CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 133/TT/2017

Coram:

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

Date of Order : 29.06.2018

In the matter of:

Approval of transmission tariff for ±100 MVAR STATCOM at NP Kunta Pooling Station under “Transmission System for Ultra Mega Solar Park in Anantpur District, Andhra Pradesh-Part A (Phase-I)” 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,
“Saudamini”, Plot No. 2,
Sector 29, Gurgaon-122001
Haryana **….Petitioner**

Vs

1. Karnataka Power Transmission Corporation Ltd., (KPTCL),
Kaveri Bhavan, Bangalore – 560 009

2 Transmission Corporation of Andhra Pradesh Ltd.,
(APTRANSCO), Vidyut Soudha,
Hyderabad– 500082

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

4 Tamil Nadu Electricity Board (TNEB)
NPKRR Maaligai, 800, Anna Salai
Chennai – 600 002

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

6 Electricity Department
Govt. of Pondicherry,
Pondicherry - 605001

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 Ltd., (BESCOM),
Corporate Office, K. R. Circle
BANGALORE – 560001 Karanataka

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

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

14 MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle
MANGALORE – 575 001 Karnataka

15 Chamundeswari Electricity Supply Corporation Ltd., (CESC)
927, L J Avenue
Ground Floor, New Kantharaj Urs Road
Saraswatipuram, MYSORE – 570 009

16 Transmission Corporation of Telangana Limited,

Vidhyut Sudha, Khairatabad,
Hyderabad- 500082

17 Andhra Pradesh Solar Power Corporation Private Limited,
6-3-856/A3, Neeraj Public School Lane,
Opp. to Green Park Hotel, Ameerpet,
Hyderabad - 500 016 **…Respondents**

For Petitioner	:	Ms. Soumya Priyadarshinee, Advocate, PGCIL Ms. Manju Gupta, Advocate, PGCIL Shri S. S. Raju, PGCIL Shri V. P. Rastogi, PGCIL Shri Sandeep Kumawati, PGCIL Shri B. Dash, PGCIL Shri Rakesh Prasad, PGCIL Shri A. Choudhary, PGCIL
For Respondents	:	Shri S. Vallinayagam, Advocate, TANGEDCO

ORDER

The present petition has been filed by Power Grid Corporation of India Ltd. ("PGCIL") seeking approval of transmission tariff for ±100 MVAR STATCOM at NP Kunta Pooling Station (hereinafter referred to as "transmission assets") under "Transmission System for Ultra Mega Solar Park in Anantpur District, Andhra Pradesh-Part A (Phase-I)" (hereinafter referred to as "transmission system") for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The Investment Approval (IA) for the said system was accorded by the Board of Directors of the petitioner vide Memorandum No C/CP/SolarPark-A.P-A dated 3.6.2015 at an estimated cost of ₹31294 lakh (based on February, 2015 price level). The project was scheduled to be commissioned within 12 months from the date of IA except that ±100 MVAR STATCOM at NP Kunta Pooling Station will be delivered alongwith Phase-II of the project. The investment

approval for transmission system for Ultra Mega Solar Park in Anantpur District (Phase-II) was accorded by the Board of directors of the petitioner vide Memorandum dated 15.1.2016 at an estimated cost of ₹9909 lakh (based on August, 2015 price level). The project is scheduled to be commissioned within 16 months for Loop-in portions and 30 months for Loop-out portion from the date of Investment Approval. Therefore, the scheduled date of commercial operation of the transmission system was 12.7.2018.

3. The petitioner was entrusted with the instant transmission scheme and it was discussed and agreed in Standing Committee Meeting held on 7.3.2015 and 27th SRPC meeting held on 12.5.2015. The broad scope of the Project is as follows:-

Transmission Line

i. LILO of 400 kV Kadapa- Kolar S/C Line at NP Kunta Sub-station

Sub Station

i. Establishment of 400/220 kV NP Kunta Sub-station with 3*500MVA Transformers.
ii. 2 nos. 220 kV line bays at NP Kunta Pooling Station

Reactive Compensation

i. 1x125 MVAR, 420 kV bus reactor at NP Kunta Sub-station.
ii. ±100 MVAR STATCOM at NP Kunta Pooling Station

4. The details of other assets covered in the instant transmission system and the petition under which they are covered are as follows:-

Srl. No.	Description	Schedule commissioning	Actual COD	Covered in Petition No.
1.	LILO of 400 kV Kadapa-Kolar S/C Line at NP Kunta along with	11.5.2016	28.4.2016	26/TT/2016

	associated line bays and 1 No. of 500 MVA ICT along with its bays at NP Kunta Sub-station 2X500 MVA transformer and 1x125 MVAR reactor alongwith associated bays at NP Kunta			
2.	±100 MVAR STATCOM at NP Kunta Pooling Station-	12.7.2018	4.6.2017	Covered under current petition

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

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Depreciation	335.98	457.48
Interest on Loan	329.50	410.20
Return on Equity	427.93	603.50
Interest on working capital	29.58	39.26
O & M Expenses	109.74	137.42
Total	**1232.73**	**1647.86**

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

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Maintenance Spares	19.95	20.61
O & M Expenses	11.08	11.45
Receivables	249.04	274.64
Total	**280.07**	**306.70**
Rate of Interest	12.80%	12.80%
Interest	29.56	39.26

7. The petitioner has served the petition on the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 ("the Act"). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of

the Act. Tamil Nadu Generation and Distribution Corporation Limited, Respondent No. 4, (hereinafter referred to as "TANGEDCO") has filed replies vide affidavit dated 28.7.2017 and 29.1.2018. The petitioner has filed its rejoinder to the reply of TANGEDCO vide affidavit dated 28.12.2017 and 16.2.2018. The issues raised by TANGEDCO and the clarifications given by the petitioner are dealt in relevant paragraphs of this order.

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

Date of Commercial Operation

9. Initially, the petitioner claimed that the instant asset was anticipated to be put into commercial operation on 1.4.2017. Later, vide affidavit dated 3.8.2017, it was submitted that instant asset was put into commercial operation on 4.6.2017. The petitioner has also submitted the RLDC certificate, certificate of CEA under Regulation 43 of CEA (Measures Related to Safety and Electric Supply) Regulations, 2010 as well as certificate of CMD as required under the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.

10. As per the investment approval, the instant asset was planned to be commissioned along with the COD of the first element of Phase-II i.e. by 12.7.2018. The petitioner has advanced the COD of the STATCOM along with Phase-I elements.

11. TANGEDCO, in its reply, has submitted that as per the investment approval the instant asset was planned to be put into commercial operation alongwith

COD of the first element of Phase II, i.e. by 12.7.2018. However, the petitioner has advanced the COD of the asset and is claiming tariff from 1.4.2017. There is no necessity for the petitioner to advance the commissioning of the STATCOM along with Phase I elements. TANGEDCO has further submitted that as per the technical guidelines, inverters in the solar plants are contributing to the LVRT capabilities of the solar plants and not the STATCOM. Therefore, STATCOM is going to serve same purpose and is not required in Phase I. TANGEDCO has also submitted that the petitioner has failed to furnish the proof of deliberation and acceptance of beneficiaries for advancement of the commissioning of the asset either in the SCM or SRPC meeting.

12. Taking into consideration the submissions of TANGEDCO, the Commission directed the petitioner to submit the reasons for advancing the COD of the instant asset and the details of the system studies made.

13. In response, the petitioner has submitted that in the 38th meeting of Standing committee on power system planning of Southern Region held on 7.3.15, ±100 MVAR STATCOM at 400 kV NP Kunta PS was agreed to provide grid support as well as voltage ride through support to solar generation. In addition, as NP Kunta is proposed to be connected to 400 kV Hindupur, a major wind complex inter-connected with other wind generation pockets in A.P., this STATCOM shall also extend voltage support to generation projects in the event of contingency scenarios. Results of dynamic studies in this regard for various contingency conditions and impact of STATCOM in such events has already been submitted.

14. As regards the advancement of the COD of the instant asset, the petitioner has submitted that in the agenda circulated for 38th Standing Committee on Power System Planning of SR by CEA, under para 17.6.1, need of STATCOM providing grid support during various contingency conditions as well as fault ride through was mentioned along with NP Kunta Phase-I Transmission system. In the agenda, it was also mentioned that RE generation including solar is characterized by intermittency and variability as well as having low/high voltage ride through issues. To address above aspects, dynamic compensation in the form of ±100 MVAR STATCOM at 400 kV NP Kunta was proposed. This STATCOM shall help in voltage ride through as well as support the grid during various operational conditions. The petitioner has further submitted that it will also provide support to nearby wind generation complex of AP to a certain extent in the event of fault ride through requirement. The requirement for STATCOM was proposed primarily for Grid support and other requirements which was required even with NP Kunta Phase-I generation. Accordingly, vide para 17.7, requirement of STATCOM was proposed with NP Kunta Phase-I transmission system. Based on the above agenda, in the 38th meeting of Standing committee on Power System Planning of SR held on 7.3.2015, following was discussed and agreed:-

(i) STATCOM was primarily identified to provide Grid Support through voltage control. In addition it will also help in voltage ride through support to variable RE generation; and

(ii) In the meeting, it was also deliberated that all the three phases of NP Kunta Generation are to be commissioned with only a few months of difference between each of the phases (Phase-I: December, 2015, Phase-II: September, 2016, Phase-III: December, 2016) and accordingly, it would be preferred to order the complete system for all three stages together but with delivery schedule matching with each phase. The delivery of STATCOM also can be matched with Phase-II which was scheduled in September, 2016 by APSPCL.

15. As regards the approval of the constituents of the SR, the petitioner submitted that the COD of STATCOM at NP Kunta was discussed and agreed in 32nd meeting of TCC held on 16.2.2018 and 33rd meeting of SRPC held on 17.2.2018. SRPC approved commissioning of STATCOM on 4.6.2017 under Phase-I.

16. We have considered the submissions of the petitioner and TANGEDCO regarding the advancement of the COD of the instant asset. The petitioner has submitted that the COD of the instant asset was advanced and put into commercial operation on 4.6.2017 alongwith the Phase-I of the transmission system for Ultra Mega Solar Park. In support of commercial operation date, the petitioner has submitted the RLDC certificate dated 5.7.2017 issued by SRLDC, the CEA certificate dated 30.3.2017, under Regulation 43 of CEA (Measures Related to Safety & Electricity Supply) Regulations, 2010 and the CMD certificate. The instant asset would provide grid support through voltage control and also help in voltage ride through support to variable RE generation. It is further observed that the advancement of COD of the instant asset was discussed in the 38th Standing Committee Meeting on Power System Planning of SR and it was also discussed and agreed in the SRPC meeting held on 17.2.2018. Taking into consideration that the instant asset helps in grid support

and voltage control and that the advancement has been agreed to by the constituents of SR, the advancement of the instant asset is approved and the COD of the instant asset is considered as 4.6.2017.

Capital cost

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

> "(1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects."
>
> (2) The Capital Cost of a new project shall include the following:
>
> (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
>
> (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
>
> (c) Increase in cost in contract packages as approved by the Commission;
>
> (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
>
> (e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
>
> (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations; 39
>
> (g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
>
> (h) adjustment of any revenue earned by the transmission licensee by using the assets before COD."

18. The petitioner vide affidavit dated 12.12.2017 has submitted the details of approved apportioned cost, capital cost as on the date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred

during 2017-18 and 2018-19 along with estimated completion cost of the instant asset covered and the details are as under:-

(₹ in lakh)

Approved apportioned Cost as per Investment approval	Expenditure Up to COD	Proposed Expenditure		Estimated completion Cost
		2017-18	2018-19	
11015.51	7781.39	1668.62	987.86	10437.87

19. The petitioner has submitted that STATCOM is not a standard product like transformers/reactors, rather only the voltage, MVAR rating and location were provided. Based on that, the detailed design of equipment used in STATCOM station is worked out by respective manufacturer during detail project scope. During the preparation of DPR/FR of the STATCOM budgetary quotation was sought from reputed vendors who are in the business of supplying STATCOM worldwide. These are quoted amount on indicative basis and firm offer was made based on the detailed project scope. Thus, while preparing DPR/FR of the STATCOM which is based on the budgetary quotes, the detailed item wise unit price was not available in FR. We have considered the submissions of the petitioner. It is observed that the projected completion cost of ₹10437.87 lakh is within the approved apportioned cost of ₹11015.51 lakh and there is no cost over-run.

20. As per Investment Approval, the commissioning schedule for loop-in portion of the project is 16 months and loop out portion is 30 months from the date of investment approval. Hence, the commissioning scheduled for the instant asset was 12.7.2018 against which the asset has been put under commercial operation on 4.6.2017. Hence, there is no time over-run.

Interest During Construction (IDC)

21. The petitioner has claimed IDC of ₹345.64 lakh. The petitioner has

submitted IDC statement which mentions that out of ₹345.64 lakh, the amount of IDC discharged up to COD is ₹209.58 lakh and balance IDC of ₹123.31 lakh and ₹12.75 lakh has been discharged during 2017-18 and 2018-19 respectively. The IDC statement includes SBI loan pertaining to Quarter 4, 2015-16. The petitioner has shown multiple drawls with floating rate of interest for SBI loan but no interest rate has been mentioned. Hence, we have considered the interest rate as given in Form-9C for all the drawl of SBI loan. The details of IDC allowed are summarised below:-

(₹ in lakh)

IDC Claimed as per the Auditor's Certificate	Entitled IDC as on COD as worked out	IDC Dis-Allowed as on COD due to computation difference (A-B)	Un-discharged portion of Entitled IDC as on COD	IDC Allowed on cash basis as on COD
a	b	c=a-b	d	e=a-c-d
345.64	331.12	14.52	125.24	205.88

The undischarged portion of IDC has been considered as ACE during the year of discharge. The allowed IDC shall be reviewed at the time of truing up subject to the submission of interest rate for SBI loan and discharge of IDC liability.

Incidental Expenditure During Construction (IEDC)

22. The petitioner has claimed IEDC of ₹214.95 lakh. The IEDC as per the abstract cost estimate is 10.75% of the estimated hard cost which has been considered as the maximum limit for allowing IEDC. Thus, claimed IEDC of ₹214.95 lakh is within limits and the same has been considered as allowed IEDC.

Treatment of Initial Spares

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

“13. Initial Spares

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

(i) Transmission line - 1.00%

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

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

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

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

(vi) Communication system-3.5%

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

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

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

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

24. The petitioner has claimed ₹346.89 lakh as initial spare pertaining to sub-station. The petitioner was directed to submit year wise capitalization and discharge details of initial spares for the instant asset. In response, the petitioner vide affidavit dated 13.3.2018 has submitted the expenditure on initial spares included in the Auditor certificate as per cash expenditure. The discharge of initial spares as included in the Auditor certificate is given below:-

(₹ in lakh)

Particulars	Total initial spares	Expenditure on initial spares Upto COD and included in auditor certificate upto COD	Expenditure on initial spares in 2017-18 (Add cap)	Expenditure on initial spares in 2018-19 (Add cap)
Sub-station	346.89	242.82	69.38	34.69

The petitioner‘s claim of ₹346.89 lakh towards initial spare is within the ceiling limit of 4.00% of the capital cost as specified in the 2014 Tariff Regulations.

<u>Treatment of grant received</u>

25. TANGEDOC has submitted that the petitioner has not submitted the details of the MNRE grant and Central Financial Assistance (CFA) granted for the instant transmission system. In response, the representative of the petitioner submitted that they have applied for CFA grant from MNRE in October, 2016, which is likely to be approved within two to three months

26. The petitioner further submitted that the petitioner has received a grant of ₹2647.63 lakh during 2017-18 (up to 30.9.2017) towards transmission system Ultra Mega Solar Park in Anantpur. Out of this grant, an amount of ₹1273.25 lakh has been allocated to the current asset and the same is adjusted in the capital cost as detailed below:-

i. ₹383.06 lakh upto COD.

ii. ₹796.80 lakh from COD to 30.9.2017 and

iii. Balance amount ₹93.39 lakh to meet the anticipated expenditure during 2017-18.

As per proviso to clause (d) of Regulation 9(6) of the 2014 Tariff Regulations is reproduced hereunder:-

…."provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation."

27. Further, proviso (iii) of Regulation 19(1) of the 2014 Tariff Regulations provides as under:-

"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."

28. Thus, based on the 2014 Tariff Regulations, ₹383.06 lakh has been reduced from allowable COD cost and balance amount i.e. ₹890.19 lakh (₹796.80 lakh and ₹93.39 lakh) has been reduced from allowable additional capital expenditure for the financial year 2017-18.

Capital cost as on COD

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

(₹ in lakh)

Capital cost as on COD claimed by the petitioner	**IDC dis-allowed due to computational difference**	**Un-discharged IDC as on COD**	**IEDC disallowed on COD.**	**Grants received up to COD**	**Capital Cost as on COD considered for tariff calculation**
1	2	3	4	5	6= (1-2-3-4-5)
7781.39	14.52	125.24	0.00	383.06	**7258.57**

Additional Capital Expenditure

30. 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."

31. 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".

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

33. The petitioner has claimed ACE based on the cost certified by the Auditor. In addition, the petitioner has claimed the ACE towards discharge of IDC liability. Considering both, the petitioner has submitted revised Form-7 vide affidavit date 13.3.2018. The ACE claimed in Auditor certificate and Form-7 are summarized below:-

(₹ in lakh)

Particulars	**Regulation**	**2017-18 (COD to 31.3.2018)**	**2018-19**
Discharge of liabilities on Hard cost	14(1)(i)	1327.40	674.72
Add cap towards works deferred for execution (by addition into gross block)	14(1)(ii)	341.22	313.14
Total add-cap as per Auditor Certificate (excluding discharge of IDC liability)(1+2)		1668.62	987.86
Discharge of IDC Liability	14(1)(i)	123.31	12.75
Total **add-cap claimed as per Form 7 (3+4)**		**1791.93**	**1000.61**

34. The worked out undischarged IDC as on COD has been allowed as additional capital expenditure during the year of discharge. Further, as per auditor certificate, the grant received during 2017-18 is ₹890.19 lakh (₹796.80 lakh and ₹93.39 lakh) which has been reduced from allowable additional capital expenditure of 2017-18. Accordingly, the additional capital expenditure allowed has been summarized as under, which shall be reviewed at the time of true up:-

(₹ in lakh)

Allowed Add-cap	Regulation	2017-18	2018-19
Discharge of Liability on Hard Cost	14(1)(i)	1327.40	674.72
Add cap to the extent of unexecuted work	14(1)(ii)	341.22	313.14
Discharge of undercharge liabilities-IDC.	14(1)(i)	123.31	1.93
Total allowable add-cap		**1791.93**	**989.79**
Less: Grants Received as per Auditor Certificate		890.19	0.00
Additional Capital Expenditure considered for tariff		**901.74**	**989.79**

35. The capital cost considered for the purpose of computation of tariff is as follows:-

(₹ in lakh)

Capital cost allowed as on COD	Add cap for 2017-18	Add cap for 2018-19	Total estimated completion cost as on 31.3.2019
7258.57	901.74	989.79	9150.10

Debt-Equity Ratio

36. 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."

37. 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 and 31.3.2019 considered on normative basis are as under:-

(₹ in lakh)

Particulars	**Capital cost as on COD**		**Capital cost as on 31.3.2019**	
	Amount	**%**	**Amount**	**%**
Debt	5081.00	70.00	6405.07	70.00
Equity	2177.57	30.00	2745.03	30.00
Total	**7258.57**	**100.00**	**9150.10**	**100.00**

Return on Equity

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

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

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

Provided that:

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

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

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

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

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

(vi) additionalRoE 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."

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

is subject to truing up based on the effective tax rate of respective financial year applicable to the petitioner company. The petitioner vide affidavit dated 2.8.2017 has claimed the additional of 0.5% as per Regulation 24(2)(i) of the 2014 Tariff Regulations wherein the qualifying time for getting additional ROE is 30 months for new sub-stations and had submitted revised tariff forms vide affidavit dated 15.1.2018.

40. We have considered the submissions of the petitioner. The petitioner has claimed additional ROE @ 0.5% under Regulation 24(2)(i) of the 2014 Tariff Regulations. There is no separate time line specified for the STATCOM in the 2014 Tariff Regulations. Since NP Kunta Sub-station has already been commissioned under Phase-I on 28.4.2016 which becomes existing substation for the STATCOM and hence the instant assets are not eligible for additional RoE of 0.5%. Accordingly, the RoE allowed is as follows:-

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Opening Equity	2177.57	2448.09
Addition due to Additional Capitalisation	270.52	296.94
Closing Equity	2448.09	2745.03
Average Equity	2312.83	2596.56
Return on Equity (Base Rate)	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%
Return on Equity (Pre-tax)	**374.02**	**509.19**

Interest on Loan

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

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

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

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

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

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

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

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

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

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

(i)The gross normative loan has been considered as per the Loan amount determined based on the debt equity ratio applied on the allowed capital cost;

(ii) The depreciation allowed has been considered as Normative repayment of loan;

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

43. Detailed calculations in support of IoL in case of the instant assets are given at **Annexure** of this order. The details of IoL allowed are as under:-

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Gross Normative Loan	5081.00	5712.22
Cumulative Repayment upto Previous Year	0.00	335.68
Net Loan-Opening	5081.00	5376.54
Addition due to Additional Capitalisation	631.22	692.85
Repayment during the year	335.68	456.99
Net Loan-Closing	5376.54	5612.39
Average Loan	5228.77	5494.46
Weighted Average Rate of Interest on Loan	8.0156%	8.0144%
Interest	**345.63**	**440.35**

<u>Depreciation</u>

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

"27. Depreciation:

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

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

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall

be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

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

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

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

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

4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

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

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

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

45. The petitioner has claimed actual depreciation as a component of annual fixed charges. In our calculations, depreciation has been calculated in accordance with Regulation 27 of the 2014 Tariff Regulations extracted above.

46. The instant transmission asset was put under commercial operation on 4.6.2017. Accordingly, it will complete 12 years after 2018-19 tariff block. As such, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations.

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

(₹ in lakh)

Particulars	2017-18 (pro-rata)	2018-19
Opening Gross Block	7258.57	8160.31
Additional Capital expenditure	901.74	989.79
Closing Gross Block	8160.31	9150.10
Average Gross Block	7709.44	8655.21
Rate of Depreciation	5.2800%	5.2800%
Depreciable Value	6938.50	7789.69
Remaining Depreciable Value	6938.50	7454.00
Depreciation	**335.68**	**456.99**

Operation & Maintenance Expenses(O & M Expenses)

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

Element	2014-15	2015-16	2016-17	2017-18	2018-19
400 kV bay	60.30	62.30	64.37	66.51	68.71

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

(₹ in lakh)

Particulars	2017-18	2018-19
O&M Expenses	109.74	137.42

50. 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.

51. We have considered the submissions of the petitioner. The O&M Expenses have been worked out as per the norms 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 (IWC)

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

> "**28. Interest on Working Capital**
>
> (1) The working capital shall cover:
>
> (c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:
>
> (i) Receivables equivalent to two months of fixed cost;
>
> (ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
>
> (iii) Operation and maintenance expenses for one month"
>
> (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.
>
> "(5) 'Bank Rate' means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;"

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

(i) Receivables

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

(ii) Rate of interest on working capital

As per Proviso 3 of Regulation 28 of the 2014 Tariff Regulation, SBI Base rate 9.30% as on 1.4.2017 plus 350 Bps i.e. 12.80% has been considered for the asset, as the rate of interest on working capital.

54. Accordingly, the IWC as determined is as under:-

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Maintenance Spares	19.95	20.61
O & M expenses	11.09	11.45
Receivables	241.27	263.63
Total	272.31	295.70
Interest	**28.74**	**37.85**

<u>Transmission charges</u>

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

(₹ in lakh)

Particulars	**2017-18 (pro-rata)**	**2018-19**
Depreciation	335.68	456.99
Interest on Loan	345.63	440.35
Return on equity	374.02	509.19
Interest on Working Capital	28.74	37.85
O & M Expenses	109.70	137.42
Total	**1193.78**	**1581.80**

56. The petitioner has submitted that the claim for transmission charges and other charges is exclusive of incentive, late payment surcharge, FERV, any statutory taxes, levies, duties, cess filing fees, license fee, RLDC fees and charges or any other kind of impositions etc. The same if imposed shall be borne and additionally paid by the respondents. The petitioner is entitled to FERV as provided under Regulation 50 of the 2014 Tariff Regulations and the petitioner can make other claims as per the 2014 Tariff Regulations.

<u>Filing Fee and the Publication Expenses</u>

57. 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.

<u>Licence Fee and RLDC fees and Charges</u>

58. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

<u>Goods and Services Tax</u>

59. The petitioner has prayed for reimbursement of tax, if any, on account of implementation of GST. MPPMCL has submitted that the petitioner's claim is

premature. GST is not levied on transmission at present and as such we are of the view that petitioner's prayer is premature.

<u>Sharing of Transmission Charges</u>

60. The Commission observed that as per the minutes of the 38th SCM held on 7.3.2015, the CTU was to obtain clarification on the eligibility for LTA, connectivity, issue of multiple injections, whether the sub-station which is in the premises of the solar park should be under the scope of park developer or in STU/CTU and whether LTA should be applied by actual generation developers who may sign PPA with AP DISCOMS or the APSPCL and directed the petitioner to submit action taken and the clarifications received.

61. In response, the petitioner vide affidavit dated 12.12.2017 has submitted that as per Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission and related matters) Regulations, 2009 any company authorized by the central government as Solar Power park developer (SPPD) can apply for Connectivity/Long Term Access (LTA) in ISTS. MNRE vide its letter dated 3.6.2015 authorized APSPCL as a SPPD to apply for connectivity/LTA in ISTS for its NP Kunta Solar Park (1500 MW). As regards multiple injections, the petitioner submitted that according to the Statement of Reasons to the above said regulations, in a solar power park there may be multiple generation developers who may be injecting at various points within the solar park and ultimately inject at interface with ISTS. Hence, it will be treated as single injection at the interface point with ISTS. On the issue of whether the sub-station within the solar park should be under the scope of park developer or STU/CTU, the

petitioner submitted that as per the Government of India (MNRE) letter dated 12.12.2014, the responsibility of setting up a sub-station near solar park will lie with the CTU or the STU taking into consideration the technical and commercial requirement stipulated by the State and Central Commission.

62. TANGEDCO has submitted that in case of State specific solar projects there are no identified beneficiaries outside the host State and there is no inter-State flow of power as there is no firmed-up beneficiary outside the State. Further, the regulations do not permit the socialization of the PoC charges among the beneficiaries of ISTS. TANGEDCO has submitted that it has raised the issue of ambiguous procedure for implementation of the waiver of the transmission charges for the solar and wind power under PoC mechanism.

63. TANGEDCO has submitted that the Central Electricity Regulatory Commission (sharing of inter-State Transmission Charges and Losses) Regulations, 2010 (2010 Sharing Regulations) did not account for solar power injections into grid due to the capacity limitations and dispersal at distribution level. As per the Statement of Reasons of the 2010 Tariff Regulations, the 2010 sharing Regulations facilitate solar based generation by allowing zero transmission access charge for use of ISTS and allocating no transmission loss to solar based generation. Solar power generators shall be benefited in event of use of the ISTS. Since such generation would normally be connected at 33 kV, the power generated by such generators would most likely be absorbed locally. This would cause no / minimal use of 400 kV ISTS network and might also lead to reduction of losses in the 400 kV network by obviating the need for power from distant generators. TANGEDCO has submitted that in contrast to the Statement

of Reasons, the present scenario is different as the solar power has attained grid parity and the capacity is of the order of 1000 MW and above. This peculiar situation necessitates revisiting the methodology for determining the PoC charges and the Sharing Regulation. The sharing Regulations in the present form will only pass on financial burden on account of the inefficiencies/inaccuracies in allocating the charges on to the existing DICs irrespective of whether they are beneficial user or not. TANGEDCO is in no way connected with the sharing of the transmission charges since it is neither the beneficiary of the State specific solar project nor using the transmission lines. The power generated and consumed within the State of Andhra Pradesh does not entitle levy of transmission charges on TANGEDCO and hence the claim of the petitioner is not maintainable.

64. In response, the petitioner in its rejoinder dated 28.12.2017 has submitted that Ministry of Power, Govt. of India vide its letter No. 11/64/2014-PG dated 8.1.2015 while dealing with the evacuation of power from nine solar parks (7020 MW capacity) being set up in seven States including Andhra Pradesh Solar Ultra Mega Park observed that the transmission line connecting solar parks to ISTS are to be declared part of ISTS and PGCIL is assigned to take up construction of transmission line including pooling station from solar generating parks on compressed time schedule basis. Further, the issue of implementation of the transmission line for connecting the Solar Power Parks to the ISTS was discussed in the 38th meeting of the Standing Committee on Power System Planning of Southern Region held on 7.3.2015 and it was agreed that the proposal was technically in order and could be firmed up subject to resolving the regulatory issues. The scheme was technically validated in the 38th SCM and at Para 21.21 of the 38th SCM following submissions were made with respect to

scheme and STATCOM. The scheme was also deliberated in 27th meeting of SRPC held on 12.05.2015 in presence of all Southern region constituents. The Commission in order dated 6.8.2015 in Petition No. 29/MP/2015 accorded the regulatory approval for execution of the instant transmission. The petitioner has submitted that the sharing of transmission charges for Solar Park at Anantpur district, Andhra Pradesh has already been decided by the Commission wherein it was held that billing, collection and disbursement of transmission charges shall be governed by the 2010 Sharing Regulations.

65. TANGEDCO has submitted that it has filed an appeal against the Commission's order dated 16.5.2016 in Petition No.26/TT/2016 before the Hon'ble Appellate Tribunal for Electricity and it is pending disposal.

66. We have considered the submissions of the petitioner and TANGEDCO. We are not able to agree with TANGEDCO that waiver of ISTS charges for solar and wind generation is not in order. We are of the view that the waiver of transmission charges for solar and wind generation is as per provisions of Sharing Regulations 2010 and is in line with government policy to encourage renewable energy in the country. Therefore, the billing, collection and disbursement of the transmission charges approved for the instant asset 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, subject to the outcome of the Appeal filed by TANGEDCO before APTEL.

67. This order disposes of Petition No. 133/TT/2017.

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

<u>Annexure</u>

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN			
			(₹ in lakh)
	Details of Loan	**2018-19**	**2018-19**
1	**Bond LIII**		
	Gross loan opening	1431.17	1431.17
	Cumulative Repayment upto COD/previous year	0.00	0.00
	Net Loan-Opening	1431.17	1431.17
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	1431.17	1431.17
	Average Loan	1431.17	1431.17
	Rate of Interest	8.13%	8.13%
	Interest	116.35	116.35
	Rep Schedule	12 annual installments from 25.4.2020	
2	**Bond LIV**		
	Gross loan opening	977.00	977.00
	Cumulative Repayment upto COD/previous year	0.00	0.00
	Net Loan-Opening	977.00	977.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	977.00	977.00
	Average Loan	977.00	977.00
	Rate of Interest	7.97%	7.97%
	Interest	77.87	77.87
	Rep Schedule	12 annual installments from15.7.2021	
3	**Bond LVII**		
	Gross loan opening	603.74	603.74
	Cumulative Repayment upto COD/previous year	0.00	0.00
	Net Loan-Opening	603.74	603.74
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	603.74	603.74
	Average Loan	603.74	603.74
	Rate of Interest	7.20%	7.20%
	Interest	43.47	43.47
	Rep Schedule	12 annual installments from 21.12.2021	
4	**SBI Loan (2016-17)**		
	Gross loan opening	827.00	**827.00**
	Cumulative Repayment upto COD/previous year	0.00	**0.00**
	Net Loan-Opening	827.00	827.00
	Additions during the year	0.00	0.00

	Repayment during the year	0.00	0.00
	Net Loan-Closing	827.00	827.00
	Average Loan	827.00	827.00
	Rate of Interest	8.90%	8.90%
	Interest	73.60	73.60
	Rep Schedule	NA	
5	**Bond LVI**		
	Gross loan opening	398.00	**398.00**
	Cumulative Repayment upto COD/previous year	0.00	**0.00**
	Net Loan-Opening	398.00	398.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	398.00	398.00
	Average Loan	398.00	398.00
	Rate of Interest	7.36%	7.36%
	Interest	29.29	29.29
	Rep Schedule	12 annual installments from18.10.2026	
6	**Bond LVIII**		
	Gross loan opening	731.76	**818.07**
	Cumulative Repayment upto COD/previous year	0.00	**0.00**
	Net Loan-Opening	731.76	818.07
	Additions during the year	86.31	8.93
	Repayment during the year	0.00	0.00
	Net Loan-Closing	818.07	827.00
	Average Loan	774.92	822.54
	Rate of Interest	7.89%	7.89%
	Interest	61.14	64.90
	Rep Schedule	NA	
	Total Loan		
	Gross loan opening	4968.67	5054.98
	Cumulative Repayment upto COD/previous year	0.00	0.00
	Net Loan-Opening	4968.67	5054.98
	Additions during the year	86.31	8.93
	Repayment during the year	0.00	0.00
	Net Loan-Closing	5054.98	5063.91
	Average Loan	5011.83	5059.45
	Rate of Interest	8.0156%	8.0144%
	Interest	401.73	405.48