

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 231/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 : 23.07.2018**

**In the matter of:**

Petition for determination of transmission tariff from COD to 31.3.2019 for 2 nos. 765 kV line bay along with 2X240 MVAR Switchable Line Reactors each at Srikakulam and Angul for termination of both circuit of 765 kV D/C Srikakulam-Angul transmission line, 2x1500 MVA 765/400 kV ICT's and 1x330 MVAR 765 kV Bus Reactor at Srikakulam under "Common System associated with East Coast Energy Private Limited and NCC Power Projects Limited LTOA generation projects in Srikakulam Area -part-C" for the 2014-19 tariff block.

**And in the matter of:**

Power Grid Corporation of India Limited  
"Soudamini", Plot No. 2, Sector 29  
Gurgaon -122001

**....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 for TANGEDCO  
Shri R.B. Sharma, Advocate, BSP(H)PL

### **ORDER**

The instant petition has been filed by Power Grid Corporation of India Ltd. (PGCIL) for approval of the transmission tariff for “2 nos. 765 kV line bay along with 2X240 MVAR Switchable Line Reactors each at Srikakulam and Angul for termination of both circuit of 765 kV D/C Srikakulam-Angul transmission line, 2x1500 MVA 765/400kV ICT's and 1x330 MVAR 765 kV bus reactor at Srikakulam (hereinafter referred to as “transmission asset”) in Southern Region and Eastern Region under “Common System associated with East Coast Energy Private Limited and NCC Power Projects Limited LTOA generation projects in Srikakulam Area -Part-C” 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 30th meeting of Standing Committee held on 13.4.2010 for IPP generation projects in Srikakulam area in Southern Region. The same was approved in the special meeting of SRPC held on 25.11.2010. This was also discussed and agreed by ER in ER Standing Committee meeting held on 28.12.2010. The Petitioner further submitted that the main transmission system for IPPs in Srikakulam area consisted of transmission lines and sub-stations approved in respective SCM of SR, WR & ER. In order to control overvoltage situations, during real time operations at various sub-stations in Southern Region, the switching of line reactor and bus reactor is one of the most common practiced measures.



These line reactors & bus reactors are taken out of service during peak hours when the grid experiences reduction of voltages due to increased loadings/stress. The sensitivity of the line reactors & bus reactors is inversely proportional to the short circuit strength of the bus, i.e., less sensitive for strong bus and more sensitive for weaker buses. Therefore, for similar voltage reduction at stronger buses, higher rating line reactors and bus reactors are required to be installed. Accordingly, installation of line reactors and bus reactors were planned to control over voltage conditions in Southern region.

3. The petitioner has made following prayers:-

“a) Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition;

b) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred;

c) Tariff may be allowed on the estimated completion cost. Revised Cost Estimate for the project is under approval;

d) 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;

e) 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;

f) 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;

g) 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;

h) 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;

i) 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;

j) Allow the Petitioner if GST is imposed on transmission charges under the proposed GST the same may be allowed to be recovered from the beneficiaries;

k) 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;

l) Allow the petitioner to bill Tariff from anticipated DOCO and also the petitioner may be allowed to submit revised Certificate and tariff Forms (as per the Relevant Regulation) based on actual DOCO 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."

4. The Investment Approval for the transmission project was accorded by the Board of Directors of the petitioner vide Memorandum No. C/CP/ Srikakulam-Part-C dated 5.4.2013, at an estimated cost of ₹51420 lakh including an IDC of ₹2879 lakh (Based on February, 2013 price level).

5. The Revised Cost Estimate (RCE) for the transmission system was accorded by the Board of Directors of the petitioner vide the letter dated 31.3.2017 at RCE of ₹70310 lakh including IDC of ₹7643 lakh (based on August, 2016 price level).



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

**Sub Station:**

a) Up gradation of 765/400 kV Srikakulam Pooling Station (765 kV-40kA, 400kV-50kA)

The Srikakulam 765/400kV Substation (initially charged at 400kV) is envisaged under Part-A shall be upgraded to its rated voltage 765kV under this project. The 400kV switchyard to be constructed as AIS and 765kV switchyard to be constructed as GIS. The up gradation shall comprise of following scope of works:

- i. 2x1500MVA, 765/400kV transformers alongwith associated 765kV & 400kV Bays.
- ii. 2 nos. 765kV line bays for termination of Srikakulam PS-Angul 765kV D/C line.

b) Extension of 765/400kV Angul substation

This substation is owned by POWERGRID and shall be executed to accommodate following bays under this project:

- i. 2 number 765kV line bays for termination of Srikakulam PS-Angul 765kV D/C line.

**Reactive Compensation**

**Bus Reactors (765KV)**

- 1x330 MVAR 765 kV Bus reactor at Srikakulam Pooling Station.

**Line Reactors (400KV)**

- 240 MVAR Switchable line reactors with 800ohms NGR at each end at Srikakulam Pooling station and Angul for both the circuits of Srikakulam Pooling Station-Angul 765kV D/C line.

7. The petitioner initially claimed the tariff for “2 nos. 765 kV line bay along with 2X240 MVAR Switchable Line Reactors each at Srikakulam and Angul for termination of both circuit of 765 kV D/C Srikakulam-Angul transmission line, 2x1500 MVA 765/400 kV ICT's and 1x330 MVAR 765 kV bus reactor at Srikakulam on the basis of anticipated date of commercial operation as 1.11.2016. Later, vide affidavit dated 2.3.2017 submitted the asset has been split into two on the basis of the COD as given below:-



| <b>Asset</b> | <b>Description</b>   | <b>Actual COD</b>                                    |
|--------------|--|--|
| Asset-I      | 2 nos. 765kV Line bays along with 2x240MVAR Switchable Line reactors each at Srikakulam & Angul for termination of both circuit of 765kV D/C Srikakulam - Angul Transmission line, and 1x330 MVAR 765kV Bus Reactor at Srikakulam. | 1.2.2017   |
| Asset-II*    | 2x1500MV A 765/400kV ICT's   | <b>30.3.2017</b><br><b>(Revised anticipated COD)</b> |

\*Asset-II is not covered in the instant petition.

Later, vide affidavit dated 26.3.2017, revised the anticipated COD of Asset-II to 31.3.2017. Subsequently, revised the anticipated COD of Asset-II as 30.9.2017 and 31.3.2018 vide affidavits dated 17.7.2017 and 9.1.2018 respectively. The capital cost and other details submitted by the Petitioner in case of Asset-II was with reference to the anticipated COD and the anticipated COD has been revised four times. Therefore, there will be a variation in the capital cost which will have impact on tariff. We therefore grant liberty to the petitioner to approach the Commission separately through a fresh petition for determination of tariff of Asset-II-2X500 MVA 765 /400 kV ICTs. Accordingly, tariff for Asset-II is not allowed in this order.

8. Annual Fixed Cost was granted for Asset-I, 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.

9. The petitioner has claimed transmission charges for the instant asset as under:-

| <b>Particulars</b>          | <b>(₹ in lakh)</b>            |                |                |
|-----------------------------|-------------------------------|----------------|----------------|
|                             | <b>2016-17<br/>(pro-rata)</b> | <b>2017-18</b> | <b>2018-19</b> |
| Depreciation                | 388.82                        | 2528.22        | 2734.89        |
| Interest on Loan            | 449.29                        | 2799.08        | 2811.78        |
| Return on Equity            | 441.54                        | 2875.64        | 3112.33        |
| Interest on working capital | 34.97                         | 222.65         | 234.05         |
| O & M Expenses              | 135.18                        | 837.99         | 865.80         |
| <b>Total</b>                | <b>1449.80</b>                | <b>9263.58</b> | <b>9758.85</b> |

10. The details of the "Interest on Working Capital" claimed by the petitioner for the instant



assets are as under:-

| Particulars        | (₹ in lakh)           |                |                |
|--------------------|-----------------------|----------------|----------------|
|                    | 2016-17<br>(pro-rata) | 2017-18        | 2018-19        |
| Maintenance Spares | 121.66                | 125.70         | 129.87         |
| O & M Expenses     | 67.59                 | 59.83          | 72.15          |
| Receivables        | 1449.80               | 1543.93        | 1626.47        |
| <b>Total</b>       | <b>1639.05</b>        | <b>1729.46</b> | <b>1828.49</b> |
| Rate of Interest   | 12.80%                | 12.80%         | 12.80%         |
| <b>Interest</b>    | <b>34.97</b>          | <b>222.65</b>  | <b>234.05</b>  |

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. Bihar State Power (Holding) Company Limited, Respondent No.16, has filed reply vide affidavit dated 21.12.2016, Kerala State Electricity Board Limited, Respondent No. 3, has filed reply vide affidavit dated 20.2.2017, Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO), Respondent No. 4, has filed reply vide affidavit dated 17.3.2017. The petitioner has filed its rejoinder to the reply of BSP(H)CL, KSEB and TANGEDCO vide affidavits dated 4.1.2017 and 12.4.2017. TANGEDCO has submitted its response to the rejoinder of the petitioner vide affidavit dated 5.2.2018 and the petitioner vide affidavit dated 16.2.2018 has submitted its comments to it. The issues raised by TANGEDCO, BSP(H)CL, KSEB and the clarifications given by the petitioner are dealt in relevant paragraphs of this order.

12. Further, the Commission directed petitioner to submit the purpose for which the instant line was envisaged, capacity of the line, actual power flow and the upstream and



downstream transmission systems of the instant line. The petitioner has submitted that the Angul-Srikakulam 765 kV D/C lines were earlier planned as part of common transmission system for IPP generation projects in Srikakulam area as agreed in the 30th SR SCM held on 13.4.2010, 31<sup>st</sup> WR SCM held on 27.11.2010 and 12<sup>th</sup> ER SCM held on 28.12.2010. Subsequently development on coal regulation in Indonesia resulted into slowing down of capacity addition based on imported coal. As a consequence, SR became net importer of power. Towards this, an AC inter-connection through Srikakulam Pooling Station to Vemagiri 765 kV D/C line utilising Angul-Srikakulam Pooling Station line proposed with IPPs in Srikakulam area was agreed in the 33<sup>rd</sup> SR SCM held on 20.10.2011 (minutes enclosed). 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 lines was 1660 MW (Max) (as per data available from NLDC for the period Jan-Mar'18). The Petitioner also submitted the details of upstream and downstream transmission system at Angul-Jharsuguda 765 kV D/C lines, LILO of Meramundli-Bolangir 400 kV at Angul, LILO of Meramundli-Talcher STPP, Srikakulam-Vemagiri 765 kV D/C and Srikakulam-Garividi 400 kV D/C.

13. BSP(H)CL has submitted that the petitioner has not furnished the Transmission Service Agreement (TSA) and as per Regulation 3(63) of the 2014 Tariff Regulations, the petitioner is required to submit the TSA. In response, the petitioner in its rejoinder has submitted that BSP(H)CL has not signed TSA despite the matter having been taken up time and again by the petitioner. In absence of the same, the model TSA holds good as per the order of the Commission.

14. BSP(H)CL further submitted that one of the agencies may be asked to represent the interest of consumer in the instant petition, as the representation and participation in the proceedings is integral part of hearing in terms of Section 94(3) of the Electricity Act, 2003. In response, the petitioner submitted that there is no need to appoint any agency as the petitioner has provided a copy of the petition to the beneficiaries and published notices in newspapers inviting comments of general public.

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

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

16. The petitioner has submitted the COD certificate, 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 in case of Asset-I.

17. 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 in respect of Asset I(A). Keeping in mind, the submissions of the petitioner supported by documentary evidence, we approve the COD of the Asset-I as 1.2.2017 for the purpose of tariff calculation.

**Capital Cost**

18. 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.”

19. The petitioner has submitted the Auditor Certificate dated 18.3.2017. 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)

| Apportioned Approved Cost | Apportioned Approved Cost as per RCE | Expenditure up to DOCO 01.02.2017 | Projected Add. Cap Exp. |         |         | Total Estimated Completion Cost |
|---------------------------|--------------------------------------|-----------------------------------|-------------------------|---------|---------|---------------------------------|
|                           |                                      |                                   | 2016-17                 | 2017-18 | 2018-19 |                                 |
| 40254.06                  | 57269.41                             | 45211.16                          | 772.88                  | 6347.63 | 1144.21 | 53475.88*                       |

\*The details of the capital cost certified by the auditor on the basis of information drawn from the records constituting the audited statement of accounts of PGCIL upto 31.12.2016.

20. KSEB submits that the increase of 39.71% for sub-station equipment and 27.07% in total capital cost including IDC is not justifiable.



21. BSP(H)CL submitted that the 'Element wise Breakup' for instant Asset shows the increase in almost all the elements and the reason cited for cost overrun are also a very casual reasons like 'higher rate received through competitive bidding' and as per requirements. The reasons for cost variations and cost over-run have not been properly explained.

22. TANGEDCO submitted that the petitioner has not followed the procedures and guidelines of this Commission as well the Govt. of India's "Manual on Policies and Procedure for purchase of goods" in awarding contracts under Domestic Competitive Bidding. The Commission vide its Suo-Motu order L-1/30/2010 dated 27.4.2010 has stated in the matter of benchmark capital cost for 400/ 765 kV transmission lines as the benchmark will be used for prudence check and variance analysis to identify the factors along with underlying reasons causing deviations in the claimed cost. The petitioner has neither followed the benchmark costing nor prudent method to estimate the cost. The cost escalation of individual elements claimed by the petitioner proves that the petitioner has not followed the IEEMA's formula for Price Variation. The statement in Form 5 submitted vide page 243 to 246 exhibits only the FR cost and actual cost, but the cost variation from FR to award cost is not disclosed. The auxiliary bus module for spare transformer and for spare reactor were not brought into beneficial use are being capitalized. The 765 kV Sub-station is a GIS modular type and modules can be added as and when they are required.

23. The petitioner has submitted that the completion cost is within the RCE. The petitioner vide affidavit dated 9.1.2018 submitted the details of capital cost variation and same is as follows:-



**(a) Price Variation (PV) (Net increase of ₹12957 lakh: 25.20 %)**

(i) There is an increase in the cost of the project by ₹12957 lakh which is 25.20 % of the approved cost. The contracts for various packages under this project were awarded to the lowest evaluated and responsive bidder, on the basis of competitive bidding after publication of NITs in leading newspapers. Thus, the award prices represent the lowest prices available at the time of bidding of various packages. Further, during the period from April, 2013 (first OBD under the project) to March, 2016 (period of major supplies), there has been inflationary trend in the prices of various input items for the project.

**b) Addition of items (Net Increase of ₹852 lakh: 1.66 %)**

There is an increase in the cost of the project due to addition of items by ₹852 lakh which is 1.66% of the approved cost. The establishment of 765/400 kV Srikakulam pooling station was initially envisaged under Srikakulam Part-A project at 400kV level and later to be upgraded at 765kV Level under Srikakulam -Part-C project. However, due to changed load generation scenario at Srikakulam, Srikakulam pooling station was decided to be charged at 765 kV level from the beginning. Provisions for control room building, transit camp etc. which were envisaged under Srikakulam-Part-A project could not be taken up. Accordingly, the same were considered under the present project. This has led to increase in the cost of the project by ₹852 lakh.

**c) Foreign Exchange Rate Variation (Net Increase of ₹3295lakh: 6.41 %)**

The project involves various contracts awarded in foreign currency. Therefore, increase in liability on account of FERV is ₹3295 lakh (6.41%). The details of exchange rates considered are as follows:-



| <b>Equivalent foreign exchange in INR</b> |             |
|---|-------------|
| <b>Approved</b>                           | <b>RCE</b>  |
| 54.28                                     | Varied from |
| 72.74                                     | Varied from |

**d) Variation in IDC/IEDC (Net decrease of ₹ 158 lakh: 0.31 %)**

**A. Decrease in IEDC**

As per the investment approval, the IEDC including contingencies for the project was estimated at ₹5482 lakh on normative bases whereas in the RCE, IEDC under the project works out to ₹2446 lakh based on actual/anticipated expenditure resulting in a decrease of ₹3036 lakh.

**B. Increase in IDC**

Interest During Construction (IDC) for the project as per approved DPR cost was estimated at ₹2879 lakh, whereas based on the actual and anticipated funds flow, the IDC for the project in the RCE ₹6074 lakh. Thus, there is an increase of ₹3194 lakh in IDC.

24. We have considered the submissions of the petitioner and respondents. It is observed that the apportioned approved cost based on RCE for the instant asset is ₹ 57269.41 lakh and the estimated completion cost as on 31.3.2019 as per the Auditor certificate is ₹53475.88 lakh. Therefore, there is no cost over-run.

**Time over-run**

25. As per investment approval (FR), the project was scheduled to be put under commercial operation within 27 months from the date of original Investment Approval (IA). The date of IA considered by the petitioner is 28.3.2013, accordingly the schedule COD works out to



28.6.2015 against which the asset got commissioned and put under commercial operation as on 1.2.2017. Hence, there is a delay of 19 months 4 days.

26. BSP (H)CL submitted that the delay in the execution of the transmission project is attributable to the petitioner & the reason for the delay which falls under controllable factors as per Regulation 12 of the Tariff Regulation, 2014. Accordingly, IDC and IEDC during the entire time run should not be allowed. In response the petitioner submitted that detailed justification along with the supporting documents for time-over-run is already given and the detailed chronology is also submitted to condone the delay in completion of subject assets as the same were out of the control of Petitioner in terms of Regulation 12(2)(i) of the 2014 Tariff Regulations.

27. Regarding the claim of the petitioner that the cyclonic storms Phailin and Hudhud damaged and delayed the construction work, KSEBL submitted that the petitioner has not provided any supporting documents showing the locations and extent of damages caused, no. of days of delay etc. with respect to the instant assets. It was further submitted that the delay in execution of the project has resulted in considerable increase in project cost and IDC. The delay occurred due to land acquisition issues is mainly related to construction of transmission line and not related to the instant assets, which as per regulation 12(1) of the 2014 Tariff Regulations, are treated as 'controllable factors' and hence entirely attributable to the petitioner. The cost escalation and increase in IDC owing to delay in commissioning of the instant asset due to lack of planning by the petitioner should not be passed on to the beneficiaries.

28. TANGEDCO has submitted that the petitioner has submitted that the delay is attributed



to the lack of coordination between the petitioner and the generation developers as well as other TSPs. The fact of the matter is that 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 commissioning of VTL's assets which attracted liquidated damages for a period of 156 days. TANGEDCO has further submitted that delay is attributed to the petitioner itself and in turn requested to disallow the IDC and IEDC for the delay period. In response, the petitioner submitted that the suggestion of the respondents is not practicable in the given circumstances but 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.

29. The petitioner has submitted that the delay in execution of the asset is mainly due to non-readiness of the 765 kV D/C Srikakulam-Angul transmission line which was essential for operation purpose. Further the petitioner vide affidavit dated 31.10.2016 has submitted that the delay in implementation of the instant assets is mainly attributable to forest clearance, RoW issues during construction of transmission line, delay in land acquisition at Srikakulam and severe ROW issues at Angul, law and order problem at Angul, cyclone-Phailin and Hudhud. 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, highly disturbed area, which required number of clearance 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 survey for 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:-

| Sl. 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 their 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 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 persists at location no: 60/1 from 7.11.2014 till 10.5.2016.

The following details about RoW issues alongwith the related court cases:-

- (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 filed 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:-

| S. 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  |

30. We have considered the submissions of TANGEDCO, KSEB, BSP (H)CL and the petitioner with respect to the time over-run. The petitioner has submitted that the asset is delayed due to non-readiness of the 765 kV D/C Srikakulam-Angul transmission line. With regard to delay in transmission line the petitioner has submitted that delay in forest



clearance, land acquisition at Srikakulam, ROW issues at Angul substation, ROW in construction of 765 kV D/C Srikakulam-Angul transmission line, statutory clearances for construction of 765 kV D/C Srikakulam-Angul transmission line, cyclonic storm, Phailin and extended monsoon. The petitioner has submitted that due to unavoidable delay in transmission line, the petitioner has shifted the commissioning of assets matching with associated line. The asset covered in the instant petition is 765 kV line bays and switchable line reactors and bus reactors. The assets are associated with the 765 kV D/C Srikakulam-Angul transmission line. The time delay due to transmission line is already taken cognizance in Petition No 230/TT/2016 and the time delay of 19 months 4 days has been condoned in Petition No 230/TT/2016. We agree with the submission of the petitioner and the assets covered in the instant petition are delayed due to non readiness of 765 kV transmission line and accordingly, the time delay of 19 months 4 days is beyond the control of the petition and the same has been condoned.

**Interest During Construction (IDC)**

31. The petitioner, vide Auditor's certificates dated 18.3.2017 has claimed IDC of ₹ 4451.03 lakh on accrual basis. The petitioner further submitted IDC statement which mentions that out of ₹4451.03 lakh, the amount of IDC discharged up to COD is ₹ 3874.78 lakh and balance IDC of ₹21.48 lakh and ₹554.76 lakh has been discharged during 2016-17 and 2017-18 respectively.

32. The IDC statement includes SBI pertaining to different quarters with different codes no. Petitioner has shown multiple drawls with 8.90% as interest for SBI. Hence, we have considered the same rate of interest as it was given in Form-9C. 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. Therefore, the IDC claimed are provisionally allowed and the petitioner is directed to submit the detailed IDC computation statement explaining/reconciling the deviations as noted above at the time of true up.

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

(₹ in lakh )

| IDC Claimed as per the Auditor's Certificate (Accrual basis) | Accrued 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                             |
| 4451.03  | 4284.77                             | 166.26  | 575.21   | 3709.56                             |

\* The Un-discharge portion of IDC has been considered as ACE during the year of discharge

34. 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.

### **Treatment of IEDC**

35. The petitioner vide Auditor's certificate dated 18.3.2017 has claimed Incidental Expenditure during Construction (IEDC) of ₹1025.47 lakh. The IEDC as per the abstract cost estimate is 10.75% of the estimated hard cost which has been considered as the maximum limit for allowing IEDC. Thus, claimed IEDC of ₹1025.47 lakh is within the limit and the same has been considered as allowed IEDC.



## **Initial spares**

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

### **“13. Initial Spares**

Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(d) Transmission system

(i) Transmission line - 1.00%

(ii) Transmission Sub-station (Green Field) - 4.00%

(iii) Transmission Sub-station (Brown Field) - 6.00%

(iv) Series Compensation devices and HVDC Station - 4.00%

(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.”

37. The petitioner has claimed ₹1290.74 lakh as initial spare pertaining to sub-station. The petitioner's claim of ₹1290.74 lakh towards initial spare is within the ceiling limit of 4.00% of



the capital cost as specified in the 2014 Tariff Regulations. Petitioner vide affidavit dated 16.02.2018 has submitted the year-wise discharge details of the spares.

38. Accordingly, the petitioner's claim is allowed and considered for the purpose of tariff in this order. The details of initial spares allowed are given below:-

(₹ in lakh )

| Total Spare | Initial spare up to COD and included in Auditor certificate up to COD | Initial spare included in Add Cap of 2016-17 | Initial spare included in Add cap of 2017-18 |
|-------------|---|--|--|
| 1290.74     | 907.24  | 234.66                                       | 148.84                                       |

### **Capital Cost allowed as on COD**

39. Based on the above, the capital cost allowed as on COD under Regulation 9(2) of 2014 Tariff Regulation is summarized as under:-

(₹ in lakh )

| Capital cost as on COD claimed by Petitioner | Accrued IDC dis-allowed due to Computational difference | Un-discharged IDC as on COD | IEDC Disallowed on COD | Excess Initial spares | Capital Cost as on COD considered for tariff calculation |
|--|---|-----------------------------|------------------------|-----------------------|--|
| 2  | 3   | 4                           | 5                      | 6                     | 7=(2-3-4-5-6)  |
| 45211.16                                     | 166.26  | 575.21                      | 0.00                   | 0.00                  | 44469.69   |

### **Additional Capital Expenditure**

40. 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.”

41. 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”.

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

43. The petitioner has claimed ACE based on the cost certified by auditor. In addition the petitioner has claimed the ACE towards discharge of IDC liability. Considering both the petitioner has submitted revised Form 7 vide affidavit date 18.07.2017. The ACE claimed in Auditor certificate and Form 7 is summarized below:-

| (₹ in lakh )   |            |                                  |                |                |
|--|------------|----------------------------------|----------------|----------------|
| Particulars  | Regulation | 2016-17<br>(COD to<br>31.3.2017) | 2017-18        | 2018-19        |
| 1. Discharge of un-discharge liabilities on other than IDC                     | 14(1)(i)   | 772.88                           | 4402.17        | 0.00           |
| 2. Add cap towards works deferred for execution (by addition into gross block) | 14(1)(ii)  | 0.00                             | 1945.46        | 1144.21        |
| 3. Total add-cap as per Auditor Certificate (excluding IDC liability)(1+2)     |            | <b>772.88</b>                    | <b>6348.66</b> | <b>1144.21</b> |
| 4. Discharge of IDC Liability -(4)   | 14(1)(i)   | 21.48                            | 554.76         | 0.00           |
| <b>5. Total add-cap claimed as per Form 7 (3+4)</b>                            |            | <b>794.36</b>                    | <b>6902.39</b> | <b>1144.21</b> |



44. As discussed in IDC para above, the allowable un-discharge IDC as on COD has been allowed as Additional capital expenditure during the year of discharge. The balance liability amount has been considered as liability on other than IDC. Both these amounts are allowed provisionally which shall be reviewed at the time of true up based on actual discharge duly certified by the Auditor.

45. The additional capital expenditure approved for the period from COD to 31.3.2019 which 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 other than IDC  | 14(1)(i)   | 772.88        | 4402.17        | 0.00           |
| Add cap to the extent of unexecuted work  | 14(1)(ii)  | 0.00          | 1945.46        | 1144.21        |
| Discharge of undercharge liabilities-IDC. | 14(1)(i)   | 21.48         | 553.73         | 0.00           |
| <b>Total allowable add-cap</b>            |            | <b>794.36</b> | <b>6901.36</b> | <b>1144.21</b> |

### **Capital Cost summary from COD to 31.3.2019**

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

(₹ in lakh )

| Capital cost allowed as on COD | Additional Capitalisation |         |         | Estimated completion cost as on 31.3.2019 |
|--------------------------------|---------------------------|---------|---------|---|
|                                | 2016-17                   | 2017-18 | 2018-19 |   |
| 44469.69                       | 794.36                    | 6901.36 | 1144.21 | 53309.62                                  |

### **Debt- Equity ratio**

47. 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.”

48. 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:-

(₹ in lakh)

| Particulars   | As on COD       |               | As on 31.3.2019 |               |
|---------------|-----------------|---------------|-----------------|---------------|
|               | Amount          | (%)           | Amount          | (%)           |
| <b>Debt</b>   | 31128.78        | 70.00         | 37316.73        | 70.00         |
| <b>Equity</b> | 13340.91        | 30.00         | 15992.89        | 30.00         |
| <b>Total</b>  | <b>44469.69</b> | <b>100.00</b> | <b>53309.62</b> | <b>100.00</b> |

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

49. 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.”

50. 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.

51. BSPHCL submitted that the petitioner has not mentioned the effective tax rate for each year of tariff period for all the assets. The petitioner may be directed to furnish details in the working of effective tax rate along with tax audit report for financial year 2014-15 and the reasons for opting MAT. The petitioner may also be directed to submit the details of deferred tax liability and its treatment in the books of account for the period 2014-19. Since, the petitioner is entitled for Tax Holiday for new transmission project, the petitioner may be directed to supply the information from the date the petitioner intends to claim the benefits of section 80 IA of the Income Tax Act, 1961. In response, the petitioner submitted that the as per Regulation 25 (2) of 2014 Tariff Regulations, the MAT rate shall be considered as the effective tax rate. Since the asset is commissioned during 2014-15, the final assessment of tax is yet to be finalized. Any over/under recovery of grossed up rate on ROE is subject to truing up based on the actual tax paid along with any additional tax or interest. The tax audit report will be submitted at the time of truing up. Regarding claiming tax benefit under section 80 IA of income Tax Act, the petitioner is grossing up the ROE with MAT, any tax



benefit already factored into it.

52. We have considered the submissions made by the petitioner and respondent. 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                            | 13340.91      | 13579.21       | 15649.62       |
| Addition due to Additional Capitalisation | 238.31        | 2070.41        | 343.26         |
| Closing Equity                            | 13579.21      | 15649.62       | 15992.89       |
| Average Equity                            | 13460.06      | 14614.42       | 15821.25       |
| Return on Equity (Base Rate )             | 15.50%        | 15.50%         | 15.50%         |
| Tax rate for the year 2013-14 (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)                | <b>426.66</b> | <b>2865.89</b> | <b>3102.55</b> |

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

53. 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.”

54. 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.

55. 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.

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

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

(₹ in lakh)

| Particulars                               | 2016-17<br>(pro-rata) | 2017-18        | 2018-19        |
|---|-----------------------|----------------|----------------|
| Gross Normative Loan                      | 31128.78              | 31684.83       | 36515.79       |
| Cumulative Repayment upto Previous Year   | 0.00                  | 375.72         | 2895.34        |
| Net Loan-Opening                          | 31128.78              | 31309.12       | 33620.44       |
| Addition due to Additional Capitalisation | 556.05                | 4830.95        | 800.95         |
| Repayment during the year                 | 375.72                | 2519.62        | 2745.04        |
| Net Loan-Closing                          | 31309.12              | 33620.44       | 31676.36       |
| Average Loan                              | 31218.95              | 32464.78       | 32648.40       |
| Weighted Average Rate of Interest on Loan | 8.6049%               | 8.5958%        | 8.5861%        |
| <b>Interest on Loan</b>                   | <b>434.23</b>         | <b>2790.61</b> | <b>2803.22</b> |

### **Depreciation**

58. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as below:-

#### **"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.”

59. 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.

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

| Particulars  | (₹ in lakh)           |                |                |
|--|-----------------------|----------------|----------------|
|  | 2016-17<br>(pro-rata) | 2017-18        | 2018-19        |
| Gross Block as on COD  | 44469.69              | 45264.05       | 52165.41       |
| Addition during 2014-19 due to Projected Additional Capitalisation | 794.36                | 6901.36        | 1144.21        |
| Gross Block as on 31 <sup>st</sup> March                           | 45264.05              | 52165.41       | 53309.62       |
| Average Gross Block  | 44866.87              | 48714.73       | 52737.51       |
| Rate of Depreciation   | 5.1806%               | 5.1722%        | 5.2051%        |
| Depreciable Value  | 40380.18              | 43843.25       | 47463.76       |
| Remaining Depreciable Value  | 40380.18              | 43467.54       | 44568.42       |
| <b>Depreciation</b>  | <b>375.72</b>         | <b>2519.62</b> | <b>2745.04</b> |

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

61. 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 |
| <b>Asset-I (COD-01.02.2017)</b> |             |         |         |         |         |
| 765 kV bays                     | 84.42       | 87.22   | 90.12   | 93.11   | 96.20   |

62. The petitioner vide affidavit dated 20.3.2017 and auditor certificated dated 18.3.2017 has claimed following O&M Expenses for 2014-19:-

| (₹ in lakh) |         |         |
|-------------|---------|---------|
| 2016-17     | 2017-18 | 2018-19 |
| 135.18      | 837.99  | 865.80  |



63. 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:-

**(₹ in lakh)**

| <b>2016-17</b> | <b>2017-18</b> | <b>2018-19</b> |
|----------------|----------------|----------------|
| 72.84          | 465.55         | 481.00         |

64. 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.

65. BSP(H)CL in its reply has submitted that the increase in the wages should be taken care by improving the productivity levels of the petition and the beneficiaries should not be burdened. The petitioner in its rejoinder has submitted that the wage revision of the employees of the petitioner company is due with effect from 1.1.2017 and actual impact of wage hike which will be effective from a future date has also not been factored in fixation of the normative O&M rates prescribed for the tariff block 2014-19. The scheme of wage revision applicable to CPSUs is binding on the petitioner and hence the petitioner would approach the Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike from 1.1.2017 onwards.



66. KSEB in its reply has submitted that there is no provision in the 2014 Tariff Regulations to claim O&M Expenses over and above the same allowed under Regulation 29 of the 2014 Tariff Regulations. The Commission has allowed the normative O&M Expenses considering the past actual performance of the plant and also duly factoring the inflation over and above then normative O&M Expenses subsequently. KSEB further submitted that the impact of wage revision shall only be given after seeing impact of one full year and if the O&M norms provided under Regulations are inadequate to cover all justifiable O&M Expenses for the particular year, then balance amount could be considered for reimbursement.

67. 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.

68. 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.

69. 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)**

70. Clause 1(c) of Regulation 28 and Clause 5 of Regulation 3 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;”

71. 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) **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.

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

(₹ in lakh)

| Particulars        | 2016-17      | 2017-18       | 2018-19       |
|--------------------|--------------|---------------|---------------|
| Maintenance Spares | 121.67       | 125.70        | 129.87        |
| O & M expenses     | 67.59        | 69.83         | 72.15         |
| Receivables        | 1445.09      | 1539.36       | 1625.08       |
| Total              | 1634.35      | 1734.89       | 1827.10       |
| Interest Rate      | 12.80%       | 12.80%        | 12.80%        |
| <b>Interest</b>    | <b>33.82</b> | <b>222.07</b> | <b>233.87</b> |

**Transmission charges**

73. The transmission charges being allowed for the instant assets are summarized hereunder:-

(₹ in lakh)

| Particulars                 | 2016-17<br>(pro-rata) | 2017-18        | 2018-19        |
|-----------------------------|-----------------------|----------------|----------------|
| Depreciation                | 375.72                | 2519.62        | 2745.04        |
| Interest on Loan            | 434.23                | 2790.61        | 2803.22        |
| Return on equity            | 426.66                | 2865.89        | 3102.55        |
| Interest on Working Capital | 33.82                 | 222.07         | 233.87         |
| O & M Expenses              | 131.11                | 837.99         | 865.80         |
| <b>Total</b>                | <b>1401.54</b>        | <b>9236.17</b> | <b>9750.47</b> |



74. 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**

75. 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. BSPHCL has submitted that filing fee and other expenses may not be allowed. Further as per Commissions order dated 11.9.2008 in Petition No. 129/2005, the Central Power Sector undertakings are statutory required to approach the Commission for determination and approval of the tariff. 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**

76. 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**

77. 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**

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

79. TANGEDCO in its reply submitted as follows:-

- a. 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.
- b. 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.



c. 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 30th 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.

d. 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 be commissioned, the transmission charges should be collected from the generators and no PoC charges should be imposed on the beneficiaries.

80. In response, the petitioner has submitted that while regulatory approval for 765/400 kV pooling station at Srikakulam was obtained with 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.



81. 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 import 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 as per the data available from NLDC.

82. 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 charged at 765 kV. At Vemagiri pooling station this power is stepped down to 400 kV and connected 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.

83. 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 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.

84. This order disposes of Petition No. 231/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> |
|----------|--|--------------------------------------|----------------|----------------|
| <b>1</b> | <b>SBI Loan 1.5.2014</b>                     |                                      |                |                |
|          | Gross loan opening                           | 12108.85                             | 12108.85       | 12108.85       |
|          | Cumulative Repayment upto COD /previous year | 0.00                                 | <b>0.00</b>    | <b>0.00</b>    |
|          | Net Loan-Opening                             | 12108.85                             | 12108.85       | 12108.85       |
|          | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Repayment during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Net Loan-Closing                             | 12108.85                             | 12108.85       | 12108.85       |
|          | Average Loan                                 | 12108.85                             | 12108.85       | 12108.85       |
|          | Rate of Interest                             | 8.90%                                | 8.90%          | 8.90%          |
|          | Interest                                     | 1077.69                              | 1077.69        | 1077.69        |
|          | Rep Schedule                                 | NA                                   |                |                |
| <b>2</b> | <b>SBI Loan (Oct 2013-Dec 2013)</b>          |                                      |                |                |
|          | Gross loan opening                           | 70.00                                | 70.00          | 70.00          |
|          | Cumulative Repayment upto COD /previous year | 0.00                                 | 0.00           | 0.00           |
|          | Net Loan-Opening                             | 70.00                                | 70.00          | 70.00          |
|          | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Repayment during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Net Loan-Closing                             | 70.00                                | 70.00          | 70.00          |
|          | Average Loan                                 | 70.00                                | 70.00          | 70.00          |
|          | Rate of Interest                             | 8.90%                                | 8.90%          | 8.90%          |
|          | Interest                                     | 6.23                                 | 6.23           | 6.23           |
|          | Rep Schedule                                 | NA                                   |                |                |
| <b>3</b> | <b>Bond XL</b>                               |                                      |                |                |
|          | Gross loan opening                           | 23.00                                | 23.00          | 23.00          |
|          | Cumulative Repayment upto COD/previous year  | 1.92                                 | 1.92           | 3.83           |
|          | Net Loan-Opening                             | 21.08                                | 21.08          | 19.17          |
|          | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Repayment during the year                    | 0.00                                 | 1.92           | 1.92           |
|          | Net Loan-Closing                             | 21.08                                | 19.17          | 17.25          |
|          | Average Loan                                 | 21.08                                | 20.13          | 18.21          |
|          | Rate of Interest                             | 9.30%                                | 9.30%          | 9.30%          |
|          | Interest                                     | 1.96                                 | 1.87           | 1.69           |
|          | Rep Schedule                                 | 12 annual instalments from 28.6.2016 |                |                |
| <b>4</b> | <b>Bond XLI</b>                              |                                      |                |                |
|          | Gross loan opening                           | 46.00                                | 46.00          | 46.00          |
|          | Cumulative Repayment upto COD/previous year  | 3.83                                 | 3.83           | 7.67           |
|          | Net Loan-Opening                             | 42.17                                | 42.17          | 38.33          |
|          | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|          | Repayment during the year                    | 0.00                                 | 3.83           | 3.83           |
|          | Net Loan-Closing                             | 42.17                                | 38.33          | 34.50          |
|          | Average Loan                                 | 42.17                                | 40.25          | 36.42          |



|          |  |  |        |        |
|----------|--|--|--------|--------|
|          | Rate of Interest                             | 8.85%  | 8.85%  | 8.85%  |
|          | Interest                                     | 3.73   | 3.56   | 3.22   |
|          | Rep Schedule                                 | 12 annual instalment from 19.10.2016                       |        |        |
| <b>5</b> | <b>Bond XLII</b>                             |  |        |        |
|          | Gross loan opening                           | 14.00  | 14.00  | 14.00  |
|          | Cumulative Repayment upto COD /previous year | 0.00   | 0.00   | 0.00   |
|          | Net Loan-Opening                             | 14.00  | 14.00  | 14.00  |
|          | Additions during the year                    | 0.00   | 0.00   | 0.00   |
|          | Repayment during the year                    | 0.00   | 0.00   | 0.00   |
|          | Net Loan-Closing                             | 14.00  | 14.00  | 14.00  |
|          | Average Loan                                 | 14.00  | 14.00  | 14.00  |
|          | Rate of Interest                             | 8.80%  | 8.80%  | 8.80%  |
|          | Interest                                     | 1.23   | 1.23   | 1.23   |
|          | Rep Schedule                                 | 13.3.2023 Bullet Payment                                   |        |        |
| <b>6</b> | <b>Bond XLIII</b>                            |  |        |        |
|          | Gross loan opening                           | 91.00  | 91.00  | 91.00  |
|          | Cumulative Repayment upto COD /previous year | 0.00   | 0.00   | 7.58   |
|          | Net Loan-Opening                             | 91.00  | 91.00  | 83.42  |
|          | Additions during the year                    | 0.00   | 0.00   | 0.00   |
|          | Repayment during the year                    | 0.00   | 7.58   | 7.58   |
|          | Net Loan-Closing                             | 91.00  | 83.42  | 75.83  |
|          | Average Loan                                 | 91.00  | 87.21  | 79.63  |
|          | Rate of Interest                             | 7.93%  | 7.93%  | 7.93%  |
|          | Interest                                     | 7.22   | 6.92   | 6.31   |
|          | Rep Schedule                                 | 12 annual instalments from 20.5.2017                       |        |        |
| <b>7</b> | <b>Bond XLIV</b>                             |  |        |        |
|          | Gross loan opening                           | 169.00   | 169.00 | 169.00 |
|          | Cumulative Repayment upto COD /previous year | 0.00   | 0.00   | 0.00   |
|          | Net Loan-Opening                             | 169.00   | 169.00 | 169.00 |
|          | Additions during the year                    | 0.00   | 0.00   | 0.00   |
|          | Repayment during the year                    | 0.00   | 0.00   | 56.33  |
|          | Net Loan-Closing                             | 169.00   | 169.00 | 112.67 |
|          | Average Loan                                 | 169.00   | 169.00 | 140.83 |
|          | Rate of Interest                             | 8.70%  | 8.70%  | 8.70%  |
|          | Interest                                     | 14.70  | 14.70  | 12.25  |
|          | Rep Schedule                                 | 3 equal annual instalments 15.7.2018, 15.7.2023, 15.7.2028 |        |        |
| <b>8</b> | <b>Bond XLV</b>                              |  |        |        |
|          | Gross loan opening                           | 84.00  | 84.00  | 84.00  |
|          | Cumulative Repayment upto COD /previous year | 0.00   | 0.00   | 7.00   |
|          | Net Loan-Opening                             | 84.00  | 84.00  | 77.00  |
|          | Additions during the year                    | 0.00   | 0.00   | 0.00   |
|          | Repayment during the year                    | 0.00   | 7.00   | 7.00   |
|          | Net Loan-Closing                             | 84.00  | 77.00  | 70.00  |
|          | Average Loan                                 | 84.00  | 80.50  | 73.50  |
|          | Rate of Interest                             | 9.65%  | 9.65%  | 9.65%  |



|           |  |   |         |         |
|-----------|--|---|---------|---------|
|           | Interest                                     | 8.11  | 7.77    | 7.09    |
|           | Rep Schedule                                 | 12 annual instalments from 28.2.2018  |         |         |
| <b>9</b>  | <b>Bond XLVI</b>                             |   |         |         |
|           | Gross loan opening                           | 4933.00   | 4933.00 | 4933.00 |
|           | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Opening                             | 4933.00   | 4933.00 | 4933.00 |
|           | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|           | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Closing                             | 4933.00   | 4933.00 | 4933.00 |
|           | Average Loan                                 | 4933.00   | 4933.00 | 4933.00 |
|           | Rate of Interest                             | 9.30%   | 9.30%   | 9.30%   |
|           | Interest                                     | 458.77  | 458.77  | 458.77  |
|           | Rep Schedule                                 | Redeemable at par in 3 equal instalments on 4.9.2019, 4.9.2024 and 4.9.2029               |         |         |
| <b>10</b> | <b>Bond XLVII</b>                            |   |         |         |
|           | Gross loan opening                           | 1973.00   | 1973.00 | 1973.00 |
|           | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Opening                             | 1973.00   | 1973.00 | 1973.00 |
|           | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|           | Repayment during the year                    | 0.00  | 0.00    | 164.42  |
|           | Net Loan-Closing                             | 1973.00   | 1973.00 | 1808.58 |
|           | Average Loan                                 | 1973.00   | 1973.00 | 1890.79 |
|           | Rate of Interest                             | 8.93%   | 8.93%   | 8.93%   |
|           | Interest                                     | 176.19  | 176.19  | 168.85  |
|           | Rep Schedule                                 | Annual instalments from 20.10.2018  |         |         |
| <b>11</b> | <b>Bond XLVIII</b>                           |   |         |         |
|           | Gross loan opening                           | 1287.00   | 1287.00 | 1287.00 |
|           | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Opening                             | 1287.00   | 1287.00 | 1287.00 |
|           | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|           | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Closing                             | 1287.00   | 1287.00 | 1287.00 |
|           | Average Loan                                 | 1287.00   | 1287.00 | 1287.00 |
|           | Rate of Interest                             | 8.20%   | 8.20%   | 8.20%   |
|           | Interest                                     | 105.53  | 105.53  | 105.53  |
|           | Rep Schedule                                 | Redeemable at par in 4 equal instalments on 23.1.2020, 23.1.2022, 23.1.2025 and 23.1.2030 |         |         |
| <b>12</b> | <b>Bond XLIX</b>                             |   |         |         |
|           | Gross loan opening                           | 175.00  | 175.00  | 175.00  |
|           | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Opening                             | 175.00  | 175.00  | 175.00  |
|           | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|           | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|           | Net Loan-Closing                             | 175.00  | 175.00  | 175.00  |
|           | Average Loan                                 | 175.00  | 175.00  | 175.00  |



|    |  |   |         |         |
|----|--|---|---------|---------|
|    | Rate of Interest                             | 8.15%   | 8.15%   | 8.15%   |
|    | Interest                                     | 14.26   | 14.26   | 14.26   |
|    | Rep Schedule                                 | Redeemable at par in 3 equal instalments on 9.3.2020, 9.3.2025 and 9.3.2030 |         |         |
| 13 | <b>Bond L</b>                                |   |         |         |
|    | Gross loan opening                           | 432.00  | 432.00  | 432.00  |
|    | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Opening                             | 432.00  | 432.00  | 432.00  |
|    | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|    | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Closing                             | 432.00  | 432.00  | 432.00  |
|    | Average Loan                                 | 432.00  | 432.00  | 432.00  |
|    | Rate of Interest                             | 8.40%   | 8.40%   | 8.40%   |
|    | Interest                                     | 36.29   | 36.29   | 36.29   |
|    | Rep Schedule                                 | 12 annual instalments from 27.5.2019  |         |         |
| 14 | <b>Bond LI</b>                               |   |         |         |
|    | Gross loan opening                           | 4276.00   | 4276.00 | 4276.00 |
|    | Cumulative Repayment upto DOCO/previous year | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Opening                             | 4276.00   | 4276.00 | 4276.00 |
|    | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|    | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Closing                             | 4276.00   | 4276.00 | 4276.00 |
|    | Average Loan                                 | 4276.00   | 4276.00 | 4276.00 |
|    | Rate of Interest                             | 8.40%   | 8.40%   | 8.40%   |
|    | Interest                                     | 359.18  | 359.18  | 359.18  |
|    | Rep Schedule                                 | 12 annual instalments from 14.9.2019  |         |         |
| 15 | <b>Bond LIII</b>                             |   |         |         |
|    | Gross loan opening                           | 348.00  | 348.00  | 348.00  |
|    | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Opening                             | 348.00  | 348.00  | 348.00  |
|    | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|    | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Closing                             | 348.00  | 348.00  | 348.00  |
|    | Average Loan                                 | 348.00  | 348.00  | 348.00  |
|    | Rate of Interest                             | 8.13%   | 8.13%   | 8.13%   |
|    | Interest                                     | 28.29   | 28.29   | 28.29   |
|    | Rep Schedule                                 | 12 annual instalments from 25.4.2020  |         |         |
| 16 | <b>Bond LIV</b>                              |   |         |         |
|    | Gross loan opening                           | 707.00  | 707.00  | 707.00  |
|    | Cumulative Repayment upto COD /previous year | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Opening                             | 707.00  | 707.00  | 707.00  |
|    | Additions during the year                    | 0.00  | 0.00    | 0.00    |
|    | Repayment during the year                    | 0.00  | 0.00    | 0.00    |
|    | Net Loan-Closing                             | 707.00  | 707.00  | 707.00  |
|    | Average Loan                                 | 707.00  | 707.00  | 707.00  |
|    | Rate of Interest                             | 7.97%   | 7.97%   | 7.97%   |



|    |  |                                      |                |                |
|----|--|--------------------------------------|----------------|----------------|
|    | Interest                                     | 56.35                                | 56.35          | 56.35          |
|    | Rep Schedule                                 | 12 annual instalments from 15.7.2021 |                |                |
| 17 | <b>Bond LV</b>                               |                                      |                |                |
|    | Gross loan opening                           | 1854.00                              | 1854.00        | 1854.00        |
|    | Cumulative Repayment upto COD /previous year | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Opening                             | 1854.00                              | 1854.00        | 1854.00        |
|    | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|    | Repayment during the year                    | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Closing                             | 1854.00                              | 1854.00        | 1854.00        |
|    | Average Loan                                 | 1854.00                              | 1854.00        | 1854.00        |
|    | Rate of Interest                             | 7.55%                                | 7.55%          | 7.55%          |
|    | Interest                                     | 139.98                               | 139.98         | 139.98         |
|    | Rep Schedule                                 | Redeemable at par on 21.9.2031       |                |                |
| 18 | <b>Bond LVI</b>                              |                                      |                |                |
|    | Gross loan opening                           | 867.00                               | 867.00         | 867.00         |
|    | Cumulative Repayment upto COD /previous year | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Opening                             | 867.00                               | 867.00         | 867.00         |
|    | Additions during the year                    | 0.00                                 | 0.00           | 0.00           |
|    | Repayment during the year                    | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Closing                             | 867.00                               | 867.00         | 867.00         |
|    | Average Loan                                 | 867.00                               | 867.00         | 867.00         |
|    | Rate of Interest                             | 7.36%                                | 7.36%          | 7.36%          |
|    | Interest                                     | 63.81                                | 63.81          | 63.81          |
|    | Rep Schedule                                 |                                      |                |                |
| 19 | <b>Bond LVII</b>                             |                                      |                |                |
|    | Gross loan opening                           | 1786.58                              | 1801.62        | 2189.96        |
|    | Cumulative Repayment upto COD /previous year | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Opening                             | 1786.58                              | 1801.62        | 2189.96        |
|    | Additions during the year                    | 15.04                                | 388.34         | 0.00           |
|    | Repayment during the year                    | 0.00                                 | 0.00           | 0.00           |
|    | Net Loan-Closing                             | 1801.62                              | 2189.96        | 2189.96        |
|    | Average Loan                                 | 1794.10                              | 1995.79        | 2189.96        |
|    | Rate of Interest                             | 7.20%                                | 7.20%          | 7.20%          |
|    | Interest                                     | 129.18                               | 143.70         | 157.68         |
|    | Rep Schedule                                 |                                      |                |                |
|    | <b>Total Loan</b>                            |                                      |                |                |
|    | Gross loan opening                           | 31244.43                             | 31259.47       | 31647.81       |
|    | Cumulative Repayment upto COD /previous year | 5.75                                 | 5.75           | 26.08          |
|    | Net Loan-Opening                             | 31238.68                             | 31253.72       | 31621.73       |
|    | Additions during the year                    | 15.04                                | 388.34         | 0.00           |
|    | Repayment during the year                    | 0.00                                 | 20.33          | 241.08         |
|    | Net Loan-Closing                             | 31253.72                             | 31621.73       | 31380.64       |
|    | Average Loan                                 | 31246.20                             | 31437.72       | 31501.19       |
|    | Rate of Interest                             | 8.6049%                              | 8.5958%        | 8.5861%        |
|    | <b>Interest</b>                              | <b>2688.70</b>                       | <b>2702.32</b> | <b>2704.72</b> |

