bond L			
	Gross loan opening	7315.00	7315.00	7315.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	7315.00	7315.00	7315.00



	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	7315.00	7315.00	7315.00
	Average Loan	7315.00	7315.00	7315.00
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	614.46	614.46	614.46
	Rep Schedule	12 annual installments from 27.05.2019		
14	Bond LI			
	Gross loan opening	2535.00	2535.00	2535.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	2535.00	2535.00	2535.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2535.00	2535.00	2535.00
	Average Loan	2535.00	2535.00	2535.00
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	212.94	212.94	212.94
	Rep Schedule	12 annual installments from 14.9.2019		
15	Bond LIII			
	Gross loan opening	6306.00	6306.00	6306.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	6306.00	6306.00	6306.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	6306.00	6306.00	6306.00
	Average Loan	6306.00	6306.00	6306.00
	Rate of Interest	8.13%	8.13%	8.13%
	Interest	512.68	512.68	512.68
	Rep Schedule	12 annual installments from 25.4.2020		
16	Bond LIV			
	Gross loan opening	5408.00	5408.00	5408.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	5408.00	5408.00	5408.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	5408.00	5408.00	5408.00



	Average Loan	5408.00	5408.00	5408.00
	Rate of Interest	7.97%	7.97%	7.97%
	Interest	431.02	431.02	431.02
	Rep Schedule	12 annual installments from 15.7.2021		
17	Bond LV			
	Gross loan opening	1583.00	1583.00	1583.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	1583.00	1583.00	1583.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1583.00	1583.00	1583.00
	Average Loan	1583.00	1583.00	1583.00
	Rate of Interest	7.55%	7.55%	7.55%
	Interest	119.52	119.52	119.52
	Rep Schedule	Redeemable at par on 21.9.2031		
18	Bond LVI			
	Gross loan opening	357.00	357.00	357.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	357.00	357.00	357.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	357.00	357.00	357.00
	Average Loan	357.00	357.00	357.00
	Rate of Interest	7.36%	7.36%	7.36%
	Interest	26.28	26.28	26.28
	Rep Schedule	Redeemable at par on 18.10.2026		
19	Bond LVII			
	Gross loan opening	3994.78	4332.49	5971.55
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00
	Net Loan-Opening	3994.78	4332.49	5971.55
	Additions during the year	337.71	1639.06	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	4332.49	5971.55	5971.55
	Average Loan	4163.64	5152.02	5971.55
	Rate of Interest	7.20%	7.20%	7.20%
	Interest	299.78	370.95	429.95



Rep Schedule	Redeemable at par on 21.12.2021		
<b>Total Loan</b>			
Gross loan opening	90446.78	90784.49	92423.55
Cumulative Repayment upto COD/previous year	465.08	465.08	1688.25
Net Loan-Opening	89981.70	90319.41	90735.30
Additions during the year	337.71	1639.06	0.00
Repayment during the year	0.00	1223.17	4518.17
Net Loan-Closing	90319.41	90735.30	86217.13
Average Loan	90150.55	90527.35	88476.22
Rate of Interest	8.6131%	8.5960%	8.5772%
Interest	7764.73	7781.76	7588.74

