CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 235/TT/2016

Coram:

Shri Gireesh B Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member

Date of Order : 19.09.2017

In the matter of:

Approval of transmission tariff of Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV) along with Bay extensions at Salem PS and Tuticorin Pooling Station and 80 MVAR Line Reactors at each end of both circuits of Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV) (COD: 13.11.2016) under "Transmission System associated with Common System Associated with Coastal Energen Private Limited and Ind-Bharat Power (Madras) Limited LTOA Generation Projects in Tuticorin Area-Part-B" in Southern Region from COD to 31.3.2019 under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And in the matter of:

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

Vs

1. Karnataka Power Transmission Corporation Limited,
   (KPTCL), Kaveri Bhawan,
   Bangalore-560 009

2. Transmission Corporation of Andhra Pradesh Limited,
   (APTRANSCO), Vidyut Soudha,
   Hyderabad-500 082

3. Kerala State Electricity Board (KSEB),
   Vaidyuthi Bhavanam,
   Pattom, Thiruvananthapuram-695 004

4. Tamil Nadu Electricity Board,
   NPKRR Maaligai, 800, Anna Salai,
   Chennai-600 002

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

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

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

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

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

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

11. Bangalore Electricity Supply Company Limited,
    (BESCOM), Corporate Office, K. R. Circle,
    Bangalore-560 001, Karnataka

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

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

14. MESCOM Corporate Office,
    Paradigm Plaza, AB Shetty Circle,
    Mangalore-575 001, Karnataka

15. Chamundeswari Electricity Supply Corporation Limited,
    (CESC), # 927, L J Avenue, Ground Floor,
    New Kantharaj Urs Road,
    Saraswatipuram, Mysore-570009, Karnataka

16. Coastal Energen Private Limited,
    5th Floor, Buhari Towers, No. 4, Moores Road,
    Chennai-600 006, Tamil Nadu

17. Ind-Bharath Power (Madras) Limited,
    Plot No. 30-A, Road No. 1,
    Film Nagar, Jubilee Hills,
    Hyderabad-500 033, Andhra Pradesh

18. Transmission Corporation of Telangana Limited,
    Vidhyut Sudha, Khairatabad,
    Hyderabad-500 082 **……Respondents**

For petitioner : Shri S.K. Venkatesan, PGCIL
Shri S.S. Raju, PGCIL
Shri Jasbir Singh, PGCIL
Shri Aryaman Saxena, PGCIL
Shri M.M. Mondal, PGCIL

For respondents : Shri S. Vallinayagam, Advocate for TANGEDCO
Ms. E. Shyamala, TANGEDCO
Shri R. Kathiravan, TANGEDCO

ORDER

The present petition has been filed by Power Grid Corporation of India Limited ("the petitioner") seeking approval of transmission charges for "Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV) along with Bay extensions at Salem PS and Tuticorin Pooling Station and 80 MVAR Line Reactors at each end of both circuits of Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV) (hereinafter referred to as "transmission assets") under "Transmission System associated with Common System Associated with Coastal

Energen Private Limited and Ind-Bharat Power (Madras) Limited LTOA Generation Projects in Tuticorin Area-Part-B" in Southern Region, from the date of commercial operation to 31.3.2019 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. This order has been issued after considering petitioner's affidavits dated 23.1.2017, 10.3.2017 and 29.8.2017.

3. The petitioner has been entrusted with the implementation of "Transmission System associated with Common System Associated with Coastal Energen Private Limited and Ind-Bharat Power (Madras) Limited LTOA Generation Projects in Tuticorin Area-Part-B". The scope of the scheme was discussed and agreed in the 29th and 30th SCM of Southern Region Constituents held on 27.8.2009 and 13.4.2010 respectively. The Investment Approval (IA) was accorded by the Board of Directors of the petitioner vide Memorandum No. C/CP/LTA Tuticorin Part B dated 19.9.2011 at an estimated cost of ₹194013 lakh including an IDC of ₹120.92 lakh (based on 1st Quarter, 2011 price level). The Revised Cost Estimates (RCE) was accorded approval by the Board of Directors of the petitioner company vide Memorandum No. C/CP/PA1617-02-0T-RCE008 dated 7.3.2017 for 337th meeting held on 9.2.2017, at an estimated cost of ₹2702.65 lakh including IDC of ₹378.91 lakh (based on June, 2016 price level).

4. The final scope of work covered under the project approved vide RCE dated 7.3.2017 is as under:-

Transmission Lines

a) Tuticorin Pooling Station-Salem (Dharmapuri) Pooling Station 765 kV D/C line (initially charged at 400 kV);
b) Salem (Dharmapuri) Pooling Station-Salem 400 kV D/C quad Line;
c) Salem (Dharmapuri) Pooling Station-Tumkur (Vasantnarsapur) (formerly Madhugiri) Pooling Station 765 kV S/C Line (initially to be charged at 400 kV).

Sub-stations

a) Establishment of 765/400 kV Pooling Station at Salem (Dharmapuri) (Initially to be charged at 400 kV);
b) Extension of 765/400 kV Tuticorin Pooling Station;
c) Extension of 400/220 kV Tumkur (Vasantnarsapur) (formerly Madhugiri) Pooling Station.
d) Extension of 400/220 kV Salem Sub-station.

Reactive Compensation
Line Reactors (400 kv)

I. 80 MVAR line reactors at each end of both circuits of Tuticorin Pooling Station-Salem (Dharmapuri) pooling station 765 kV D/C line (initially to be charged at 400 kV)

II. 63 MVAR line reactors at Tumkur (Vasantnarsapur) (formerly Madhugiri) end only of Salem (Dharmapuri) pooling station-Tumkur (Vasantnarsapur) (formerly Madhugiri) 765 kV S/C line (initially to be charged at 400 kV).

5. The above scope of the scheme has been covered in two petitions. The details of assets covered in the instant scheme along with the petition numbers are given below:-

Scope (as approved in RCE) so far under implementation	COD	Petition No.	Order Date
400 kV Salem Pooling Station-Salem 400 kV D/C Quad Line alongwith new 765/400 kV Pooling Station at Salem (initially charged at 400 kV) and Bay Extensions at Salem 400/220 kV existing Sub-station	Yet to be commissioned	25/TT/2014	18.3.2016
Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV) along with Bay extensions at Salem PS and Tuticorin Pooling Station and 80 MVAR Line Reactors at each end of both circuits of Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line (initially charged at 400 kV)	13.11.2016	Instant petition	N.A

6. Annual Fixed Cost was granted for the instant transmission asset vide order dated 27.12.2016 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations, subject to proviso (iii) and (iv) of the said Regulation.

7. The details of the transmission charges claimed by the petitioner are as under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	3416.46	9240.14	9444.03
Interest on Loan	3394.70	8738.28	8199.78
Return on Equity	3810.07	10305.89	10533.81
Interest on Working Capital	245.14	653.27	652.16
O & M Expenses	260.32	701.78	725.10
Total	**11126.69**	**29639.36**	**29554.88**

8. The details submitted by the petitioner in support of its claim for interest on working capital are as under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	101.86	105.27	108.77
O & M expenses	56.59	58.48	60.43
Receivables	4837.69	4939.89	4925.81
Total	**4996.14**	**5103.64**	**5095.01**
Interest Rate	12.80%	12.80%	12.80%
Interest	**643.57**	**656.94**	**655.40**

9. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003. Tamil Nadu Generation and Distribution Corporation Limited, (TANGEDCO), a subsidiary of TNEB Limited and one of the successor entities to the erstwhile Tamil Nadu Electricity Board (TNEB), Respondent No. 4 has filed reply vide affidavits dated 2.12.2016 and 6.4.2017. Kerala State Electricity Board Limited (KSEB), Respondent No. 3 has filed its comments vide affidavit dated 1.4.2017. The petitioner has filed its

rejoinder to the reply filed by TANGEDCO vide affidavit dated 3.2.2017 and has also filed its counter comments to the KSEB's comments vide affidavit dated 24.4.2017.

10. TANGEDCO has submitted that as per the approval in the SCM in its 29th and 30th meeting, the common transmission system was exclusively evolved by the petitioner for power evacuation from the IPPs based on the LTOA agreement between the petitioner and all the IPPs who have entered into LTOA agreement with the petitioner. TANGEDCO has submitted that the petitioner has entered into LTOA agreement with two IPPs, namely Coastal Energen Private Limited (CEPL), Respondent No. 16 and Ind-Bharath Power (Madras) Limited (IBPML), Respondent No.17 for 1100 MW and 900 MW respectively and accordingly any transmission charges for the instant asset are to be borne by CEPL and IBPML. TANGEDCO has further submitted that the issue of sharing of transmission charges and mitigation of risk due to the non-committed IPP developers was also deliberated in the Special meeting of the SRPC held on 25.11.2010, wherein on an enquiry from KSEB, whether the transmission capacity was being built for only firmed-up shares or for the total installed capacity, the petitioner had committed that the capacity was being planned for firmed-up shares. However, due to inherent design and operational margins, MTOA and STOA transactions are being honoured in line with existing regulations.

11. TANGEDCO has further submitted that the petitioner in their capacity as CTU should have followed the procedure stipulated in clause 22.7 of the "Approval of Detailed Procedures of Central Transmission Utility in CERC (Procedure, Terms and Conditions for grant of Transmission Licence and other related matters) Regulations,

2009", before implementation of the transmission schemes involving huge investments. Disregarding their responsibility, the petitioner is attempting to make the distribution utilities a scapegoat and has failed to honour the commitment give in the special SRPC meeting held on 25.11.2010.

12. TANGEDCO has raised other issues like time over-run, cost over-run, FERV, IDC and IEDC and restricted capital cost, wage revision of employees and license fee, in its reply.

13. KSEB has submitted that inadmissible claims of the petitioner on account of increase in capital cost including IDC on account of time over-run, increase in Annual Fixed Charges in view of increase in capital cost and revision of norms for O&M Expenses should be disallowed.

14. The issues raised by TANGEDCO, KSEB and the clarifications given by the petitioner are addressed in the relevant paragraphs of this order.

Commercial Operation Date (COD)

15. Regulation 4(1) of the 2014 Regulations provides the methodology for declaration of commercial operation date and Regulation 5 of the 2014 Regulations defines the trial operation of the transmission system. As per the Investment Approval, the schedule completion is within 36 months from the date of Investment Approval. The date of Investment Approval was 19.9.2011 and accordingly the schedule date of commercial operation was 18.9.2014.

16. The petitioner has submitted that there was uncertainty in commissioning of upstream and downstream assets i.e. Salem-Salem line and New Salem Pooling Station. The petitioner has submitted, vide affidavit dated 20.1.2017, that the Salem-Salem line and New Salem Pooling Station, covered in Petition No. 25/TT/2014, were anticipated to be put under commercial operation on 15.8.2014, but were not commissioned due to severe RoW issues and the commissioning of the asset was uncertain. Accordingly, the Commission, in order dated 18.3.2016 in Petition No. 25/TT/2014 had directed the petitioner to file a fresh petition considering the uncertainty in the commissioning of the said assets. The petitioner has further submitted that the asset covered in Petition No. 25/TT/2014 is now expected to be commissioned by 15.10.2016 (i.e. anticipated COD of instant asset) alongwith the instant asset covered in the instant petition and thus the instant asset contains only Bays for Tuticorin-Salem Pooling Station 765 kV D/C Line. The petitioner has also submitted that New Salem Pooling Station has been clubbed with Salem-Salem Line (i.e. asset covered earlier in Petition No. 25/TT/2014) and the tariff petition will be filed separately based on actual COD. The petitioner has submitted that the balance elements under the scheme are under different stages of implementation and application for tariff determination for the same shall be submitted subsequently.

17. The petitioner vide affidavit dated 20.1.2017 has submitted RLDC charging certificate dated 27.12.2016 and CEA clearance certificate in support of COD. The petitioner has complied with the requirement for declaring the commercial operation as per the 2014 Tariff Regulations. Accordingly, the COD of the instant assets is approved as 13.11.2016 and considered for the purpose of tariff in this order.

18. Having heard the representatives of the petitioner and perused the material available on record we proceed to dispose of the petition.

Capital cost

19. 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;”
>
> (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.”

20. The details of the revised approved apportioned capital cost, capital cost as on the date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred for the transmission assets as submitted by the petitioner are

as under:-

(₹ in lakh)

Approved apportioned cost	Approved apportioned cost (RCE)*	Cost as on COD	Additional capital expenditure incurred/projected to be incurred			Total estimated completion cost
			2016-17	2017-18	2018-19	
138014	181019.24	168918.65	4182.36	5404.05	1100.00	179605.06

*Submitted in Form-5B vide affidavit date 10.3.2017.

Cost over-run

21. TANGEDCO has submitted that when compared to approved apportioned cost of ₹138014 lakh, there is cost over-run of ₹40811 lakh, which is huge at 29.57%. TANGEDCO has submitted that the petitioner has tried to justify the huge cost escalation by just saying that they have followed open domestic competitive bidding and the price escalations are subject to market price indices movement, but have failed to establish the same. The petitioner has submitted that the submissions for cost over-run have already been filed in the original petition.

22. KSEB has submitted that the time over-run of more than 26 months has resulted into cost over-run of major elements of transmission line by 21.43%, sub-station by 12.31% and IDC by 235.06% and the same is not properly justified by the petitioner and should not be allowed. The petitioner has submitted that the submissions for cost over-run and cost estimation have already been filed in the original petition in Form-5 and as per the approved RCE there is no cost over-run.

23. The petitioner in the petition has submitted that contracts for various packages under this project were awarded to the lowest evaluated and responsive bidder, on the basis of open competitive bidding (OCB). The award prices represent the lowest prices

available at the time of bidding of various packages, thus, capturing the price level at the bidding stage. The petitioner in the petition has submitted various reasons like (a) The price variation from award to final execution being mainly on the basis of price variation (PV) based on indices as per provision of respective contracts, resulting into cost variation of about ₹1300 lakh from FR i.e. 1st Quarter, 2011 and supply period i.e. January, 2014, amounting to approximately 11.84%, (b) Increase in number of tension tower due to actual line routing and line length, which, resulted in increase of hardware fitting, earth wire, insulators etc. as well as the civil works (excavation, concreting, revetment, benching etc.) that also increased due to increase in line length and pile foundations. Therefore, the cost increase is broadly on account of increase in number of towers, pile foundation etc. (c) cost of about ₹3400 lakh being on account of increase in compensation against transmission line construction for crop, tree, forest clearance and PTCC and this variation is due to the actual assessment of crops/trees and huts encountered in line corridor by concerned Government officials of Tamil Nadu/district revenue authorities/forest department, quantity and value of which are much greater than the notional estimate. (d) Increase of about ₹800 lakh being mainly on account of actual taxes and duties, custom duty, excise duty etc. paid. (e) Impact of foreign currency variation as in FR, exchange rate considered was 1 USD=INR ₹47.10, which has been fluctuating toward higher side and presently it is over ₹67 resulting in increasing of cost. The effect of such variation worked out till 15.10.2016 is approximately INR ₹6400 lakh.

24. We have considered the submissions of TANGEDCO, KSEB and the petitioner. The estimated completion cost of instant asset is lower than the revised approved

apportioned cost given in the RCE. Thus, there is no cost over-run in the case of instant assets. However, there is variation in the FR cost and the estimated completion cost. The petitioner has attributed the cost variation to the variation in price of input items, change of conductor HTLS conductor in place of Moose conductor, increase in land compensation due to increase in land requirement and foreign exchange rate variation, increase of tension towers due to line routing and increase in compensation etc. There is huge variation in the cost estimates prepared by the petitioner not only in this case, but in many other cases. The Commission in number of cases directed the petitioner to adopt better techniques to arrive at realistic cost estimates and also to explain the basis for arriving at the estimates. Inspite of repeated directions, there is variation between the FR cost and the estimated completion cost. We are not inclined to allow the capital cost claimed by the petitioner for the instant transmission lines at this stage. The petitioner is directed to submit the basis of arriving at cost estimates along with the background computation and the efforts made to achieve the cost efficiencies while estimating the capital cost of Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line. The petitioner is also directed to submit the details of reasons recorded by the petitioners' Board of the Directors while approving the Revised Cost Estimates (RCE).

25. The capital cost of the instant asset comprises of cost of 765 kV D/C transmission line of 372.25 km, four 765 kV bays at Bay extensions at Salem Pooling Station and Tuticorin. The petitioner has submitted separate cost of sub-station and transmission line and based on this information, per unit capital cost of sub-station and transmission line is worked out as under:-

Particulars	Capital Cost (₹ in lakh)	Per Unit cost
Substation (4 bays)	4840.03	₹1210 lakh per bay
Transmission lines (372.25 km)	174765.03	₹470 lakh per km
Total	**179605.06**	

26. It is further observed that the 765 kV Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line is charged at the 400 kV level. Therefore, the utilization of the 765 kV transmission system is being restricted to the level of 400 kV level. The respondents have objected to the recovery of entire transmission charges by charging the 765 kV line at 400 kV level. We are of the view that it would be unreasonable to recover the entire cost with sub-optimal utilization of the instant transmission asset. Therefore, till the 765 kV D/C Tuticorin Pooling Station-Salem Pooling Station 765 kV D/C line is charged at 400 kV voltage level, its utilization and benefit received by the beneficiaries is to the tune of 400 kV level and therefore, the capital cost is restricted to the extent of 400 kV level so that the tariff charged is commensurate with its usage. Therefore, at present, we restrict the capital cost of the transmission lines to the extent of ₹172 lakh/km on provisional basis as submitted by Central Transmission Utility for the purpose of POC tariff. However, the capital cost allowed is subject to review at the time of truing-up. The petitioner is directed to ensure the utilization of the instant asset to the full capacity. Accordingly, the capital cost allowed for the purpose of tariff in this order is as under:-

Particulars	Capital Cost (₹ in lakh)	Per Unit cost
Sub-station (4 bays)	4840.03	₹1210 lakh per bay
Transmission lines (372.25 km)	64027.00	₹172 lakh per km
Total	**68867.03**	

Time over-run

27. The project was scheduled to be commissioned within 36 months from the date of investment approval dated 19.9.2011. Accordingly, the instant assets were scheduled to be put under commercial operation on 18.9.2014, against which the instant assets were put into commercial operation on 13.11.2016. Thus, there is time over-run of approximately 25 months and 25 days in commissioning of the instant asset.

28. TANGEDCO has submitted that the petitioner has submitted that the delay was due to major RoW issues at three locations, which could have been reduced if the petitioner had planned and phased the execution of work in such a way so as to complete the remaining portion of lines except the challenging locations and it may have led to completion of the project at least 12 months ahead of the present date of commissioning. TANGEDCO has further submitted that due to lack of planning on the part of the petitioner, the burden of cost escalation cannot be passed onto the beneficiaries and as such petitioners' request for condonation may be declined.

29. KSEB has submitted that the petitioner being a CTU is well conversant with RoW issues and other such problems existing during construction of problems and the delay indicates lack of proper planning and with proper planning, the delay of 26 months could have been avoided. KSEB has further submitted that the delay is not justifiable and the burden of such delay cannot be passed on to the beneficiaries, as such the time over-run should be disallowed.

30. In response, the petitioner in its rejoinder to the reply filed by TANGEDCO and KSEB has given similar clarification. The petitioner has 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.

31. The petitioner has submitted that the time over-run in case of the instant assets was due to floods and heavy rainfall in Tamil Nadu, disturbances caused by Cauvery issue in Tamil Nadu, RoW issues and court cases. The details submitted by the petitioner are as under:-.

a) **Delay due Right of Way issues**: The petitioner has submitted that it faced major RoW issues at Location (loc) no. 13/0, 101/0, 84/0-85/0, 48/0, 29/2-29/3, 4/4 to 5/0 and 5/0-5/1, 95/0 to 105/0, 99/3, 91/3, 52/5, 31/1 and 109/0-111/0 and has submitted the following details about RoW issues alongwith the related court cases:-

(i) **At Location No.13/0 :** Court case (OS No. 12/2012) was filed by land owners in Sub-Court, Sivakasi seeking permanent injunction of not to encroach upon their property/land for casting of foundation for tower. The case was posted for appearance before court on 24.2.2012 and various affidavits were filed in courts by the land owner regarding shifting the location of the tower. The subject line, which is passing through the owner's land, is crossing the Madurai-Thirunelveli BG Railway Line at loc 11/0-12/0 in the preceding section of the land and is crossing the TNEB 110 kV Anuppankulam-Kayathar transmission line at loc 14/0-15/0 in the succeeding section. This line is also crossing the National Highway 7 at loc 13/0-14/0. Further, Railway Crossing and Power line crossing works are already completed following the statutory regulation of crossing at these points to be made nearing to 90 degree. Thus, deviating from the finalized route will have cascading effect on the entire route. After continuous follow-up with District Administration, DC in its order dated 20.9.2016, submitted that request of the land owner to shift the location is not feasible as on the opposite side of the 4 lane National Highway 7, a natural water body is located and as per prevailing law, locating a tower inside a natural water body is not permitted. Subsequent to the order, erection and stringing works resumed and completed on 18.10.2016. This led to delay of 55 months from 27.3.2012 to 5.10.2016 at loc 12/0-13/0-14/0 and it is beyond the control of the petitioner.

ii) **Location NO. 48/0:** RoW issue at loc 48/0 also affected the progress of the construction of line. Several written communications were made with various authorities regarding the obstruction/threat made by the local villagers affecting the execution and the details are as follows:-

Srl. No.	Date	Description
1	13.9.2012	Writ petition no .12125/2012 filed before High Court, Madurai for interim injunction not to lay foundation in land.
2	22.10.2012	Matter referred to District Collector (DC) and casting of foundation is held up
3	12.12.2012	Hearing was held
4	30.1.2013	Order issued by DC and work resumed

This resulted in a delay of approximately 5 months from 13.9.2012 to 30.1.2013 at loc 48/0 which was beyond its control.

iii) Location no. 29/2-29/3: Ayyan fireworks factory is situated at this location. Objections were raised by the owners against laying of the transmission line over their factory. The details of the Writ Petitions filed and communication made with various authorities regarding the obstruction are as detailed below:-

Srl. No.	Date	Description
1	17.1.2013	Writ Petition No. 1020/2013 filed before High Court to stop laying of line over the factory land for 15 days.
2	21.1.2013	Stay order granted by High Court
3	27.2.2013	Court order received and counter affidavit was filed
4	5.4.2013	Hearing held and direction given to RDO, Virudhnagar to file counter subsequent to inspection
5	29.5.2013	RDC, Virudhnagar conducted inspection of the premises and filed the counter
6	5.2.2014	Stay vacation petition filed
7	6.6.2014	Hearing held at Madras High Court
8	26.6.2014	Case was closed by the Madurai bench of Madras High Court

This resulted in a total delay of approximately 17 months from 17.1.2013 to 26.6.2014 at loc 29/2-29/-3, which was beyond its control.

iv) **Location no. 84/0-85/0:** Another, land owner at loc 84/0 filed a WP no:15758/12 before Madras High Court objecting the location of tower construction at loc no: 84/0 in his land. Matter was referred to DC and DC directed it to shift the line from the centre of the land. Writ petition was filed by the petitioner in High Court, Madras to stay the DM order. Again, a writ petition was filed in National Green Tribunal, Chennai for issuing interim injection. The same was granted by the Tribunal on 24.1.2014 and was further extended upto 12.5.2014 on 7.3.2014. This writ petition was challenged by it in High Court, Madras, which referred the matter to Mediation & Conciliation Centre. Various sessions were held at Mediation & Conciliation Centre for shifting of tower location. Various follow ups and technical studies were made to explore the possibility of shifting the tower as requested by the owner and vide WP no. 5377 of 2013 dated 10.8.2015, a memo of compromise was filed in Madras High Court. Thus, the delay in construction activities in this section from 84/0 to 85/0 i.e. from the date 2.6.2012 to 10.8.2015

(38 months approximately or 1164 days) were beyond its control. Therefore, these events fall under the “uncontrollable factors” as per the Regulation 12 of the 2014 Tariff Regulations. Further, various RoW issues were faced at several others locations also which lead to the delay in commissioning of the line.

32. The petitioner has submitted details of other events in chronological order in respect of other RoW issues at various locations in detail in the petition. The petitioner has claimed that RoW problems persisted almost till completion of line i.e. October, 2016. The petitioner has further submitted that in spite of such inordinate delays, which started since beginning i.e. February 2012 and compensation demands beyond the provision of the relevant acts from the landowners, the asset was commissioned in October, 2016 by resolving the RoW issues at various locations. The petitioner has also submitted that all the efforts were made by it to resolve the various RoW issues and complete the said transmission line at the earliest.

33. We have considered the submissions of TANGEDCO, KSEB and the petitioner with respect to the time over-run. The time over-run of 25 months and 27 days has been mainly attributed to RoW issues faced during construction of the transmission line and various court cases and orders for relocation of tower at various locations. It is observed that there were severe RoW problems at location nos. 13, 84/0, 85/0, 101/0, 9/0 and 10/0. In case of location no.13, the owner of the land filed a case before the local court and the petitioner made various submissions before the court and correspondence with various authorities to sort out the RoW issues. It is observed that the petitioner faced similar RoW issues and court cases at other locations as well. The

petitioner has also submitted the documents in support of the same. The petitioner was not able to take up any work from 28.5.2012 to 22.9.2016 at location no.13. We are of the view that the delay at this location from 28.5.2012 to 22.9.2016 (51 months 26 days) is beyond the control of the petitioner. Accordingly, this time delay of 51 months and 26 days is condoned. The time taken by the petitioner to resolve the issues at other locations is subsumed by the time taken in settling the issues at location no. 13 and hence we are not going into the issues faced by the petitioner at other locations.

Treatment of IDC and IEDC

34. Both TANGEDCO and KSEB have submitted that the petitioner should not be allowed IDC and IEDC due to increase in cost on account of time over-run. TANGEDCO has further submitted that the petitioner is not entitled to claim FERV due to repayment of loan but is only eligible for claim of FERV on account of interest payment and other charges. The petitioner in its rejoinder to the replies of TANGEDCO and KSEB has submitted that the contents of submissions are duly addressed in the main petition with relevant annexure and proof of delays.

35. Before, we proceed to consider the treatment of IDC and IEDC we have to consider various elements of cost, which has been disallowed. The disallowed completion cost of the transmission line i.e. ₹110738.03 lakh (claimed ₹174765.03-allowed ₹64027.00 lakh) has been apportioned into "Hard Cost" and "Soft Cost" to the proportion of element wise capital cost as submitted in Form-5 by the petitioner. The details are as under:-

(₹ in lakh)

Particulars	Break-up of capital cost
Hard cost	89530.69
FERV	3951.82
IDC	13825.57
IEDC	3429.95
Total Disallowed Cost	**110738.03**

36. Accordingly, the disallowed cost has been adjusted from the capital cost claimed as under:-

(₹ in lakh)

Particulars	Amount
Adjusted in cost as on COD (including FERV, IDC and IEDC	100719.70
Adjusted from add-cap 2016-17	3809.31
Adjusted from add-cap 2017-18	5109.02
Adjusted from add-cap 2018-19	1100.00
Adjusted Cost Total	**110738.03**

37. Similarly, the allocated FERV pertaining to the disallowed cost of transmission line amounting to ₹3951.82 lakh has been adjusted from the amount claimed on account of FERV by the petitioner, as follows:-

Amount (₹ in lakh)		
Claimed as per Auditors' Certificate dated 16.12.2016	**Pertaining to disallowed cost**	**Allowed**
6409.00	3951.82	2457.18

38. The allowable IDC has been worked out by considering the information submitted by the petitioner. The petitioner has submitted loan details in Form-9C for period 2014-19 and date of drawl in IDC statement, which have been considered for calculating IDC for the instant asset. For IDC computation, the loan amount mentioned in IDC statement has been considered for working out the allowable IDC, though it is noted that, in case of foreign loan, the loan amount in INR as indicated in FERV computation and in the

IDC statement is not matching. Therefore, the petitioner is directed to submit the details of IDC claim for foreign loan at the time of truing-up. Further, the IDC pertaining to the disallowed capital cost has been adjusted from the IDC claim. The details of IDC allowed for working out tariff are as under:-

(₹ in lakh)

IDC						
Claimed as per Auditors' Certificate	**Allowable as worked out**	**Disallowed due to computation difference**	**Pro-rata for the hard cost disallowed**	**Allowable on accrual basis**	**Discharged upto COD**	**Undischarged**
1	2	3	4	5=2-4	6	7=5-6
22423.58	22423.58	-	13825.57	8598.01	8598.01	-

39. Accordingly, the allowable IDC amounting to ₹8598.01 lakh has been considered as fully discharged as on COD and the undischarged IDC as on COD is considered as NIL. Therefore, the petitioner is not entitled for any add-cap claim towards the discharge of IDC after COD.

40. Similarly, the petitioner vide Auditors' Certificate dated 16.12.2016 has claimed IEDC ₹5563.01 lakh, as on COD, in respect of instant asset. As discussed above, an amount of ₹3429.95 lakh pertains to disallowed capital cost being on account of IEDC. Thus, the amount of ₹2133.06 lakh has been considered on account of allowable IEDC, for the purpose of tariff in this order.

Initial Spares

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

> **"13. Initial Spares**
> Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(d) Transmission system

(i) Transmission line -1.00%
(ii) Transmission Sub-station (Green Field)-4.00%
(iii) Transmission Sub-station (Brown Field)-6.00%
(iv) Series Compensation devices and HVDC Station-4.00%
(v) Gas Insulated Sub-station (GIS)-5.00%
(vi) Communication system-3.5%

Provided that:

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

42. The petitioner has claimed initial spares of ₹145.13 lakh and ₹847.49 lakh pertaining to sub-station and transmission line respectively. The petitioner has also submitted details of discharge of liability towards initial spares as under:-

(₹ in lakh)

Particulars	**Year wise discharge of liability upto cut-off date**			
	Upto SCOD	**2016-17**	**2017-18**	**Total**
Transmission line	-	375.00	472.49	847.49
Sub-station	52.13	33.59	59.41	145.13

43. The petitioner has claimed initial spare after COD, but in Form-7 no claim of initial spare has been indicated under Regulation 14(1)(iv) of the 2014 Tariff Regulations, which is meant for additional capital expenditure claim towards procurement of initial capital spare within original scope. The petitioner has also not clarified whether the initial spares are capitalized on COD or after COD. Moreover, the capital cost

disallowed towards transmission line is subject to truing-up. Hence, the quantification of excess initial spare, if any, shall be worked out at the time of truing-up.

44. Accordingly, the capital cost as on the date of commercial operation for the instant transmission asset after adjustment of IDC and IEDC and initial spares is considered as per Regulation 9(2) of the 2014 Tariff Regulations. However, as discussed earlier, the capital cost of instant asset has been restricted as per details given under:-

(₹ in lakh)

Capital cost claimed as on COD	Disallowed capital cost of T/L as on COD	Disallowed as on COD		Capital cost considered as on COD
		IDC	IEDC	
168918.65	100719.70*	-	-	68198.95

*The above disallowed cost of ₹100719.70 lakh includes, FERV of ₹3951.82 lakh, IDC of ₹13825.57 lakh and IEDC of ₹3429.95 lakh.

Additional Capital Expenditure

45. 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."

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

> "cut-off date" means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation".
>
> Provided that the cut-off date may be extended by the Commission if it is proved on the basis of documentary evidence that the capitalisation could not be made within the cut-off date for reasons beyond the control of the project developer;"

47. The cut-off date in the case of instant transmission asset is 31.3.2019.

48. KSEB has submitted that the petitioner has not provided work wise or asset wise details for balance/retention payment with justification for claiming the same and the same should be allowed after a prudence check. The petitioner has claimed additional capital expenditure in respect of instant asset to be on account of retention and balance payments. The details of additional capital expenditure claimed by the petitioner are as under:-

(₹ in lakh)

S. No.	Add-cap claim as per Form-7	2016-2017	2017-2018	2018-2019
1	Other liabilities retention payment-Regulation 14(1)(i)	290.55	2882.43	586.72
2	Deferred works-Regulation 14(1)(ii)	3891.81	2521.62	513.28
3	As per Auditors' certificate-total add-cap claimed	4182.36	5404.05	1100.00
4	IDC discharged claim-Regulation 14(1)(i)	1632.04	1244.29	-
5	Total add-cap claimed (3+4)	5814.40	6648.34	1100.00

49. As discussed earlier, the portion of disallowed completion capital cost of transmission line has been adjusted from the claim of deferred works and other

liabilities discharged and due to adjustment of IDC towards disallowed capital cost, no undischarged liabilities have been considered as remaining on COD. Therefore, the petitioner has not been allowed any claim as add-cap for discharge of IDC. Accordingly, the additional capital expenditure considered for the purpose of computation of tariff is as under:-

(₹ in lakh)

S. No.	Add-cap allowed for working out tariff	2016-2017	2017-2018	2018-2019
1	Other liabilities retention payment-Regulation 14(1)(i)	290.55	295.03	-
2	Deferred works-Regulation 14(1)(ii)	82.50	-	-
3	IDC discharged claim-Regulation 14(1)(i)	-	-	-
4	Total add-cap considered	373.05	295.03	-

50. In view of above, the capital cost and additional capital expenditure considered for the purpose of computation of tariff is as follows:-

(₹ in lakh)

Cost allowed as on COD after adjusting IDC	Total add-cap restricted and allowed upto cut-off date		Total Capital cost allowed as on 31.3.2019
	2016-17	2017-18	
68198.95	373.05	295.03	68867.03

Debt- Equity ratio

51. 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."

52. The capital cost on the dates 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, add-cap and as on 31.3.2019 considered on normative basis are as follows:-

(₹ in lakh)

Particulars	**As on COD**		**As on 31.3.2019**	
	Amount (₹ in lakh)	**%**	**Amount (₹ in lakh)**	**%**
Debt	47739.27	70.00	48206.92	70.00
Equity	20459.69	30.00	20660.11	30.00
Total	**68198.95**	**100.00**	**68867.03**	**100.00**

Return on equity

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

"**24. Return on Equity**: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating

stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:
(i) in case of projects commissioned on or after 1st April, 2014, an additional return of **0.50 %** shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

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

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

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

(iii) 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."

54. The petitioner has submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate of 20.961%, as per the above Regulations. The petitioner has further submitted that as per Regulation 25(3) of the 2014 Tariff Regulations, the grossed up RoE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/ adjustable after completion of income tax assessment of the financial year.

55. 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 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. 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. Accordingly, the RoE allowed is given below:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Opening Equity	20459.69	20571.60	20660.11
Addition due to Additional Capitalization	111.92	88.51	-
Closing Equity	20571.60	20660.11	20660.11
Average Equity	20515.64	20615.85	20660.11
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)	**1532.09**	**4042.77**	**4051.45**

Interest on Loan (IoL)

56. Regulation 26 of the 2014 Tariff Regulations with regard to Interest on Loan specifies as under:-

"(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

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

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

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

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

57. In keeping with the provisions of Regulation 26 of the 2014 Tariff Regulations, the petitioner's entitlement to interest on loan has been calculated on the following basis:-

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

(b) The repayment for the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for that year;

(c) Notwithstanding moratorium availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the asset and shall be equal to the annual depreciation allowed; and

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

58. The petitioner has submitted that the interest on loan has been considered on the basis of rate prevailing as on COD and the change in interest due to floating rate of interest applicable, if any, for needs to be claimed/ adjusted over the tariff block 2014-19. We would like to clarify that the interest on loan has been calculated on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing-up.

59. Detailed calculations in support of IoL have been calculated as given at Annexure-I of this order.

60. The details of IoL calculated are as under:-

(₹ in lakh)

Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Gross Normative Loan	47739.27	48000.40	48206.92
Cumulative Repayment upto Previous Year	-	1371.96	4990.91
Net Loan-Opening	47739.27	46628.44	43216.01
Addition due to Additional Capitalisation	261.14	206.52	-
Repayment during the year	1371.96	3618.95	3626.11
Net Loan-Closing	46628.44	43216.01	39589.90
Average Loan	47183.85	44922.22	41402.96
Weighted Average Rate of Interest on Loan	7.7432%	7.7623%	7.7339%
Interest on Loan	**1391.35**	**3486.98**	**3202.08**

<u>Depreciation</u>

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

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

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

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

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

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

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

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

(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."

62. The petitioner has claimed actual depreciation. In our calculations, depreciation has been calculated in accordance with Regulation 27 extracted above.

63. 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 at the rates specified in Appendix-II to the 2014 Tariff Regulations.

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

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Block as on COD	68198.95	68572.00	68867.03
Addition during 2014-19 due to Projected Additional Capitalisation	373.05	295.03	-
Gross Block as on 31st March	68572.00	68867.03	68867.03
Average Gross Block	68385.48	68719.52	68867.03
Rate of Depreciation	5.2681%	5.2663%	5.2654%
Depreciable Value	61546.93	61847.56	61980.33
Remaining Depreciable Value	61546.93	60475.60	56989.42
Depreciation	**1371.96**	**3618.95**	**3626.11**

<u>Operation & Maintenance Expenses (O&M Expenses)</u>

65. Regulation 29(4) (a) of the 2014 Tariff Regulations specifies the norms for operation and maintenance 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:-

Elements	2014-15	2015-16	2016-17	2017-18	2018-19
Norms for sub-station (₹ lakh per bay)					
400 kV bays	60.30	62.30	64.37	66.51	68.71
765 kV bays	84.42	87.22	90.12	93.11	96.20
Norms for AC lines (₹ lakh per km)					
Double circuit (Bundled conductor with four or more sub-conductors	1.062	1.097	1.133	1.171	1.210

66. 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 petitioner's entitlement to O&M Expenses have been worked out and the allowable O&M Expenses for the instant transmission asset are as follows:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
4 nos. 400 kV bays	98.05	266.04	274.84
372.25 km 765 kV D/C T/L	160.615	435.90	450.42
Total	**258.66**	**701.94**	**725.26**

67. 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.

68. TANGEDCO and KSEB have submitted that there is no provision to allow such increase under the 2014 Tariff Regulations. We have considered the submissions of the petitioner and the respondents. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on working capital

69. Clause 1 (c) and 3 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;"

70. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 12.80% (SBI Base Rate of 9.30% plus 350 basis points). The interest on working capital as determined is as under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	101.88	105.29	108.79
O & M expenses	56.60	58.50	60.44
Receivables	2039.98	2021.73	1980.00
Total	2198.47	2185.52	2149.23
Interest Rate	**12.80%**	**12.80%**	**12.80%**
Interest	**107.16**	**279.75**	**275.10**

Transmission charges

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

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	1371.96	3618.95	3626.11
Interest on Loan	1391.35	3486.98	3202.08
Return on Equity	1532.09	4042.77	4051.45
Interest on Working Capital	107.16	279.75	275.10
O & M Expenses	258.66	701.94	725.26
Total	**4661.22**	**12130.38**	**11879.99**

72. 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, or any other kind of impositions etc. The same, if imposed shall be borne and additionally paid by the respondents. We have considered the submissions of the petitioner. The petitioner is entitled for late payment surcharge and FERV as per Regulations 45 and 50 respectively of the 2014 Tariff Regulations.

Filing Fee and the Publication Expenses

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

Licence Fee and RLDC fees and Charges

74. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. TANGEDCO has submitted that the petitioner is not entitled to claim licensee fee from the beneficiaries. 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.

Sharing of Transmission Charges

75. As regards sharing of transmission charges, TANGEDCO has made the following submissions:-

a) The petitioner should have revisited the transmission scheme and approached the Commission for approval while considering time leverage, in the absence of target beneficiaries, drawal points in the ISTS and long term PPAs to be executed by generation projects. The petitioner has never disclosed the status of the transmission projects. The issue was also taken up with SRPC and deliberated in the 32nd meeting of the Commercial Sub Committee of SRPC held at Hyderabad on 17.10.2016. The Committee requested to conduct a midterm review with respect to the schemes associated with IPPs.

b) The petitioner, on the contrary has declared commercial operation of the 400 kV D/C quad line between Salem Pooling station-Salem 400 kV Sub-station along with new 765/400 kV Sub-station at Salem (initially charged at 400 kV) and bay extension at Salem 400/220 kV Sub-station as part of the common transmission system for the two IPPs in Tuticorin area on 23.10.2016 on their own without following any norms for declaring COD i.e. without bringing it to beneficial use.

c) The main connectivity between Salem Pooling station and Madhugiri Pooling station has not been completed by the petitioner. There is no upstream connectivity or no link for the IPPs at Salem pooling station. IBPML is yet to firm up their beneficiaries. The dedicated transmission line has not been built by the IPP. CEPL has also not firmed up their beneficiaries for their second unit. The petitioner should have conducted a joint system study and placed the study reports in public domain/shared with the existing DICs. The concurrence of the beneficiaries should have been obtained before commencing the execution, as the

Southern Regional beneficiaries i.e. DICs agreed upon the original schemes in the standing Committee and SRPC forums, based on the commitment given by the petitioner that the transmission capacity will be built only for the firmed up capacity and the transmission charges will be borne by the IPPs till firming up of the beneficiaries. However, on the contrary, the petitioner has arbitrarily changed the entire scope of the scheme without the knowledge of the beneficiaries. The petitioner has claimed the following assets (concealing the fact in the main petition that the station equipments/bay arrangements are rated for 400 kV) which are not in the scope of the original approved scheme:-

i. Two nos. 400 kV bays each at Tuticorin Pooling Station and Salem New (Dharmapuri) Pooling Station for terminating Tuticorin Pooling Station-Salem New (Dharmapuri) 765 kV D/C Line (Initially charged at 400 kV)

ii. 80 MVAR, 400 kV line reactor at Tuticorin Pooling Station and Salem New (Dharmapuri) each for both circuits of Tuticorin Pooling Station-Salem New (Dharmapuri) Pooling Station 765 kV D/C Line (Initially charged at 400 kV)

These two bays at each sub-station are intended for terminating the 765 kV D/C line between Tuticorin Pooling Station and Salem Pooling Station (intended to be charged initially at 400 kV), but, the petitioner has erected 400 kV bays with associated control circuits for terminating the 765 kV lines, which, makes the 765 kV system permanently de-rated to 400 kV level and makes the establishment of 765/400 kV Pooling Station technically not feasible. The huge investment made in establishing 765 kV D/C transmission lines will become futile. Thus, the petitioner is attempting to establish its dominance upon the beneficiaries in violation of the relevant Act and Regulations. Therefore, in the absence of both generation as well as target beneficiaries, the intended transmission system will not serve its purpose rather it will hugely increase the financial burden on the existing DICs as there is no up-stream connectivity at 765 kV level and no target beneficiary at Salem Pooling Station or beyond. This condition makes the instant asset redundant and uneconomical.

d) While quoting provisions of the amended Clause (5) of Regulation 8 of the Sharing Regulations, it has submitted that the petitioner is neither transparent nor willing to place on record in the instant petition, the factual details of status of the generators, target beneficiaries, the action taken with regard to review of the schemes as mandated in the regulations and the action taken to recover the cost of the instant asset from the defaulting generator. Instead, the petitioner has suppressed the fundamental facts and proceeded to declare COD of the assets without the approval of the Commission.

76. TANGEDCO has also referred to the Commission's order dated 29.7.2016 in Petition No.127/TT/2014, wherein the Commission observed that that the LILO of the Tuticorin JV-Madurai 400 kV D/C line at Tuticorin Pooling station is redundant and it is of no use to the beneficiaries, unless and until the pooling stations and upstream connectivity is put under operation.

77. The petitioner, in response, vide its rejoinder dated 3.2.2017 has submitted that TANGEDCO is trying to color its reply in such way so as to continue drawing 558 MW from the implemented transmission system without actually paying transmission

charges. The petitioner has submitted that TANGEDCO is incorrect that it has exclusively evolved the instant transmission system as the transmission system was evolved as a CTU, which is not a transmission licensee, it not only follows, but is bound to always follow the regulations while planning transmission systems. Secondly, planning and approving of implementation of transmission corridor is a complex exercise which requires consultation of CEA and POSOCO, due deliberations with respective regional power committees, standing committees, along with regulatory approval from the Commission. Therefore, the statement of TANGEDCO is untrue and misleading. The petitioner has further submitted, as regards the scope of scheme, the same is a matter of record and hence doesn't require specific reply and as regards transmission charges, same shall be borne by generators until commissioning of their generating units. The petitioner has also submitted that it has followed due process before implementing the instant transmission system and due approvals and deliberations were made to requisite forums and it has made all possible efforts to predict and earmark such lapses and issues.

78. The petitioner has submitted that TANGEDCO has started utilizing the transmission system for evacuation of power through a PPA. Hence, the requirement under the 2014 Tariff Regulations for inclusion of transmission asset in PoC has been met. The petitioner has submitted that several actions have been taken to put to use the transmission system for alternate purposes and a petition has also been filed against IPPs who are defaulting in opening the requisite payment security mechanism or not paying the transmission charges.

79. The petitioner has further submitted that it has duly completed the scope of requisite transmission assets for enabling power flow and once the connecting transmission network was ready including the transmission line being implemented under TBCB, then only, petitioner has declared COD of its assets. As such, Tuticorin-Salem, Salem-Salem and Salem-Nagapattinam (TBCB line) were connected and charged together upon commissioning. Further, out of the proposed two generators at Tuticorin, Coastal Energen had declared its dedicated transmission line under commercial operation on 29.10.2016, whereas Ind-Barath has abandoned its project. As such, it has been exploring alternate arrangements and usage of transmission corridors, but stalling the recovery of tariff until such time is unreasonable and harsh. Rather, it should be allowed to recover transmission charges from PoC and simultaneously enforce the terms of LTA upon IPPs. The amount so recovered from IPPs, either by encashment of construction phase Bank Guarantee or payment of transmission charges shall be duly reimbursed back to the beneficiaries.

80. The petitioner has also submitted that it has duly constructed a 765 kV sub-station along with the 765 kV transmission lines, the 400 kV bays has been implemented after due deliberations and approvals from the RPCs, minutes of which are already placed on record in its main petition. Hence, the claim of TANGEDCO that it is not following the approved scheme is untenable. It has installed 400 kV bays but the same shall be replaced with 765 kV bays as and when the capacity needs to be stepped-up. The petitioner has submitted that as such, the due regulatory process was followed while implementing the instant transmission asset and the COD of the instant asset has been declared in accordance with the provisions of the 2014 Tariff Regulations, hence, no

system studies were required to declare COD and there is no modification in scope of project as claimed by TANGEDCO and being a CTU as well is also exploring alternate possible usage of transmission systems.

81. TANGEDCO, in its counter reply to the rejoinder of the petitioner vide affidavit dated 6.4.2017 has submitted that even though there is clear demarcation of the role and responsibilities of the petitioner in its capacity as a CTU and Transmission licensee, both divisions are functioning under one company and there exists conflict of interest. TANGEDCO being one of the DICs of Southern Region and the sole beneficiary of the generator CEPL, under present conditions, as such is affected by the wrongful acts of the petitioner. TANGEDCO has submitted that the petitioner cannot deviate from its obligations under the Regulations. The end consumer cannot be penalized for the wrongful acts of the petitioner. This kind of redundant investments cannot be allowed in transmission sector and permitted to be recovered from beneficiaries. The Regulations do not envisage any such thing.

82. TANGEDCO has submitted that it is the only beneficiary availing 558 MW from CEPL which is being evacuated through the LILO of Tuticorin JV-Madurai 400 kV line. There is no target beneficiary to supply beyond the State periphery. The statement with respect to the system being used for supplying various beneficiaries is false. TANGEDCO never objected to any legitimate claim made by the petitioner and always honoured its obligations and commitments. TANGEDCO has submitted that when a transmission scheme which was proposed for the benefit of a group of generators becomes redundant because of the acts of the generators abandoning their generating

units/project, the petitioner in its capacity as a CTU/TSP is required to revisit the transmission system to ensure that public interest does not suffer since as a CTU, the petitioner cannot thrust upon distribution licensees to bear the cost of transmission system as well as transmission charges which are the result of its redundant investments. TANGEDCO has submitted that if CEPL with a PPA to TANGEDCO alone was there, then connectivity could have been done through State network and therefore, the petitioner was required to be prudent and diligent in the process of commissioning the transmission system and is under an obligation to ensure that public money is not wasted. TANGEDCO has submitted that therefore, a system, which had become redundant, because of no fault of the beneficiaries, cannot be included in the PoC forcing the beneficiaries to pay for it. This is against the settled principles of law.

83. TANGEDCO has also submitted that the minutes of the 29th, 30th and 31st Standing Committee meetings as well as the special meeting of the SRPC held on 25.11.2010 clearly establishes the authenticity and truthfulness of its earlier submissions regarding the instant system having been exclusively designed for evacuation of power from IPPs, which the petitioner has termed as misleading and an attempt to shift the burden. TANGEDCO has submitted that it is evident from page 30, 33, 36 and 37 of the instant petition that the transmission corridors were approved based on the LTOA application by IPPs and ED (of the petitioner) has also ascertained (para 2.11 of the minutes of special meeting of SRPC) that the liability of payment of transmission charges lies with the generators, if the beneficiaries were not identified. Therefore, the minutes of the Standing Committee meeting and SRPC meeting are proof of the same and require no more explanation.

84. TANGEDCO has submitted that the petitioner cannot deny its responsibility of matching the progress of transmission project with that of the generators. If the generators have abandoned their generating units, the petitioner has to seek LD as per the indemnity bond supposed to have been executed between the generators and the petitioner. TANGEDCO has submitted that it is strange that the answering respondent and other beneficiaries are claimed to be liable to pay for a system which had become redundant because of the wrongful act of generator/petitioner. The generator has abandoned the generating unit because it did not suit its financial parameters. The system was envisaged to benefit the generator to sell power to the beneficiaries. The investment in the system was agreed to at the instance of the generators offering to put generating units. Therefore, it is the generator who has to be made liable for the loss incurred by CTU.

85. The petitioner in its rejoinder dated 24.4.2017 to the counter reply dated 6.4.2017 of TANGEDCO has submitted that with regards to the argument on utilization of transmission system and there upon its inclusion in PoC, the petitioner has established beyond reasonable doubt that the said transmission system is not idle, rather it is being used by TANGEDCO, who is also availing incentives from MTOA payments in its PoC Billing and at one end, TANGEDCO has stated that it is the only beneficiary availing power whereas the transmission system was planned to facilitate generators and that since generators have abandoned, the transmission system commissioned by the petitioner should be allowed to be used by TANGEDCO for 'Free' while it can avail the benefits of scheduling MTOA transaction on the same transmission system for

purchasing 558 MW of power. It could be possible that the respondents are deliberately signing MTOA to avail double benefits. One contest the inclusion of transmission system under PoC, thereby not making a single payment towards the cost of implementation and simultaneously use the same system for purchasing a huge quantum of 558 MW, the transmission charges for these 558 MW are returned back to the same pool, which is in effect reducing the net PoC bill payable by TANGEDCO.

86. The petitioner has further submitted that it has moved several petitions against the defaulting IPPs and has requested to be allowed encashment of CBGs but in most cases the Commission has stayed the encashment until disposal of the petitions which is restraining the encashment. The petitioner has also submitted that, denying PoC on account of pending litigation on encashment of CBGs is neither envisaged in the regulations nor in the orders of the Commission and as and when the decisions are passed and orders are made for encashment, the same shall be encashed and returned back to the PoC Pool. The petitioner has submitted that any settlement on the arrangements proposed by the Commission shall be made in the billings subsequently upon firming of such alternate modes of recovery like LD/Encashment of CBG.

87. We have considered the submissions of the respondent and the petitioner. Neither TANGEDCO nor the petitioner has denied the quantum of 558 MW LTA being operated against the total LTA capacity of 2000 MW. The transmission line (765 kV) has been charged on 400 kV level which is sufficient to carry power for CEPL and utilization of transmission capacity. It is noticed that the asset covered in the instant petition is put to use since Salem Pooling Station is connected to existing Salem (400 kV) Sub-station

and to Nagapattinam Sub-station. The asset forms part of the meshed network, therefore the transmission charges associated with the assets covered in the instant petition shall be recovered through PoC mechanism.

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

89. This order disposes of Petition No. 235/TT/2016.

sd/-	sd/-	sd/-	sd/-
(M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**	**(Gireesh B Pradhan)**
Member	**Member**	**Member**	**Chairperson**

Annexure-I

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN			
	Details of Loan	**2016-17**	**2017-18**	**2018-19**
1	**Bond XXXVII**			
	Gross loan opening	**1053.00**	**1053.00**	**1053.00**
	Cumulative Repayment upto DOCO/previous year	**87.75**	**175.50**	**263.25**
	Net Loan-Opening	965.25	877.50	789.75
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	87.75	87.75	87.75
	Net Loan-Closing	877.50	789.75	702.00
	Average Loan	921.38	833.63	745.88
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	85.23	77.11	68.99
	Rep Schedule	12 annual instalments from 26.12.2015		
2	**Bond XL**			
	Gross loan opening	**3570.00**	**3570.00**	**3570.00**
	Cumulative Repayment upto DOCO/previous year	**297.50**	**297.50**	**595.00**
	Net Loan-Opening	3272.50	3272.50	2975.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	297.50	297.50
	Net Loan-Closing	3272.50	2975.00	2677.50
	Average Loan	3272.50	3123.75	2826.25
	Rate of Interest	9.30%	9.30%	9.30%
	Interest	304.34	290.51	262.84
	Rep Schedule	12 annual instalments from 28.06.2016		
3	**Bond XXXIX**			
	Gross loan opening	**2500.00**	**2500.00**	**2500.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	2500.00	2500.00	2500.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2500.00	2500.00	2500.00
	Average Loan	2500.00	2500.00	2500.00
	Rate of Interest	9.40%	9.40%	9.40%
	Interest	235.00	235.00	235.00
	Rep Schedule	Redeemable at par on 29.03.2027		
4	**SBI 21.03.2012**			
	Gross loan opening	**6111.00**	**6111.00**	**6111.00**
	Cumulative Repayment upto DOCO/previous year	**277.77**	**555.54**	**1111.09**
	Net Loan-Opening	5833.23	5555.46	4999.91
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	277.77	555.55	555.55
	Net Loan-Closing	5555.46	4999.91	4444.36
	Average Loan	5694.35	5277.69	4722.14
	Rate of Interest	9.35%	9.35%	9.35%

	Interest	532.42	493.46	441.52
	Rep Schedule	22 annual instalments from 31.8.2016		
5	**Bond XLII**			
	Gross loan opening	**1850.00**	**1850.00**	**1850.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	1850.00	1850.00	1850.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1850.00	1850.00	1850.00
	Average Loan	1850.00	1850.00	1850.00
	Rate of Interest	8.80%	8.80%	8.80%
	Interest	162.80	162.80	162.80
	Rep Schedule	Redeemable at par on 13.03.2023		
6	**Bond XLIII**			
	Gross loan opening	**6508.00**	**6508.00**	**6508.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**542.33**
	Net Loan-Opening	6508.00	6508.00	5965.67
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	542.33	542.33
	Net Loan-Closing	6508.00	5965.67	5423.34
	Average Loan	6508.00	6236.84	5694.51
	Rate of Interest	7.93%	7.93%	7.93%
	Interest	516.08	494.58	451.57
	Rep Schedule	12 annual instalments from 20.05.2017		
7	**Bond XLV**			
	Gross loan opening	**3506.92**	**3506.92**	**3506.92**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**292.24**
	Net Loan-Opening	3506.92	3506.92	3214.68
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	292.24	292.24
	Net Loan-Closing	3506.92	3214.68	2922.43
	Average Loan	3506.92	3360.80	3068.56
	Rate of Interest	9.65%	9.65%	9.65%
	Interest	338.42	324.32	296.12
	Rep Schedule	12 annual instalments from 28.02.2018		
8	**Bond XLIV**			
	Gross loan opening	**9242.00**	**9242.00**	**9242.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	9242.00	9242.00	9242.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	3080.67
	Net Loan-Closing	9242.00	9242.00	6161.33
	Average Loan	9242.00	9242.00	7701.67
	Rate of Interest	8.70%	8.70%	8.70%
	Interest	804.05	804.05	670.04

	Rep Schedule	3 equal instalments on 15.07.2018,15.07.2023 and 15.07.2028		
9	**Bond XLVI**			
	Gross loan opening	**9065.00**	**9065.00**	**9065.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	9065.00	9065.00	9065.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	9065.00	9065.00	9065.00
	Average Loan	9065.00	9065.00	9065.00
	Rate of Interest	9.30%	9.30%	9.30%
	Interest	843.05	843.05	843.05
	Rep Schedule	3 (Three) equal instalments on 04.09.2019,4.09.2024 and 04.09.2029		
10	**Bond XLVII**			
	Gross loan opening	**6110.00**	**6110.00**	**6110.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	6110.00	6110.00	6110.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	509.17
	Net Loan-Closing	6110.00	6110.00	5600.83
	Average Loan	6110.00	6110.00	5855.42
	Rate of Interest	8.93%	8.93%	8.93%
	Interest	545.62	545.62	522.89
	Rep Schedule	12 annual instalments from 20.10.2018		
11	**Bond XLVIII**			
	Gross loan opening	**8197.00**	**8197.00**	**8197.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	8197.00	8197.00	8197.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	8197.00	8197.00	8197.00
	Average Loan	8197.00	8197.00	8197.00
	Rate of Interest	8.20%	8.20%	8.20%
	Interest	672.15	672.15	672.15
	Rep Schedule	4 (Four) equal instalments on 23.01.2020,23.01.2022,23.01.2025 and 23.01.2030		
12	**SBI 10000**			
	Gross loan opening	**7372.31**	**7372.31**	**7372.31**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	7372.31	7372.31	7372.31
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	7372.31	7372.31	7372.31
	Average Loan	7372.31	7372.31	7372.31

	Rate of Interest	9.35%	9.35%	9.35%
	Interest	689.31	689.31	689.31
	Rep Schedule			
13	**Bond XLIX**			
	Gross loan opening	**3282.00**	**3282.00**	**3282.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	3282.00	3282.00	3282.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	3282.00	3282.00	3282.00
	Average Loan	3282.00	3282.00	3282.00
	Rate of Interest	8.15%	8.15%	8.15%
	Interest	267.48	267.48	267.48
	Rep Schedule	3(Three) equal instalments on 09.03.2020, 09.03.2025 and 09.03.2030		
14	**Bond L**			
	Gross loan opening	**5186.00**	**5186.00**	**5186.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	5186.00	5186.00	5186.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	5186.00	5186.00	5186.00
	Average Loan	5186.00	5186.00	5186.00
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	435.62	435.62	435.62
	Rep Schedule	12 annual instalments from 27.05.2019		
15	**IFC (ICFF LOAN)**			
	Gross loan opening	**2752.94**	**2752.94**	**2752.94**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**275.63**
	Net Loan-Opening	2752.94	2752.94	2477.31
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	275.63	275.63
	Net Loan-Closing	2752.94	2477.31	2201.67
	Average Loan	2752.94	2615.12	2339.49
	Rate of Interest	4.15%	4.15%	4.15%
	Interest	114.25	108.53	97.09
	Rep Schedule			
16	**FC Bond**			
	Gross loan opening	**18653.46**	**18653.46**	**18653.46**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	18653.46	18653.46	18653.46
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	18653.46	18653.46	18653.46
	Average Loan	18653.46	18653.46	18653.46
	Rate of Interest	4.10%	4.10%	4.10%
	Interest	764.79	764.79	764.79

	Rep Schedule			
17	**Bond LI**			
	Gross loan opening	**5921.00**	**5921.00**	**5921.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	5921.00	5921.00	5921.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	5921.00	5921.00	5921.00
	Average Loan	5921.00	5921.00	5921.00
	Rate of Interest	8.40%	8.40%	8.40%
	Interest	497.36	497.36	497.36
	Rep Schedule	12 annual instalments from 14.09.2019		
18	**Bond LII**			
	Gross loan opening	**1000.00**	**1000.00**	**1000.00**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	1000.00	1000.00	1000.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1000.00	1000.00	1000.00
	Average Loan	1000.00	1000.00	1000.00
	Rate of Interest	8.32%	8.32%	8.32%
	Interest	83.20	83.20	83.20
	Rep Schedule	12 annual instalments from		
19	**IFC (IFC-B LOAN)**			
	Gross loan opening	**5996.59**	**5996.59**	**5996.59**
	Cumulative Repayment upto DOCO/previous year	**4497.44**	**5996.59**	**5996.59**
	Net Loan-Opening	1499.15	0.00	0.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	1499.15	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00
	Average Loan	749.58	0.00	0.00
	Rate of Interest	3.29%	3.29%	3.29%
	Interest	24.66	0.00	0.00
	Rep Schedule			
20	**Proposed Loan**			
	Gross loan opening	**8393.71**	**8393.71**	**8393.71**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	8393.71	8393.71	8393.71
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	8393.71	8393.71	8393.71
	Average Loan	8393.71	8393.71	8393.71
	Rate of Interest	7.36%	7.36%	7.36%
	Interest	617.78	617.78	617.78
	Rep Schedule			
	Proposed Loan			
	Gross loan opening	**0.00**	**1210.42**	**1210.42**

	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	0.00	1210.42	1210.42
	Additions during the year	1210.42	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1210.42	1210.42	1210.42
	Average Loan	605.21	1210.42	1210.42
	Rate of Interest	7.36%	7.36%	7.36%
	Interest	44.54	89.09	89.09
	Rep Schedule			
	Proposed Loan			
	Gross loan opening	**0.00**	**0.00**	**761.51**
	Cumulative Repayment upto DOCO/previous year	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	0.00	0.00	761.51
	Additions during the year	0.00	761.51	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	0.00	761.51	761.51
	Average Loan	0.00	380.76	761.51
	Rate of Interest	7.36%	7.36%	7.36%
	Interest	0.00	28.02	56.05
	Rep Schedule			
	Total Loan			
	Gross loan opening	116270.93	117481.35	118242.86
	Cumulative Repayment upto DOCO/previous year	5160.46	7025.13	9076.14
	Net Loan-Opening	111110.47	110456.22	109166.72
	Additions during the year	1210.42	761.51	0.00
	Repayment during the year	1864.67	2051.01	5640.85
	Net Loan-Closing	110456.22	109166.72	103525.87
	Average Loan	110783.34	109811.47	106346.30
	Rate of Interest	**7.7432%**	**7.7623%**	**7.7339%**
	Interest	**8578.17**	**8523.85**	**8224.75**