TAMIL NADU ELECTRICITY REGULATORY COMMISSION
(Constituted under section 82 (1) of the Electricity Act, 2003)
(Central Act 36 of 2003)

PRESENT:

Thiru.M.Chandrasekar .... Chairman

Dr.T.Prabhakara Rao …. Member

and

ThiruK.Venkatasamy …. Member (Legal)

M.P. No.13 of 2020

Tamil Nadu Generation and Distribution
Corporation Limited
Represented by the Chief Engineer / Commercial
No.144, Anna Salai
Chennai – 600 002.

… Petitioner
(Thiru.M.Gopinathan,
StandingCounsel for TANGEDCO)

Dates of hearing : 09-06-2020 and 14-07-2020;

Date of Order : 08-12-2020

The M.P.No.13 of 2020 came up for final hearing on 14-07-2020. The Commission upon perusal of the petition and connected records and after hearing the submissions of the petitionerhereby makes the following:-

ORDER

1. Prayer of the Petitioner in M.P.No.13 of 2020:-

The prayer of the Petitioner in M.P.No.13 of 2020 is to pass an appropriate order to adopt the above procedures mentioned in Para (9.0) above for assessment of billing of both import and export energy in cases where there is no bi-directional meter or bi-directional meter is defective for

the LT solar Rooftop services and necessary provision in Tamil Nadu Electricity Supply Code in Clause 11 of Chapter-2.

2. Facts of the Case:

This petition seeks approval for adopting the procedure for assessment of both import and export of energy for billing purpose in LT solar Rooftop services when there is no bi-directional meter or defective bi-directional meter in Solar Net meter and net feed-in Services under Tamil Nadu Solar Policy 2012 and Tamil Nadu Solar Energy Policy 2019 and subsequent policies if any in future and to make necessary provisions in Clause 11 of Chapter 2 in Tamil Nadu electricity Supply Code.

3. Contention of the Petitioner:

3.1. The vision Tamil Nadu 2023, a Strategic Plan for Infrastructure Development in Tamil Nadu includes a solar energy target of 5,000MW. Ministry of New and Renewable Energy (MNRE) proposed a solar energy target for the year 2022 of 9,000 MW for Tamil Nadu. Recently, Tamil Nadu Government came out with Tamil Nadu Solar Energy Policy, 2019 to promote Solar Energy generation in the State to achieve installed the solar energy generation capacity of 9,000 MW by 2023. Out of this, 40% is earmarked for consumer category solar energy systems.

3.2. The Cabinet Committee on Economic Affairs (CCEA) has approved the Phase-2 of Grid Connected Roof top solar programme for achieving cumulative capacity of 40 Giga Watts (GW) from Rooftop Solar projects by 2022 through a

total Central Financial support of Rs.11,814 Crore. This scheme is proposed to be implemented through the Electricity Distribution Companies (DISCOMs) with Central Financial Assistance (CFA) to residential sector and incentives to DISCOMs — for initial 18 GW Capacity. The main objective of Phase-2 of Grid Connected Rooftop Solar Programme is to bring DISCOMs in the forefront as key drivers for rapid development of RTS in promoting them in the Residential, Institutional, Social, Government, Commercial and Industrial Sectors.

3.3. The petitioner has proposed to participate in phase-2 of Grid connected Rooftop solar for achieving aggregate capacity requirement of Rooftop Solar for Tamil Nadu under the subsidy programme for residential sector for the year 2019-20 for 5 MW. Also, it is proposed to avail incentive from the Ministry of New and Renewable Energy (MNRE) for achievements above the cumulative Roof top Solar capacity installed at the end of 31.03.2019 which is 45.42 MW.

3.4. In this scenario of necessity in implementation of Solar Rooftop Systems, large number of solar developers and consumers are approaching TANGEDCO for installation of Solar Rooftop plants. Accordingly, a procedure need to be evolved for assessment of import and export of energy for billing purpose in LT Solar Rooftop Services during the defective period of bi-directional meters.

The Tamil Nadu Electricity Supply Code, Clause 11 of Chapter 2 has the following provision in respect of Assessment of billing in cases where there is no meter or meter is defective.

"Chapter 2: ELECTRICITY CHARAGES BILLING AND RECOVERY

Clause 11: Assessment of billing in cases where there is no meter or meter is defective:

(1) *Where supply to the consumer is given without a meter or where the meter fixed is found defective or to have ceased to function and no theft of energy or violation is suspected, the quantity of electricity supplied during the period when the meter was not installed or the meter installed was defective, shall be assessed as mentioned hereunder.*

(2) The quantity of electricity, supplied during the period in question shall be determined by taking the average of the electricity supplied during the preceding four months in respect of both High Tension service connections and Low Tension service connections provided that the conditions in regard to use of electricity during the said four months were not different from those which prevailed during the period in question.

(3) In respect of High Tension service connections, where the meter fixed for measuring the maximum Demand becomes defective, the Maximum Demand shall be assessed by computation on the basis of the average of the recorded demand during the previous four months.

(4) Where the meter becomes defective immediately after the service connection is effected, the quantum of electricity supplied during the period in question is to be determined by taking the average of the electricity supplied during the succeeding four months periods after installation of a correct meter, provided the conditions in regard to the use of electricity in respect of such Low Tension service connections are not different. The consumer shall be charged monthly minimum provisionally for defective period and after assessment the actual charges will be recovered after adjusting the amount collected provisionally.

(5) If the conditions in regard to use of electricity during the periods as mentioned above were different, assessment shall be made on the basis of any consecutive four months period during the preceding twelve months when the conditions of working were similar to those in the period covered by the billing.

(6) Where it is not possible to select a set of four months, the quantity of electricity supplied will be assessed in the case of Low Tension service connections by the Engineer in charge of the distribution and in the case of High Tension service connections by the next higher level officer on the basis of the connected load and the hours of usage of electricity by the consumer.

(7) In case the consumer does not agree with the assessment made by the Engineer or the higher-level officer as the case may be, the matter may be referred to the

next higher-level officer of the Licensee. In case the consumer is still not satisfied, the consumer is at liberty to approach the respective Consumer Grievance Redressal Forum of the Licensee."

3.5. The provision for assessment of both imported and exported energy in case of defective bi-directional meter or no bi-directional meter in LT Solar Rooftop services need to be included in Tamil Nadu Electricity Supply Code.

3.6. In cases where there is no bi-directional meter or bi-directional meter is defective in LT Solar Rooftop services, the following procedure is proposed for assessment of billing of import energy and export energy.

Assessment of billing in cases where there is no bi-directional meter or bi-directional meter is defective in LT Solar Rooftop services.

(A) For import of energy.

(i) Where supply to the consumer is given without a bi-directional meter or wherethe bi-directional meter fixed is found defective or to have ceased to function and no theftof energy or violation is suspected, the quantum of electricity imported during the period when the bi-directional meter was not installed or the bi-directional meter installed was defective, shall be assessed in line with the existing provision of Tamil Nadu ElectricitySupply Code for non solar services mentioned above which is detailed below:

(a) The quantum of electricity imported during the period in question shall be determined by taking the average of the electricity imported during the preceding four months provided that the conditions in regard to use of electricity during the said four months were not different from those which prevailed during the period in question.

(b) Where the bi-directional meter becomes defective immediately after the service connection is effected, the quantum of electricity imported during the period in question is to be determined by taking the average of the electricity imported during the succeeding four months period after installation of a

correct bi-directional meter, provided the conditions in regard to the use of electricity are not different. The consumer shall be charged monthly minimum provisionally for defective period and after assessment the actual charges will be recovered after adjusting the amount collected provisionally.

(c) If the conditions in regard to use of electricity during the periods as mentioned above were different, assessment shall be made on the basis of any consecutive four months period during the preceding twelve months when the conditions working were similar to those in the period covered by the billing.

(d) Where it is not possible to select a set of four months, the quantum of electricity imported will be assessed by the Engineer in charge of the distribution.

(ii) Incase the consumer does not agree with the assessment made by the Engineer or the higher level officer as the case may be, the matter may be referred to the next higher-level officer of the Licensee. In case the consumer is still not satisfied, the solar consumer is at liberty to approach the respective Consumer Grievance Forum of the Licensee.

(B) For export of energy.

(1) For services wherein bi-directional meter becomes defective after previous assessments for a minimum period of 4 months:

The quantum of export of energy in units during the period in question shall be determined by taking the average of the exported energy during the preceding four months period.

(ii) For services wherein the bi-directional meter becomes defective after previous assessments for a minimum period of 4 months:

The quantum of energy exported to grid during the period in question is to be determined by taking the average of the export energy during the succeeding four months periods after installation of a correct bi-directional meter. Till such time, the consumer shall be charged provisionally for the defective period by assessing the quantum of export energy as follows:

Let the installed solar plant capacity : 1 KW

The Capacity Utilisation Factor (CUF) of Solar plant : 19%

Maximum energy that would be generated

by a 1 KW solar plant in a day : 1 x [19/100] x 24 = 4.56 Units/day

Or say 4 Units/day

Taking generation as 4 Units/day/KW and assuming that 50% of the generation is consumed by the consumer in a day, the export energy may be taken as 2 Units/day/KW.

The total energy exported during the periodofdefective bi-directional meter or no bi-directional meter = 2 x (defective period in days) x (Installed capacity of the solar power plant in KW) Units.

On fixing the correct bi-directional meter and assessment observed for four months, the provisional assessment made already may be reworked and demand notice may be raised after adjusting the amount collected provisionally.

(iii) Tamil Nadu has reasonably high solar insulation of 4.5 to 6 KW/Sq.m. with around 300 clear sunny days in a year. Though the solar energy generation cannot be predicted and it differs every day, the average generation in every month will be almost similar. Hence, generation of electricity during different period will not vary much.

(iv) Incase the solar net bi-directional meter service consumer does not agree with the assessment made by the Engineer or the higher level officer as the case may be, thematter may be referred to the next higher-level officer of the Licensee. In case theconsumer is still not satisfied, the consumer is at liberty to approach the respective Consumer Grievance Redressal Forum of the Licensee.

4. Contentions of the Petitioner in I.A.No.1of 2020 in M.P.No.13 of 2020:-

4.1.The M.P.No.13 of 2020 has been filed on 03.03.2020 seeking approval for adoption of the procedure for assessment of both import and export of energy for billing purpose in LT solar Rooftop services when there is no bi-directional meter or defective bi-directional meter in Solar Net meter and net feed-in

Services under Tamil Nadu Solar Policy 2012 and Tamil Nadu Solar Energy Policy 2019 and subsequent Policies, if any in future and to make necessary provisions in Clause 11 of Chapter 2 in Tamil Nadu Electricity Supply Code.

4.2. A typographical error occurred in the heading in Sl. No. 9 (B) (ii) in M.P. of 13 of 2020 filed before the Hon'ble Commission and hence the heading may be read as follows:

"(ii) For services wherein the bi-directional meter becomes defective immediately after the service connection is effected:"

4.3. The Commission may be pleased to pass an appropriate order to adopt the procedures mentioned in Para (9.0) in M.P. No.13 of 2020 for assessment of billing of both import and export energy in cases where there is no bi-directional meter or bi-directional meter is defective for the LT Solar Rooftop services and necessary provision in Tamil Nadu Electricity Supply Code in Clause 11 of Chapter 2.

5. Additional Affidavit filed on Behalf of the Petitioner:

5.1. The M.P. No. 13 of 2020 has been filed by TANGEDCO on 03.03.2020 seeking approval for adoption of the procedure for assessment of both import and export of energy for billing purpose in LT solar Rooftop services when there is no bi-directional meter or defective bi-directional meter in Solar Net meter and net feed-in Services till correct meter is installed under Tamil Nadu Solar Policy, 2012 and Tamil Nadu Solar Energy Policy, 2019 and subsequent Policies, if any in future and to make necessary provisions in Clause

11 of Chapter 2 in Tamil Nadu Electricity Supply Code till correct meters are installed.

5.2. An Interlocutory Application (IA) in M.P.No.13 of 2020 has been filed by TANGEDCO on 09.06.2020 for the typographical error in the heading in Sl.No.9(B) (ii) in M.P.No.13 of 2020.

5.3. The Commission during hearingon 09.06.2020 admitted the I.A. filed by TANGEDCO in M.P. No.13 of 2020 and have passed an order on the Miscellaneous petition M.P.No.13 of 2020 and directed TANGEDCO to webhost the petition seeking comments from the stakeholders.

5.4. Based on the daily orders issued by Tamil Nadu Electricity Regulatory Commission on 09.06.2020, TANGEDCO webhosted the Miscellaneous Petition in M.P.No.13 of 2020 in the TANGEDCO website on 11.06.2020 and requested the comments of stakeholders on or before 25.06.2020.

5.5. Thiru.R.ChinthathiraiArockiamSelvin, Marine Engineer, S/o. Late. C.Rayappan, 19513, Cruzpuram, Thoothukudi-628 001 and Thiru.MartinScherfier, Auroville Consulting (unit of Auroville Foundation), Auroville605101 have submitted their comments on the Miscellaneous Petition M.P.No.13 of 2020.

5.6. The comments of Thiru. R.ChinthathiraiArockiamSelvin, Marine Engineer, S/o.Late.C.Rayappan, 19513, Cruzpuram, Thoothukudi628 001 related to the subject of procedure for assessment of billing during the

defective period or no meter for LT Solar roof top service and the corresponding remarks of TANGEDCO as follows:

Comments of stakeholder:

(i) The period of reading can be modified in to monthly instead of bi-monthly reading. Each batch of meters has to be checked and calibrated with master piece. Calibration and comparison has to be made in case of doubt in reading.

Remarks of TANGEDCO:

The existing bi-monthly billing method may be continued. If any dispute arises in the billing/reading, TANGEDCO arranges for downloading of data with Common Meter Reading Instrument (CMRI) for comparison of reading for payment of charges by the consumer.

Comments of stakeholder:

(ii) The decrease in Capacity Utilisation Factor from 21% to 16 % gradually in a span of five years has to be taken into account.

Remarks of TANGEDCO:

The Capacity Utilisation Factor (CUF) of 19 % for Solar rooftop services has been considered by TANGEDCO for provisional assessment of export of solar energy based on the Comprehensive Tariff Order on solar energy of the Commission.

Comments of stakeholder:

(iii) Like calculation of rainfall, sunny hours per year have to be determined by every Distribution Licensee as a daily work.

Remarks of TANGEDCO:

Tamil Naduhas reasonably high solar insulation of 4.5 to 6 KW/Sq.m. with around 300 clear sunnydays in a year. Though the solar energy generation cannot be predicted andit differs every day, the average generation in every month will be almost similar.Hence, generation of electricity during different period will not varymuch.

5.7. Thiru.MartinScherfler, AurovilleConsulting (unit of Auroville Foundation), Auroville605 101 and the corresponding remarks of TANGEDCO as follows:

General Comments of stakeholder:

(i) The Commission may direct TANGEDCO to only purchase Energy meter with both active energy import register (OBIS code 1.8.0,) and the active energy export register (OBIS code 2.8.0.) readings. This requires the meter manufacturers to activate these display parameters with parameterisation software without any additional cost. By purchasing the above mentioned energy meters by TANGEDCO, the question of no stock of "bidirectional energy meters" does not arise since all meters will be "bidirectional".

(ii) Also, rationalisation of energy meters is proposed whereby only five meter types need to be kept in the TANGEDCO inventory (i.e.,) three meter types for LTservice connections and two meter types for HT service connections namely Single phase, class 1.0: 5-30A (or 5-60A), Three phase direct reading class 1.0: 10-100A (or 5-100A), Three phase LT CT, class 0.5: -5A, Three phase HT CT-VT, class 0.5: -5A **or** -1A, 110V, Three phase HT CT-VT, class 0.2: -5A or -1A, 110V.

(iii) The Commission may direct TANGEDCO to comply the clause 13.3

of Tamil Nadu Solar Energy Policy, 2019 to configure all new service connection meters in Tamil Nadu with bidirectional energy recording and display so that all new service connections and existing service connections for which the meters are replaced in the normal course of maintenance are ready for effecting solar energy net feed-in metering at any time in the future.

(iv) Replacing all conventional meters with smart meters as targeted by the Ministry of Power (Government of India) through UDAY scheme. With a smart metering infrastructure defective meters can be identified and replaced immediately.

(v) To direct TANGEDCO to replace the defective energy meters within seven working days by maintaining adequate stock of spare energy meters.

Remarks of TANGEDCO for comments (i) to (v) :

TANGEDCO procures meters with bidirectional facilities for implementation of meter in all services for the categories of LT meters (5-20A-Single phase, 10-60A-Three phase, 50-100 A- Three Phase), LTCT meter-240V/5 A and HT meter- 11OV/5A. Sufficient stock of meters (except LTCT) are available with TANGEDCO to meet out the arising requirement. To maintain sufficient stock of LTCT meters, the consumers are allowed to purchase directly from the empanelled vendors.

5.8. As per the directive issued by the Commission, Automated Meter Reading (AMR) Technology for LT service connections is being implemented in a phased manner.

5.9. Hence, sufficient stock of meters is being ensured by

TANGEDCO and replacement of defective meter are being carried out within the stipulated time schedule of the Commission and as per the norms in vogue.

(A) Method for computing imported active energy:

Proposed by TANGEDCO:

(a) *The quantum of electricity imported during the period in question shall be determined by taking the average of the electricity imported during the preceding four months provided that the conditions in regard to use of electricity during the said four months were not different from those which prevailed during the period in question.*

Comments of stakeholder:

From the date of commissioning of a solar PV system during the meter defective period, imported energy shall be computed as follows:

The average active energy import during the preceding four months minus 50% of estimated solar energy generation, whereby the estimated solar energy generation shall be computed on the basis of an average annual CUF (Capacity Utilisation Factor) of 19%".

Explanation of stakeholder:

If a solar energy system is commissioned during the period in which the meter is defective, there will be a reduction in energy import on account of self-consumption of the generated solar energy from the date of commissioning of the solar PV system. For the purpose of this calculation, self consumption of solar energy has been assumed as 50% of the gross solar energy generation.

Remarks of TANGEDCO:

The procedure for assessment of billing for import of energy in cases where bidirectional meter or bidirectional meter is defective in LT solar roof top services mentioned in the MP.No.13 of 2020 is based on the same procedure for assessment of billing in cases where there is no meter or meter is defective which is being adopted in the existing non solar services as per Clause 11, Chapter -2: Electricity charges – Billing and Recovery in Tamil Nadu Electricity Supply Code. Since this assessment of import of energy in the solar rooftop services for the defective period is the provisional assessment and final assessment will be made after fixing the correct bidirectional meter, the proposed procedure for assessment of import of energy in solar rooftop services during the defective period mentioned in Sl.No.9(A) of MP No.13 of 2020 may be accepted.

Proposed by TANGEDCO:

"(c) If the conditions in regard to use of electricity during the periods as mentioned above were different, assessment shall be made on the basis of any consecutive four months period during the preceding twelve months when the conditions of working were similar to those in the period covered by the billing.

(d) Where it is not possible to select a set of four months, the quantum of electricity imported will be assessed by the Engineer in charge of the distribution.

(ii) In case the Consumer does not agree with the assessment made by the Engineer or the higher level officer as the case may be, the matter may be referred to the next higher-level officer of the Licensee. In case the consumer is still not satisfied, the solar consumer is at liberty to approach the respective Consumer Grievance Redressal Forum of the Licensee."

Comments of stakeholder:

(C) If the conditions with regard to the import of energy during the

reference periods as mentioned above are different from the meter defect periods, assessment shall be made on the basis of any consecutive four months period during the preceding twelve months when the conditions relating to energy import were similar to those in the meter defect period.

(d) Where it is not possible to select a set of four months, the quantum of electricity imported will be assessed by the Licensee in consultation with the Consumer.

(ii) While issuing the assessment, the Licensee shall mention the name, designation and contact details of the officer(s) of the Licensee to whom the Consumer can appeal against such assessment (the "Appeal Officers").

In case the Consumer does not agree with the assessment made by the Appeal Officers the Consumer may approach the respective Consumer Grievance RedressalForum of the Licensee.

The appeal process shall be designed such that the Consumer does not have to make personal visits to any office of Licensee.

The appeal process shall be completed by Licensee within 30 (thirty) days from the date of first appeal by the Consumer."

Remarks of TANGEDCO:

The hierarchy of level of Officers in TANGEDCO with the details of designation and contact numbers are readily available in TANGEDCO's website.

In case the Consumer does not agree and not satisfied with the assessment made by the Engineer or the higher level officer or next higher-level officer of the Licensee, consumer is at liberty to approach the respective Consumer Grievance Redressal Forumof the Licensee. The extract of the relevant

Regulations of CGRF and Electricity Ombudsman, 2004 are submitted below:

S.No.(5) of **7 in PART-II:**

"……..*The complainant can represent himself or through a representative of his choice. Where the complainant or his representative fails to appear on the date of hearing before the forum, the forum may decide it on merits".*

S.No.(7) **of 7 in PART-II:**

"On receipt of remarks from the licensee or otherwise, the forum shall initiate enquiryinregard to the complaint after serving a notice of the said enquiry onthe complainant and the licensee concerned, mentioning the "date, time and venue" of the enquiry by *registered / speed post / special messenger and complete the said enquiry expeditiously and pass appropriate order on the complaint within a maximum period of 50 days from the date of receipt of complaint by the forum":*

S.No.8 in PART-11:

"Any consumer aggrieved by an order made by the Forum may prefer an appeal against such order to the Electricity Ombudsman within a period of 30 days from the date of the order".

Hence, in case of the grievances of the solar rooftop consumers also, the same can be redressed through the above established process.

(B) Method for computing exported active energy:

Proposed by TANGEDCO:

"(i) *For services wherein bi-directional meter becomes defective after previous assessmentsfor a minimum period of 4 months: The quantum of export energy in units duringthe period in question shall be determined by taking the average of the exported energy during the preceding four month's period."*

(ii) For services wherein the bi-directional meter becomes defective immediately

after the service connection is effected:

The quantum of energy exported to grid during the period in question is to be determined by taking the average of the export energy during the succeeding four months periods after installation of a correct bi-directional meter. Till such time, the consumer shall be charged provisionally for the defective period by assessing the quantum of export energy as follows:

Let the installed solar plant capacity: 1 KW

The CapacityUtilisation Factor (CUF) of Solar plant : 19%

Maximum energy that would be generated by a 1 KW

Solar plant in a day: 1 x [19/100] x 24= 4.56 Units/day,

or say 4 Units/day

Considering the generation as 4 Units/day/KW and assuming that 50% of the generation is consumed by the consumer in a day, the export energy may be taken as 2 Units/day/KW.

Comments of stakeholder:

"(i) For service connections where the energy meter becomes defective after previous activeenergy export assessments for a minimum period of 4 months:

The quantum of active energy export (in kWh) during the period in question shall bedetermined by taking the average of the export energy during the preceding fourmonths period plus a metering error compensation factor of 20%.

(ii) Forservice connections where the energy meter becomes defective within the first billingcycle after the service connection is effected:

The quantum of active energy export (in kWh) during the period in question is be determined by taking the average of the active energy export during the succeeding four months periods after installation of a correctly functioning

energy meter.

The Consumer shall be charged provisionally for the meter defective period by assessing the quantum of exported active energy as follows:-

Estimateofthe solar energy generation on the basis of an average annual CUF (CapacityUtilisationFactor) of 19%. For each 1 KW of solar PV capacity this would work out to an average generation of 4.6 kWh per day (1 kW x 24 x 365 x 19%).

Assume that 50% of the solar energy generated is exported to the TANGEDCO *grid (and* that the remaining solar energy is self-consumed).

This gives an average daily solar energy export of 2.3 kWh per kW of solar energy capacity, which shall form the basis for a provisional determination of solar energy export during meter defect periods.

Remarks of TANGEDCO:

The average daily solar energy export of 2.3 kWh per kW of solar energy capacity has been rounded off to 2 KWh per KW and proposed in the TANGEDCO's petition as the basis for provisional determination of solar energy export during meter defect periods.

(9.0) Both the stakeholders have made certain other comments outside the scope of this petition for which TANGEDCO has not offered remarks.

5.10. TheCommission may be pleased to pass an appropriate order to adopt the procedures mentioned in Para (9.0) in M.P. No. 13 of 2020 for assessment of billing of both import and export energy in cases where there is no bi-directional meter or bi-directional meter is defective for the LT solar Rooftop services and necessary provision in Clause 11of Chapter 2 in Tamil Nadu Electricity Supply

Code.

6. Findings of the Commission:

6.1 We heard the submissions of learned Counsel appearing for the TANGEDCO (petitioner). The Petitioner has filed this petition for approval to adopt the procedures as furnished by them under Para (3.6) above, for assessment of billing of both import and export of energy in cases where there is no bi-directional meter or bi-directional meter is defective in Solar Net meter and net feed-in LT Solar Rooftop services under Tamil Nadu Solar Policy 2012 and Tamil Nadu Solar Energy Policy 2019 and subsequent policies if any in future and seek necessary provision in Clause 11 of Chapter 2 in Tamil Nadu Electricity Supply Code.

6.2 TANGEDCO has stated that Tamil Nadu Government came out with Tamil Nadu Solar Energy Policy 2019 to promote Solar Energy generation in Tamil Nadu to achieve the installed capacity of Solar energy of 9000 MW by 2023 and 40% of it earmarked for consumer category. And it is also submitted that, in this scenario of necessity in implementation of Solar Rooftop systems, large number of solar developers and consumers are approaching TANGEDCO for installation of Solar Rooftop plants. TANGEDCO stated it is needed for a procedure for assessment of import and export of energy for billing purpose in LT Solar Rooftop Services during the defective period of bi-directional meters.

6.3 As the petitioner sought a billing procedure in the case of non-availability of healthy bi-directional meter in Solar Rooftop services, the Commission directed, in

the hearing held on 09-06-2020, the petitioner to webhost the petition seeking comments from the stakeholders since it amounts to amending the provisions. TANGEDCO hosted the petition in their website on 11.06.2020 seeking comments on or before 25.06.2020. The petitioner in its submissions stated that the comments received from two stakeholders viz., (1) Thiru.R.ChinthathiraiArockiamSelvin, Thoothukudi, and (2) Thiru.MartinScherfler, Auroville, and their comments were replied accordingly for relevant points, as below;

6.3.1 Thiru.R.ChinthathiraiArockiamSelvin has suggested (i) to take into account that the CUF shall decrease from 21% to 16% gradually in a span of five years. On this we agree with the reply of TANGEDCO that the CUF of 19% is considered by TANGEDCO for provisional assessment of export of solar energy based on Comprehensive Tariff order on Solar energy by the TNERC;

(ii) Calculation of rainfall, sunny hours per year have to be determined by every Distribution Licensee. TANGEDCO replied that Tamil Nadu has reasonably high solar insolation of 4.5 to 6 KW / Sq.m. with around 300 clear sunny days in a year; and though the solar energy generation cannot be predicted and it differseveryday, the average generation in every month will be almost similar; and hence generation of electricity during different period will not vary much.

6.3.2 Thiru.MartinScherfler has stated (i) with reference to the Tamil Nadu Solar Energy Policy 2019 that all new Service connection meters in Tamil Nadu shall be configured for bidirectional energy recording and display; TANGEDCO replied that it procure meters with bidirectional facilities for implementation of meter in all services for the LT category consumers.

(ii) for computation of imported energy during the period in question, suggested that the average active energy import during the preceding four months minus 50% of estimated solar energy generation; TANGEDCO replied that this assessment of import of energy in the solar rooftop services for the defective period is the provisional assessment and final assessment will be made after fixing the correct bidirectional meter.

6.4 The TNERC has already prescribed a procedure for billing where there is no meter or meter is defective in the case of normal meter i.e., meter read only import energy,under Regulations 11 of its Supply Code Regulations, 2004. In this petition, TANGEDCO has furnished a draft procedure for billing of LT Solar Rooftop services when there is no meter or no healthy meter in such service connections. And the petitioner has also replied to the Objector's questions as read in para (5) above.

6.5 The Petitioner has contended that Tamil Nadu has reasonably high solar insolation of 4.5 to 6 KW/Sq.m. with around 300 clear sunny days in a year. Though the solar energy generation cannot be predicted and it differs every day, the average generation in every month will be almost similar. Hence, generation of electricity during different period will not vary much.

6.6 In view of the above submissions of the TANGEDCO (petitioner) and the comments of the Stakeholders, Commission directs the TANGEDCO to follow the procedure given below where there is no bi-directional meter or bi-directional meter is defective in LT Solar Rooftop services.

Assessment of billing in cases where there is no bi-directional meter or bi-directional meter is defective in LT Solar Rooftop services

(A) For import of energy

(i) Where supply to the prosumer is given without a bi-directional meter or where the bi-directional meter fixed is found defective or to have ceased to function and no theft of energy or violation is suspected, the quantum of electricity imported during the period when the bi-directional meter was not installed or the bi-directional meter installed was defective, shall be assessed as mentioned hereunder :

(a) The quantum of electricity imported during the period in question shall be determined by taking the average of the electricity imported during the preceding four months provided that the conditions in regard to import of electricity during the said four months were not different from those which prevailed during the period in question.

(b) Where the bi-directional meter becomes defective immediately after the bi-directional meter is effected, the quantum of electricity imported during the period in question is to be determined by taking the average of the electricity imported during the succeeding four months period after installation of a healthy bi-directional meter, provided the conditions in regard to the import of electricity are not different. The prosumer shall be charged monthly minimum charges provisionally for the meter defective period and after assessment the actual charges will be recovered after adjusting

the amount collected provisionally.

(c) If the conditions in regard to import of electricity during the periods as mentioned above were different, assessment shall be made on the basis of any consecutive four months period during the preceding twelve months when the conditions working were similar to those in the period covered by the billing.

(d) Where it is not possible to select a set of four months, the quantum of electricity imported will be assessed by the Engineer in charge of the distribution.

(ii) In case the prosumer does not agree with the assessment made by the Engineer or the higher level officer as the case may be, the matter may be referred to the next higher-level officer of the Licensee. In case the prosumer is still not satisfied, the solar prosumer is at liberty to approach the respective Consumer Grievance RedressalForum of the Licensee.

(B) For export of energy

(i) For services wherein bi-directional meter becomes defective after previous assessments for a minimum period of 4 months:

The quantum of export energy in units during the period in question shall be determined by taking the average of the exported energy during the preceding four months period.

(ii) For services wherein the bi-directional meter becomes defective immediately after the bi-directional meter is effected:

The quantum of energy exported to grid during the period in question is to be determined by taking the average of the export energy during the

succeeding four months periods after installation of a healthy bi-directional meter. Till such time, the prosumershall be charged provisionally for the defective period by assessing the quantum of export energy as follows:

Let the installed solar plant capacity : 1 KW

The Capacity Utilisation Factor (CUF) of Solar plant : 19%

Maximum energy that would be generated by a 1 KW solar plant in a day : 1 x [19/100] x 24 = 4.56 Units/day
Or say 4 Units/day

Taking generation as 4 Units/day/KW and assuming that 50% of the generation is consumed by the prosumer in a day, the export energy may be taken as 2 Units / day / KW.

The total energy exported during the periodwhere no bi-directional meter or bi-directional meter is defective = *2 x (defective period in days) x (Installed capacity of the solar power plant in KW) Units.*

On fixing the healthy bi-directional meter and assessment observed for four months, the provisional assessment made already may be reworked and demand notice may be raised after adjusting the amount collected provisionally.

(iii) In case the solar net bi-directional meter service prosumerdoes not agree with the assessment made by the Engineer or the higher level officer as the case may be, the matter may be referred to the next higher-level officer of the Licensee. In case the prosumer is still not satisfied, the prosumer is at liberty to approach the respective Consumer Grievance Redressal Forum of the Licensee.

6.7 Further, Commission opine that though the billing procedure is specified above for cases where there is no bi-directional meter or bi-directional meter is defective, the Licensee shall replace it with a healthy meter within 30 days as stipulated under Regulation 11 of Tamil Nadu Electricity Distribution Standard of Performance Regulations, 2004. Accordingly, necessary amendment to the Tamil Nadu Supply Code, 2004 will be issued by the Commission.

With the above orders, this petition is finally disposed of.

(Sd.....)	(Sd.....)	(Sd.....)
(K.Venkatasamy)	**(Dr.T.PrabhakaraRao)**	**(M.Chandrasekar)**
Member (Legal)	**Member**	**Chairman**

/True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission