

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

PRESENT:

Thiru S.Akshayakumar

.... **Chairman**

Dr.T.Prabhakara Rao

.... **Member**

M.P.No.9 of 2017

Tamil Nadu Generation and Distribution Corporation Ltd.
Represented by the Chief Engineer / Non-Conventional
Energy Sources

144, Anna Salai
Chennai – 600 002.

... Petitioner
(Thiru Yashodh Varadhan
Senior Advocate for Thiru M.Gopinathan
Standing Counsel for TANGEDCO)

NIL

Vs.

...Respondent

Date of hearing : 02-06-2017, 08.6.2018,07.03.2019

Date of Order : 25-03-2019

The above Petition came up for final hearing on 07.03.2019. The Commission upon hearing the arguments of Thiru M.Gopinathan, Standing Counsel and after perusing the documents, written submissions filed, passes the following order:-

ORDER

1) Prayer of the Petitioner in M.P.No.9 of 2017:-

The above petition has been filed by the Petitioner, Tamil Nadu Generation and Distribution Corporation (TANGEDCO) to consider the revisions in the existing

net metering policy under revised accounting methodology as mentioned in para 18 of the petition and pass such further orders as the Commission deems fit and proper.

2) Facts of the case:

2.1 Tamil Nadu State Solar Policy was announced by the Hon'ble Chief Minister of Tamil Nadu on 19.10.2012 vide G.O. No.11 dt.19.10.2012. Clause 14 of the said Solar policy envisaged establishment of 3000 MW of Solar PV power plants in the State in a phased manner as detailed below:

	Utility scale(MW) (a)	Solar Roof Tops (MW) (b)	REC(MW) (c)	Total (MW) (a)+(b)+(c)
2013	750	100	150	1000
2014	550	125	325	1000
2015	200	125	675	1000
Total	1500	350	1150	3000

2.2. The policy *interalia* encouraged domestic consumers to install solar roof top plants offering generation based incentives and promoted rooftop installations in Government buildings. Net metering was to be permitted at multiple voltage levels to promote rooftop generation in commercial establishments and individual homes. The policy also fixed solar purchase obligation to HT consumers of all categories from I to V, and to LT commercial consumers. Government of Tamil Nadu issued a policy direction under section 108 of the Electricity Act, 2003 for necessary action on the said policy.

2.3. To give effect to the above policy of the State Government, Commission issued a suo motu order No.1 of 2013 on "Issues relating to Tamil Nadu Solar Energy Policy 2012' on 7.3.2013. Subsequently, Commission issued separate order

on 'LT connectivity and Net metering' on 13.11.2013 vide order No.3 of 2013 after obtaining procedure from TANGEDCO and after obtaining comments from stakeholders as had been mentioned in the Order No.1 of 2013 referred above.

2.4. In the order on net metering, Commission specified the eligible consumers for net metering as prescribed in the Tamil Nadu Solar Energy Policy, 2012, detailing connectivity criteria, metering, commercial arrangements, operation and maintenance, restrictions on grid penetration etc. The petitioner has presently sought modifications in the arrangements in commercial settlement, change in settlement period, to prescribe a limit in the installation capacity of rooftop by each consumer, make it mandatory for installation of solar generation meter by all consumers of net metering and fixation of a control period.

3. Contentions of the petitioner:-

3.1. Tamil Nadu is endowed with about 300 clear sunny days in a year with high solar radiation offering good potential for solar power based generation in the State. Various policy initiatives such as feed in tariff, gross metering, net metering etc. in solar roof tops have played significant role in solar rooftop programmes across the country to promote solar generation. Government of India(GoI) has enacted several policies, namely Electricity Act,2003, National Electricity Policy 2005, Tariff Policy 2006, Integrated Energy Policy 2006, National Action Plan on Climate Change(NAPCC) 2008, Generation Based Incentives(GBI) for Solar 2009, Jawaharlal Nehru National Solar Mission (JNNSM) 2010, Renewable Energy Certificates, Clean Energy Cess to promote renewable power and in specific solar power. Capital subsidy is given for rooftop solar in residential, educational institutions etc. with fiscal

incentives. Gol has envisaged an ambitious target of achieving renewable energy generation of 175 GW by 2022 of which solar comprises 100 GW. The present solar installed capacity in the country is 9235 MW. Solar installation of top five states is as follows:

Tamil Nadu	1618 MW
Rajasthan	1317 MW
Gujarat	1160 MW
Telangana	1073 MW
Andhra	980 MW

3.2 Tamil Nadu(TN) is the State with the highest solar installed capacity. The addition during the year 2015-16 has taken TN to the top. The TN solar policy envisaged generation of solar power of 3000 MW by 2015.

3.3 Details of solar installations as on the date of petition:

Scheme	Capacity in MW
Grid connected	
Central Government	26
Preferential tariff(sale to Board)	1409
Preferential tariff(Wheeling)	47
REC (under APPC rate)	120
Rooftop	
LT consumers(net metering)	16
Total	1618

3.4 Tamil Nadu Solar Policy mandates Solar Purchase Obligation (SPO) of 6% (starting from 3% upto Dec 2013 and then 6%) to HT consumers and LT commercial. Certain consumers filed petitions before the Hon'ble APTEL, High Court of Madras against implementation of the SPO. APTEL vide order dated 21.01.2014 in Appeal Nos.92 and 104 of 2013 set aside the Order No.1 of 2013 dated 7.3.2013 issued by the Commission which provided for the solar purchase obligation on the consumers as per State's Solar policy. TANGEDCO filed a petition before the Supreme Court of India against APTEL's order and the final verdict in the case is yet to come. The

cases in the High Court of Madras vide Writ petitions 12390 & 29545 of 2013 against implementations of S.P.O. have not come up for hearing.

3.5. Under the preferential tariff scheme, 86 developers executed PPAs for 1484 MW of which 78 power plants with combined capacity of 1409 MW have been commissioned. In spite of having taken strenuous efforts for promotion of utility scale solar power in the State, the desired solar purchase obligation has not been met.

3.6. There is huge potential for solar rooftop systems in Tamil Nadu particularly in small towns/rural areas. Some of the key benefits of rooftop are that large number of solar roof top installations pave way for Distributed power generation, roof top installations at the tail end enhances grid stability, reduces T&D losses as power is consumed at the point of generation, increases local employment opportunities, saves land requirement and costs, projects are environmental friendly and saves the environment. Also high investments in coal based generation can be avoided. Solar rooftop reduces the need for additional transmission infrastructure.

3.7. Salient features of order No.3 of 2013 dated 13.11.2013 issued by the Commission based on Solar policy, 2012 ;

3.7.1 Net metering extended to solar power systems connected to the grid to feed excess power back to the grid with “power credits” accruing to the energy producer. Electricity generated and injected to the licensee’s grid capped commercially at 90% of electricity consumption. Export of energy in excess of consumption in a billing cycle shall be carried forward to next billing cycle. Settlement period is from August

to July and there shall be no carry forward of energy to the next settlement period. Connectivity is permitted upto 30% of Distribution Transformer capacity on first come first served basis.

3.7.2 Net metering is allowed at multiple voltage levels to promote rooftop generation:

Solar PV system size	Grid connected
< 10 kWp	240 V
10 kWp to < 15 kWp	240 V/415 V
15 kWp to <50 kWp	415 V
50 kWp to <100 kWp	415 V
>100 kWp	11 kV

3.7.3 Categories of eligible L T consumers:

LT I A	Domestic
LT I C	Bulk supply, Railway colonies, Defence colonies
LT II A	Public lighting, water supply
LTII B(1)	Govt./Aided Education institutions, Govt. Hospitals
LT V	Commercial

The eligible consumers who propose to establish roof top solar PV plants are eligible to obtain subsidy - State subsidy of Rs.20,000/- per kW and a Central Government subsidy of Rs.22,500/- per kW.

3.8 MNRE has fixed an ambitious target of 3500 MW for rooftop solar systems by 2022 for the State. With the existing policy, TANGEDCO has been able to promote only 16 MW of Rooftop Solar power.

3.9. The key benefits and advantages of rooftop solar systems are:

- Large number of solar rooftop installations pave way for Distributed Power Generation.
- Photovoltaic rooftop installations at the tail-end of the grid can enhance grid stability and reduce T&D losses as power is consumed at the point of generation.
- Potential for rooftop systems in small towns/rural areas offer local employment.
- Solar rooftop systems saves the land requirement, reduces need for additional transmission infrastructure. They are environment friendly and help in reducing GHG emissions. One GWhr of solar generation eliminates 820 metric tons of CO₂ emissions.
- Higher investments in coal based generation can be avoided. The solar power is a long term reliable power source.

3.10. The issues faced by the utility due to existing net metering mechanism are:-

(i) The solar units now being adjusted are generated at low costs and adjusted at higher tariffs than the market sale rate of solar power. At the time of implementation of the solar scheme, the capital cost was high which has drastically reduced over the years.

(ii) The net units fall within the lower slab after adjustment of generation with consumption.

(iii) The scheme of allotting 100 units free for domestic category did not exist at the time of introduction of net metering.

(iv) Many consumers avail the Government of India's subsidy and also avail the net metering benefits.

(v) TANGEDCO is already undergoing a financial crunch owing to mammoth losses in wheeling/banking of wind energy.

3.11. The Petitioner is keen to promote Solar energy and would like to address the issues at this stage.

3.12. Various reasons to change the method of energy accounting from the energy credit system to the system of monetary credit are as follows:

(i) The consumers are given the privilege of exporting only surplus power to TANGEDCO, after meeting their self-consumption.

(ii) The surplus Solar Power injected by the consumers is infirm power and involves crucial grid management.

(iii) Higher operation and maintenance cost involved in running base load plants of TANGEDCO in day to day operation leading to increase in cost of generation.

(iv) No land cost and evacuation cost involved as in the case of MW scale projects that contributes to 10% to 20% of the project cost.

(v) The consumer exports the surplus energy to the grid without incurring any cost, for which the entire power evacuation infra structure, operation and maintenance of the HT/LT network is to be borne by TANGEDCO.

(vi) TANGEDCO is forced to procure the entire surplus solar energy injected by the Net metered consumers during non-peak hours and during times of low cost power available in the grid in view of promoting Solar Energy / Roof Top Systems.

(vii) TANGEDCO has to supply electricity to all the net metered consumers during the non-sunny and night hours including peak hours by purchasing high cost power from other sources in times of need.

(viii) The TANGEDCO extended facilitation to install solar panel to utilize the energy against their consumption. Hence, it is not obligatory that the excess energy injected into the grid to be banked and paid at higher rate with profit.

(ix) The Solar PV module cost has now reduced drastically.

(x) The consumers avail Govt. of Tamil Nadu subsidy through TEDA.

3.13 The Petitioner has prayed the following revisions in the existing policy:-

(1) Existing 5 categories of eligible LT consumers shall be covered under the proposed mechanism.

(2) The bi-directional meter (net meter) shall be provided as per the procedure in vogue to measure the total grid consumption (import) from the grid and the excess solar generation fed into the grid after self-consumption (export).

(3) Under the proposed mechanism, the value of grid consumption (import) shall be calculated at the appropriate tariff. The value of excess solar generation fed into the grid after self-consumption (export) as recorded in the net meter shall be calculated by TANGEDCO at the rate of 50% of the least of the solar tenders' rate during the latest previous financial year or 50% of the solar Preferential Tariff rate issued by TNERC corresponding to the financial year, whichever is less. Net billing which will be in value shall be the monetary value adjustment of import and export units in the respective billing cycle. Amount, if any, to be paid by TANGEDCO shall be adjusted against the import consumption bill amount in the respective billing cycle. If net bill is payable by consumer, then it shall be paid by him within the due date. However, in case when the surplus money value of solar units fed into the grid (export) exceeds total money value of grid consumption (import), the monetary value of surplus solar energy shall be carried over to the next billing cycle for adjustment

against subsequent bills. No interest shall be claimed by the consumer for the amount carried over to the next billing cycle till the end of the settlement period and paid, if any, at the end of the financial year. Settlement period of 12 months will be from April to March of the financial year.

(4) The maximum solar roof top capacity shall be restricted to 50 % of the Contracted Demand. Further if the solar capacity is added beyond 50% of the contracted demand of LT consumers, the quantum of export as recorded in the net meter shall be considered for net billing only upto 50% of the contracted demand of the LT consumers.

(5) The revisions in the existing net metering scheme proposed by TANGEDCO shall also be applicable to the existing LT net metering consumers.

(6) The control period and settlement period shall be one year (Financial year).

(7) It is proposed to install meters to all net metering consumers, at the solar generation end to measure the actual generation in addition to the net meter (bi-directional meter) and also to levy appropriate taxes, if any.

(8) While seeking a cap on maximum installed capacity of solar rooftop plant, the proposal also seeks to do away with clause 4.1 of the Order No.3 that fixes a ceiling of energy injected into the licensee's grid at 90% of electricity consumption at the end of settlement period beyond which energy generated shall lapse.

4) The Commission heard the case on 2.6.2017 and directed the petitioner to host the petition in website and obtain comments/suggestions from stakeholders. Accordingly, the petitioner hosted this petition in their website for obtaining comments from stakeholders.

5) The Petitioner filed an additional affidavit on 27-09-2017 consolidating the comments from stakeholders with their remarks.

5.1. The following is the summary of the contents:

Comments from stakeholders	Response of Petitioner
Retroactive amendment to the policy/order must be rejected.	Commission has been approached only for a revision in accounting methodology in the existing policy and there is no proposal of new policy.
Scope of net metering may be extended to all metered categories.	Net metering is being facilitated to the eligible consumers as per the Commission's order on net metering.
Payback period will increase if proposal of TANGEDCO is implemented.	Revised accounting methodology has been proposed considering the financial loss of TANGEDCO.
Petition does not seek revision in accounting methodology but proposes an entirely new mechanism for distributed solar energy.	The proposal is to revise the accounting methodology for the exported units in terms of money value instead of unit to unit adjustment.
Shortfall in meeting generation targets in net metering was due to non compliance of the order No.3 of 2013 on net metering by the petitioner.	LT Bi directional meters have been provided to consumers under the scheme for net metering.
The petitioner has not accounted for many of the benefits under distributed solar generation. In the utility scale systems, grid outage results in full outage of full generation capacity while there is no load reduction whereas in small scale systems, grid outage causes outage in generation and simultaneous reduction of load. Utility scale requires large scale power evacuation systems whereas distributed generation makes use of the existing infrastructure.	Stands committed to promote both utility scale and rooftop solar PV plants. Distributed generation has been encouraged to minimize the line losses.
The idea behind net metering by granting incentives for rooftop solar was to make the consumers contribute to green energy. Reduction of capital cost is not the concern of the petitioner. Similar is the case of subsidy that is granted by the Central/State Governments since it is not	The petition for revised accounting methodology has been filed considering drastic reduction in the cost of solar panels and solar tariffs in India. TANGEDCO is committed to the welfare of the consumers and appreciates consumers who contribute to green energy.

<p>TANGEDCO who pays the subsidy. It is the consumers who have taken a risk in investing in solar rooftop when module prices came down shortly after investment. It is the levelised cost of energy that has to be considered taking into account grid availability.</p>	
<p>When solar net metering is proposed to be replaced with a feed in tariff, wind energy wheeling should also be replaced with feed in tariff.</p>	<p>Like in the case of wind energy, wheeling of energy from utility scale solar generators are permitted through open access.</p>
<p>The issue of adjustment at slab rates should have been raised by the petitioner when the Solar Policy was formulated. What was then seen as an incentive is now being seen as an issue. The revised accounting system could be adopted to new solar PV systems.</p>	<p>The concept of unit to unit adjustment was in principle accepted based on solar tariff rates at the time of framing of the policy. With the change in market scenario and in the context of encouraging solar rooftop, there needs to be a win – win situation.</p>
<p>For the free scheme of electricity for 100 units offered by GoTN, TANGEDCO receives subsidy. This could not be an issue when the distribution licensee is being compensated.</p>	<p>Unit to unit adjustment leads to severe financial implications.</p>
<p>A proposal for revision of policies and regulations needs to be supported by concrete data. This is with reference to the 'huge revenue loss' referred to by the petitioner. TANGEDCO should furnish the solar energy exported to the grid under each category.</p>	<p>Major source of revenue is only from LT/HT consumers.</p>
<p>Exporting of surplus energy to the grid is not a privilege but a right of the consumer under existing laws. The petitioner should elaborate on crucial grid management involved.</p>	<p>This is a privilege allowed to the consumers.</p>
<p>Petitioner gets benefited by the solar generation injection in the distribution system. With the steep use in air conditioning loads, solar generation is expected to coincide with the peak.</p>	<p>Solar power is available during day time. Peak demand is to be met from other sources of power.</p>
<p>Submission of TANGEDCO that they have to supply power during non sunny</p>	<p>Commitment to supply power leads to purchase of power at high cost.</p>

<p>and night hours to the net metering consumers purchasing high cost power is not a justification for a low solar feed in tariff for net metering system with regard to its obligation to supply.</p>	
<p>Proposed payment mechanism amounts to the consumer being the working capital provider. It would be unfair if TANGEDCO gets paid forthwith for energy imported by the consumer but gets 12 months credit for their payment obligations.</p>	<p>In the billing procedure, excess amount if any is adjusted in subsequent bills. The accounting methodology proposed is to credit in monetary terms for power exported.</p>
<p>Settlement period may be reworded as 'period from the first billing cycle of the financial year to the last billing cycle of the financial year'.</p>	<p>As per the present practice, the financial year from April to March is proposed.</p>
<p>Removal of ceiling of 90% on consumption for adjustment is a welcome measure.</p>	<p>Ceiling has been removed to promote solar rooftop plants.</p>
<p>Maximum solar installed capacity was not found in the net metering order. Petitioner in their working instructions capped solar installed capacity at 100% of sanctioned load. Considering the relatively low CUF of consumer scale solar PV of the range of 16% - 18%, even a capacity of 100% will in many cases produce less energy. Therefore existing provision may be retained.</p>	<p>The proposal now made for an installed capacity of 50% of contracted load is to accommodate more number of consumers.</p>
<p>There was no control period in the order No.3 of 2013 on net metering. If Commission accepts the petitioner's proposal for a control period, it may be defined as for every financial year for a 25 year life period and tariffs for each year fixed in advance.</p>	<p>The tariff will be informed in advance after obtaining approval from Commission.</p>
<p>In the existing order on net metering, solar generation meter had to be provided by consumers availing incentives. A solar generation check meter was mandatory for installations of capacity above 20 kW. Provision for gross generation meters may be dropped.</p>	<p>It is proposed to have a record of solar energy generated under net metering concept so as to account for RPO obligation and assess the actual demand to be met in the absence of solar generation.</p>

Proposal of petitioner is to eliminate HT services from net metering. No state in the country has denied net metering in HT services. When open access is allowed for HT services under the Electricity Act, 2003 and TNERC's Intra State Open Access Regulations, 2005 denying net meter in HT services has no meaning.	Stands committed to promote Solar Policy. Open access is allowed for HT consumers for adjustment of energy generated on slot to slot basis. The power generated during normal hours is not permitted against consumption in peak hours.
Existing consumers under net metering should be allowed to be operated under Order No. 3 of 2013 as investments have been made based on this order. TANGEDCO's prayer to bring in existing consumers in the revised method proposed is against the principles of promissory estoppels.	Proposed for existing consumers too in order to have uniform billing.
The proposed method of TANGEDCO is in effect a conversion of net metering to gross metering. The proposed method will only discourage consumers from investing in net metering.	Not requested for gross metering. Facts elaborated in the petition
Domestic consumers are subsidized consumers and therefore allowing net metering will only reduce the losses of the petitioner.	Net metering is extended to all domestic consumers.
MNRE has proposed performance based incentive scheme providing support of Rs.500 crores to DISCOMS who support capacity of 1350 MWp by 2019-2020.	Facts have been highlighted in the petition

5.2. Other comments:-

- Rate per unit at 50% of least of solar tender rate or 50% of solar preferential tariff does not compensate for the cost of investment.
- TANGEDCO has not given any reason for 50% factor in tariff chosen. It is assumed that it might be in consideration of the incentives the roof top solar may get from the Central/State governments.
- Average power purchase cost of TANGEDCO is Rs.3.80 per unit. Cost to serve is Rs.5.77 per unit and average rate of realisation is Rs.5.74 per unit. In the case of rooftop excess generation, it is consumed at the distribution level.

TANGEDCO saves on line losses which is only less than 5% compared to the existing 20% loss in the system.

- Assuming that MNRE target of 3500 MW is achieved, the energy export by net metering consumers would be 0.38%. Grid management is the responsibility of TANGEDCO. With 3500 MW capacity, solar generation will be 3.37% of total electrical generation in a year.
- The issue of taxes is not in the domain of TANGEDCO but that of the State Government.
- In the present system, TANGEDCO gives 1 kWhr energy credit for every kWhr exported. An alternative to the net feed in tariff would be to introduce an energy export credit factor depending on the tariffs of the categories.
- Govt. of Tamil Nadu issued the TN Solar Policy 2012 vide G.O. (Ms) No.121/Energy (C2) dt.19.10.2012. GoTN issued a policy direction to the Commission under section 108 of the Electricity Act, 2003 vide letter no.12009/C2/2012-1 dt.6.11.2012. In as much as the policy has been issued in the interest of the public, the Commission shall abide by the policy issued by GoTN.
- TANGEDCO should approach the State Government for changing the accounting methodology. TANGEDCO should have sought a review of the order within the time prescribed in the Commission's Conduct of Business Regulations. The petition should have been in the form of a Tariff petition and not a miscellaneous petition.

On the above issues, TANGEDCO has referred to the contents in the petition filed seeking approval for the revised accounting methodology.

5.3. Views of the petitioner as summarized by the petitioner:-

5.3.1. The excess energy generated that got lapsed under Order No.3 of 2013 will now be purchased at a unit rate. Adjustment of units generated by way of monetary credit is also granted to the consumers in the proposed accounting methodology.

5.3.2. Banking of wind energy has caused losses and TANGEDCO is taking measures to correct the same by filing petition in the respective forum. Out of the

total installed wind capacity of 7864 MW, only 30% are selling wind energy to the TANGEDCO and balance 70% are under wheeling category, either through third party sale or captive use and open access charges such as Transmission Charges, Wheeling Charges, System Operating Charges and Banking Charges are being collected from them which is a form of revenue from the utility scale generators. Likewise Solar Power Generators can also supply solar energy generated from their plants to their consumers by availing Open Access.

5.3.3 In case of unit to unit adjustment as per the existing net metering accounting method TANGEDCO is incurring losses. In the case of roof top consumers, the energy generated during off peak hours is permitted to be adjusted during peak hours whereas in the case of open access consumers, energy adjustment is made on slot to slot basis.

5.3.4 The eligible LT consumers for net meter in TANGEDCO as on date are 2 Crores 45 Lakhs. Net metering to the extent of the target of 3500 MW when allowed will cause loss of high end consumers who pay tariffs at highest slabs. It is mostly the affluent consumers who install solar rooftops. Even assuming that 70% is for self consumption with a base of 2 Crores 45 Lakhs eligible LT consumers, TANGEDCO would lose significantly on revenue when the high end consumers start making payments at low slab rates and further TANGEDCO would lose on fixed charges, cross subsidy charges and would have to incur expenses of the difference in costs of power backed down during off peak hours.

6.0 Deliberations before State Advisory Committee

6.1 The matter was taken up before the State Advisory Committee(SAC) meeting held on 21.3.2018. Chairman and managing Director/TEDA was of the view that the petition of TANGEDCO seeking approval for a change in system of credit from power credit to monetary credit system through a tariff fixed would require a change in Government policy and therefore the petition needs to be discussed on admissibility and maintainability. Some of the members were of the view that owing to investments already made, there cannot be a change in the accounting mechanism for the existing consumers under the net metering scheme. The Chairman and Managing Director/TANGEDCO pointed out that only a section of the society received undue benefits by adjustment of energy credits and by netting on value of power, all sections of consumers would derive equal benefits. Commission directed to implead the Energy Secretary, Government of Tamil Nadu in the case in the hearing held on 8.6.2018.

7.0 Hearing held on 07.03.2019

7.1 The petitioner submitted that based on the direction of the Hon'ble TNERC, the Principal Secretary to Government, Energy Department was requested vide letter dt.03.07.2018 to file an implead petition before the Hon'ble Commission for M.P No.9 of 2017. Now the Government of Tamil Nadu has issued the Solar Policy 2019 on 4.2.2019 wherein provision of net feed-in of solar energy has been provided for all LT consumer scale power plants and hence the need of a separate implead petition to be filed by the Energy Department, Government of Tamil Nadu does not arise.

7.2 Further it was stated that TANGEDCO is committed to promote solar power in Tamil Nadu and in order to implement net feed in to all LT category of consumers,

requested that the Commission may pass appropriate orders consequent to announcement of Tamil Nadu Policy 2019.

8.0 Revised Solar Policy issued by Government of Tamil Nadu

8.1 The Government of Tamil Nadu has issued a revised Solar policy, the Tamil Nadu Solar Policy 2019, the draft of which was floated in the website of TEDA for comments from interested stakeholders. The Solar Policy 2019 issued is with effect from 4.2.2019. This Solar Policy of 2019 specifies two categories to augment solar power generation in the State. One is the Utility gross feed in category and the other is the Consumer net feed in category. The Policy has widened the spectrum of eligible consumers in consumer net feed in category with a change in the commercial settlement mechanism.

9. Findings of the Commission:

9.1 The prayer in M.P No.9 of 2017 filed by TANGEDCO is for approval from the Commission for modification of the commercial arrangement prescribed in the Order No.3 of 2013 dt.13.11.2013 and to make it applicable across to the existing LT consumers under the net metering scheme of the said Order No.3 and to all new consumers. Other requests made are to specify a ceiling on the capacity of rooftop solar power plant to be installed by the eligible consumer under the net metering scheme, installation of a solar generation meter by all net metering consumers, levy of appropriate taxes, and fixation of a control period.

9.2 This petition was filed by TANGEDCO when the Tamil Nadu Solar Policy 2012 was in vogue. The Government of Tamil Nadu has since issued a new Tamil Nadu Solar Policy 2019 with effect from 4.2.2019. Commission notes that there is a parallel between the revised commercial accounting mechanism for which approval

was sought by TANGEDCO and the Solar net feed in - Consumer category in clause 8.1.2 of Solar Policy 2019. In the additional affidavit, the petitioner compared some of the major points in the existing Solar Energy Policy 2012 and Solar Policy 2019 and prayed for issue of appropriate orders.

9.3 On the directions passed by the Commission in the hearing on 02.6.2017, TANGEDCO hosted this petition, M.P No.9 of 2017 in their website and submitted comments from stakeholders with remarks. Majority of the comments were from existing net metering consumers opposing the change in methodology of accounting. Questions were raised on the proposal of the petitioner going against the Solar Policy 2012 issued with directions to the Commission under section 108 to implement the Policy. The matter has been discussed in the State Advisory Committee held on 21.3.2018. Different views were put forth by the members of the Committee. While questions of admissibility and maintainability was raised in the SAC, Chairman and Managing Director/TANGEDCO discussed the need for change in accounting system that would derive equal benefits to all consumers unlike the scheme of net metering in Order No.3 of 2013 issued under Solar Policy 2012 which provided undue benefits to a section of consumers.

9.4 Though the Policy of 2019 is in tune with the proposal of TANGEDCO in this petition, and all due procedures of inviting comments from stakeholders for this petition as well as for the Policy 2019 have been followed, Commission decides to dispose this petition on merits, based on details in the petition, reply affidavits and the hearing.

9.5 Before going into the details of the case, Commission would like to make a brief of the concept of net metering, net feed in tariff in the two Solar policies of 2012 and

2019 and features of Commission's own order on net metering issued in 2013.

9.5.1 The vision of Tamil Nadu Solar Policy 2012 was to establish 3000 MW of solar power by 2015. The objectives inter alia were to achieve energy security, reduce carbon emissions, achieve grid parity by 2015, to encourage indigenous solar manufacturing facility. The target for rooftop capacity as per the Policy is 350 MW by 2015. The target set by Ministry of New and Renewable Energy for rooftop solar power plants by 2022 is 3500 MW.

9.5.2. Net metering in Tamil Nadu Solar Policy 2012 (Solar Policy 2012) was a promotional initiative to encourage solar rooftop penetration in individual homes and commercial establishments.

Clause 22.1 of the Solar Policy 2012 on net metering states as follows:

“Net metering will be allowed (at multiple voltage levels) to promote rooftop penetration.

Net metering facility will be extended to Solar power systems installed in commercial establishments and individual homes connected to the electrical grid to feed excess power back to the grid with 'power credits' accruing to the Photovoltaic energy producer.”

Projects to evacuate power at suitable voltages as suggested below:

Solar PV system size	Grid connected
< 10 kWp	240 V
10 kWp to < 15 kWp	240 V/415 V
15 kWp to <50 kWp	415 V
50 kWp to <100 kWp	415 V
>100kWp	11 kV

9.5.3 In a net metering system, the focus is on self consumption of electricity generated by the consumer. The solar power generated by the solar system is used by the captive loads within the premises of the owner and any excess is fed into the grid through the net meter which is a bi-directional meter capable of registering both import and export of electricity. The excess generation in a billing cycle is either sold to or credited with the utility. As per Order No.3 of 2013 on net metering, generation to the extent of 90% of consumption within the settlement period gets adjusted. The excess energy at the time of settlement after adjustment gets lapsed.

9.5.4 The Tamil Nadu Solar Policy 2019 (Solar Policy 2019) has introduced a target of 9000 MW by 2023 of which 40% is earmarked for consumer category solar energy systems. The grid feed in mechanism prescribed by the Policy - Solar energy net feed-in (consumer category) in clause 8.1.2 of the Policy is as follows:

- In this category, solar energy is used for self consumption with surplus if any being exported to the grid.
- A bidirectional service connection energy meter will be installed by the Distribution licensee to record the imported and exported energy.
- The imported energy will be debited at the applicable consumer tariff while the exported energy is credited on the basis of a consumer solar energy tariff to be determined by TNERC. Consumer will pay the difference between the debit and credit amount.
- If the cumulative credit amount exceeds the debit amount during any billing cycle, the net credit is carried over to the next billing cycle. At the end of a 12 month settlement period as may be determined by TNERC, the consumer will receive payment of net credit any available.
- For consumer category solar PV systems, the system capacity shall not exceed 100% of sanctioned load of the service connection

- Maximum cumulative solar PV capacity at Distribution Transformer level to be reviewed and determined by TNERC from time to time to enable optimal solar energy penetration

9.5.5 The order on Net metering issued vide Order No.3 of 2013 dt.13.11.2013 that was based on the Tamil Nadu Solar Energy Policy 2012 has the following significant features:

i) Categories of consumers under solar net metering –

High Tension category - Consumers under HT TF II A, HT TF III

Low Tension category – Consumers under LT TF IA,LT TF IC,LT TF IIA, LT TF II B(1),LT TF V.

Existing and new solar rooftop/solar systems that comply with the order are eligible for net metering.

ii) Metering:

Two meters to be installed by the solar power generator - one to measure solar power generation and the other for import/export measurement. Solar generation meter is optional. The second bidirectional meter will replace the existing consumer meter. The meters shall adhere to the standards specified by the CEAs(installation and Operation of meters) regulations 2006 as amended from time to time. Solar check meter mandatory for installations of capacity above 20 kW.

iii) Commercial arrangement:

Electricity generated from a solar rooftop/solar system and injected into the licensee's grid shall be capped at 90% of the electrical consumption by the eligible consumer at the end of settlement period and the excess energy generated beyond the 90% cap shall be treated as lapsed.

Export of energy in excess of the consumption of the consumer in a billing cycle

shall be carried forward to the next billing cycle. The settlement period for final settlement of net metered energy shall be 12 months from August to July. There shall be no carry forward of energy allowed to the next settlement period in the following year.

iv) Connectivity:

Capacity range	Connecting voltage
Upto 4 kW	240 V-single phase or 415 V three phase at the option of the consumer
Above 4 KW and upto 112 kW	415 V three phase
Above 112 kW	At HT/EHT level

Technical standards of connectivity shall be as specified in the CEA (Technical standards for connectivity of the Distributed Generation Resources) Regulations 2013.

v) Restrictions on grid penetration -

Connectivity to rooftop solar/solar systems at the local distribution level is restricted to 30% of the distribution transformer capacity on the basis of first come first served. Maximum cumulative capacity in the Distribution licensee area is limited to the extent prescribed in the Tamil Nadu Solar Energy Policy, 2012 and by the Renewable Purchase Obligations (RPO) specified in Commissions regulation.

9.6 Adoption of scheme of net metering of Solar Policy of 2012 facilitated expansion of renewable energy generation in the distribution system. It is a recognized fact that solar tariffs have considerably fallen from 2013 and are reaching grid parity. It is an equally recognized fact that the consumers under the highest retail tariff slab benefitted the most under the net metering scheme. Distributed generation has benefits of reduced line losses with ingestion/injection of power at the load centre and the licensee can save on expenses towards additional transmission

infrastructure. However, the utility does lose its high paying consumers. The Chairman and Managing Director/TANGEDCO in the SAC meeting has rightly pointed out that only a section of the society received undue benefits by adjustment of energy credits and by netting on value of power, all sections of consumers would derive equal benefits.

9.7 Under this backdrop, the petition along with the additional affidavit filed by the petitioner compiling stakeholders comments along with their views is taken up for further scrutiny.

9.7.1 Many of the stakeholders had furnished copies of comments on TANGEDCO's petition and Commission had the benefit of going through the comments. This combined with the consolidated comments of the petitioner in their written submissions have helped the Commission to undertake a thorough analysis of the subject.

9.7.2 Majority of the stakeholders who are the existing net metering consumers have opposed outright the petitioners proposal to implement the revised accounting methodology. Reasons stated are manifold.

9.7.3 On scrutiny of the petition and submissions, Commission finds that the circumstances that lead the petitioner to seek change in the commercial accounting are as follows:

a) Drastic reduction in the capital cost that was witnessed after the implementation of net metering scheme; As a consequence, solar units generated at low cost are adjusted with tariffs higher than the market prices of solar energy.

b) Net of consumption falls within the lower slab of tariff after the adjusted

solar power consumption.

c) The 100 units free scheme for domestic tariff did not exist at the time of introduction of the net metering scheme.

d) Net metering when allowed to a targeted limit of 3500 MW fixed by MNRE will cause loss of high end consumers paying tariffs at the highest slab. With a consumer base of 2.5 crores, even assuming that 70% is for self consumption, TANGEDCO would lose significantly on revenue when the high end consumers start paying tariffs at lower slabs and further lose on fixed charges, cross subsidy charges, the effect of which is to be passed on to the other low end consumers.

9.8 Issues involved in disposal of this petition:

- a) Maintainability
- b) Change in commercial settlement mechanism
- c) Price for settlement of excess generation, rationale
- d) Eligible consumers
- e) Maximum capacity of *rooftop* solar ~~rooftop~~ installation
- f) Control period
- g) Installation of solar generation meters
- h) Levy of appropriate taxes
- i) Other issues
- j) Applicability of the revised commercial mechanism

9.9 Maintainability

9.9.1 The petition's maintainability was contested owing to the proposed settlement mechanism of monetary credit being at variance with the mechanism of power

credit prescribed in the Solar Policy 2012. The Solar Policy of 2019 has since been issued. The settlement mechanism proposed to be adopted by TANGEDCO is in tune with the solar net feed in category in the Policy 2019 and as any order to be issued in this petition will be operative from a future date, it will not affect the existing net metering consumers. This fact will address the grievance of the existing consumers. Yet, Commission wishes to clarify its powers in dealing with matters of policy and interest of consumers.

9.9.2 Observations have been made in various judgments that Policies of Government serve as a guidance and the State Commissions are not bound by such policies. In the judgment delivered on 21.1.2014 in Appeal Nos. 92 of 2013 and 109 of 2013 filed against Order No.1 of 2013 dt.7.3.2013 issued based on Solar Policy 2012 contesting some of the features in the Solar Policy that were implemented in the said order, Hon'ble APTEL in the findings observed as follows and set aside the order:

“The State Commission has simply tried to implement the directions of the State Government by passing the impugned order without considering its own functions and powers under the 2003 Act and its own Renewable Energy Regulations notified under the Act and even without considering the other important issues raised by the objectors.”

The above order of APTEL also dealt with orders of Supreme Court on the matter of policy directions observed in its various orders.

9.9.3 In Appeal No. 200 of 2011 dt.4.10.2012, APTEL observed as follows:

“29. The Hon'ble Supreme Court in APTRANSCO vs Sai Renewable Energy Pvt. Ltd.: (2011)11SCC34 has held that State Commission is not bound by any policy directions issued by the Government under the Act if such directions hamper the statutory functions of the Commission. The relevant extracts of the Hon'ble Supreme Court's judgment delivered on 8.7.2010 is quoted below:

“27 The Reform Act, 1998 was enacted, primarily, with the object of constituting two separate corporations; one for generation and other for transmission and distribution of electrical energy. The essence was restructuring, so as to achieve the balance required to be maintained in regard to competitiveness and efficiency on the one part and the social objective of ensuring a fair deal to the consumer on the other. This Act is also intended for creation of a statutory regulatory authority. Section 3 of the Act requires the State Govt. to establish by notification a Commission to be known as Andhra Pradesh Electricity Regulatory Commission. This was done by notification dated 3rd April, 1999. As already noticed, Section 11 detailed the functions of the Regulatory Commission and primarily it had advisory as well as regulatory functions. In terms of Section 11(1)(c) it was required to issue licenses in accordance with the provisions of the Act and determine the conditions to be included in the license. However, 11(1)(e) gave it much wider power and duty to regulate the purchase, distribution, supply and utilization of electricity, the quality of service, the tariff and charges payable keeping in view both the interest of the consumer as well as the consideration that the supply and distribution cannot be maintained unless the charges for the electricity supplied are adequately levied and duly collected. In terms of Section 11(1)(l) it was to undertake all incidental or ancillary things to the functions assigned to it under the provisions of the Act. **Section 12 of the Act vests the State Govt. with the power to issue policy directions on matters concerning electricity in the State including the overall planning and co- ordination. All policy directions shall be issued by the State Govt. consistent with the objects sought to be achieved by this Act and, accordingly, shall not adversely affect or interfere with the functions and powers of the Regulatory Commission including, but not limited to, determination of the structure of tariffs for supply of electricity to various classes of consumers. The State Govt. is further expected to consult the Regulatory Commission in regard to the proposed legislation or rules concerning any policy direction and shall duly take into account the recommendation by the Regulatory Commission on all such matters. Thus the scheme of these provisions is to grant supremacy to the Regulatory Commission and the State is not expected to take any policy decision or planning which would adversely affect the functioning of the Regulatory Commission or interfere with its functions. This provision also clearly implies that fixation**

of tariff is the function of the Regulatory Commission and the State Govt. has a minimum role in that regard.”

31. Further, this Tribunal in Polyplex Corporation vs Utrakhand Electricity Regulatory Commission in Appeal no. 41,42 and 43 of 2010 has held that

“The State Commission is independent statutory body. Therefore the policy directions issued by the State Government are not binding on the State Commission, as those directions cannot curtail the power of the State Government (sic Commission) in the matter of determination of tariff. The State Government may have given any such policy direction in order to cater to the popular demand made by the public but while determining tariff the State Commission may take those directions or suggestions for consideration but it is for the State Commission which has statutory duty to perform either to accept the suggestion or reject those directions taking note of the various circumstances. It is purely discretionary on the part of the State Commission on acceptability of the directions issued by the State Government in the matter of determination of tariff.”

“35. In view of the judgment of Hon’ble Supreme Court in APTRANSCO case and this Tribunal judgment in Polyplex case, Appeal no. 41,42 and 43 of 2010 and in BRPL vs DERC Appeal no. 106 & 107 of 2008 following inferences can be made:

- i. The commissions are independent statutory authorities and are not bound by any policy or direction which hampers with its statutory functions.*
- ii. The term ‘shall be guided’ is not mandatory and its character would depend upon case to case.”*

9.9.4 Section 11 of the Andhra Pradesh Electricity Reforms Act 1998 referred to in the above order of the Supreme Court are similar to the provisions of section 86 of the Electricity Act 2003. The excerpts of judgment by the Apex Court referred in the judgment of the Hon’ble APTEL and Hon’ble APTEL’s own judgment in the above cases make it clear that while the State Commission has to be guided by the directions of the State Government it is not bound by any policy direction that hampers its statutory functions. Further, the judgment makes it amply clear of the statutory powers of the Regulatory Commission and that includes creating a balance

between the consumers and the distribution licensees.

9.9.4 A view has also been expressed by stakeholders that the present petition should have been filed as a tariff petition instead of a Miscellaneous petition. The present petition delves on the issues related to accounting methodology and certain modifications in the order on net metering and is not for determination of any feed in tariff for the rooftop solar power plants. The order with regard to accounting methodology in net metering by itself is not a tariff order. Therefore, Commission is of the view that the petition has been rightly classified as a miscellaneous petition.

9.10 Change in commercial settlement mechanism

9.10.1 The proposal of the petitioner is to dispense with the system of carry over of excess generation over the consumption as energy credits from one billing cycle to the next billing cycle and switch over to a system of maintaining monetary value of credit. The relevant portion of the petition in para 18(3) is reproduced below:

“Net billing which will be in value shall be the monetary value adjustment of import and export units in the respective billing cycle. Amount, if any, to be paid by TANGEDCO shall be adjusted against the import consumption bill amount in the respective billing cycle. If net bill is payable by consumer, then it shall be paid by him within the due date. However, in case the surplus money value of solar units fed into the grid (export) exceeds total money value of grid consumption (import), the monetary value of surplus solar energy shall be carried over to the next billing cycle for adjustment against subsequent bills. No interest shall be claimed by the consumer for the amount carried over to the next billing cycle till the end of the settlement period and paid, if any, at the end of the financial year. Settlement period of 12 months will be from April to March of the Financial year.”

9.10.2 According to the petitioner, the concept of unit to unit adjustment was in principle accepted by TANGEDCO based on the solar tariff rates at the time of framing Solar Policy 2012. Now, with the change in market scenario and in order to encourage more roof top solar power plants, they need to have a win-win situation. Their major source of revenue is from Low tension, High tension consumers. Unit to unit adjustment and reduction in volume of sales would lead to severe financial loss.

9.10.3 It cannot be denied that generation from Solar rooftop plants connected to Distribution network provides benefits to the utility. Distributed generation in consumer solar rooftops reduces the system distribution losses, provides stability in voltage and reduces investments in transmission infrastructure. The licensee also has the benefit of deemed RPO compliance. Yet, certain drawbacks of the scheme are that the energy credited is adjusted at different rates of tariff specified in the retail tariff order by the eligible consumers of different categories and under the net metering scheme only certain classes of consumers would be unduly enriched. The fact that the system losses are reduced by the rooftop solar power plants would be applicable only at a time when the energy generated through rooftop solar is simultaneously consumed by the consumer. Instead, if the generation is more than the consumption and is exported to the grid, the energy would undergo additional losses.

9.10.4 Commission fully acknowledges the fact that there would be a reduction in the number of subsidizing consumers in the event of a rapid increase in the number of net metering consumers though a target has been fixed. The loss of cross subsidy would unduly put strain on the lower strata of the consumers since their tariffs may have to be increased to levels unaffordable to them.

9.10.5 The tariff design is such that a portion of the fixed cost is covered in the

energy charges. Therefore, by losing volumes of sales, the licensee stands to lose on fixed cost charges apart from cross subsidy. The licensee offers other benefits to the rooftop solar owners by providing an efficient network, and offering the grid as a back up power source in the case of net metering without any collection of charge for the grid support.

9.10.6 Above all, the most important factor to be acknowledged is reduction in cost of solar power. Commission finds force in the contention of the petitioner that during the initiative phase of net metering, solar tariffs were much higher than the retail tariffs of all categories and the situation now is converse with prices of solar energy dropping even below the retail rates of general categories of consumers.

9.10.7 In view of the foregoing analysis, Commission finds merit in the plea of the licensee to change the method of accounting in net metering. The objective of the Solar Policy 2012 was that of grid parity. Rooftop Solar tariffs are moving towards grid parity. The proposal of TANGEDCO is also in tune with the Solar net feed in mechanism described in Clause 8.1.2 of revised Solar Policy 2019. Therefore, Commission accepts the request of the petitioner for change in the commercial settlement mechanism and the settlement period of 12 months incident with the financial year from April to March i.e from the 1st of April of the current year to the 31st of March of the succeeding year.

9.10.8 The methodology of Commercial settlement shall be as follows:

i) The electricity generated by the rooftop solar power plant shall be utilized for self consumption by the consumer. The surplus/excess energy generated that is unutilized and that flows to the grid and recorded in the export register of the meter shall at the end of the billing period be calculated at a tariff fixed by the Commission

and credited to the consumer's account. The energy that is imported from the grid by the consumer shall be calculated at the appropriate retail tariff and the monetary value of imported energy debited from the available credit on account of exported energy in the respective billing period. Any credit available in the account of the consumer after debiting value of imported energy shall be carried over to the next billing period for adjustments against subsequent billing. If the amount to be debited is higher than the credit in a billing period, the consumer shall pay the difference in charges within the specified period in Commission's Regulations. This process shall continue till the end of the settlement period. At the end of the settlement period, credit i.e the monetary value of surplus generation if any shall be settled by the distribution licensee, to the consumer within 15 days from the date of billing by a cheque. The payment shall not carry any interest if settled by the licensee within 15 days from the date of raising of bills at the end of the settlement period. Beyond the period of 15 days, payments will attract interest at the rate notified for interest on security deposit.

ii) A new meter card shall be evolved by the licensee. The meter card shall have provisions to enter data of meter readings, solar generation, units of import/export, monetary value of imported and exported energy, available credit, payment to be made in each billing period to the distribution licensee on account of higher debit value, columns to incorporate initials of assessor, consumer, provision to record details of Solar Power Generator's (SPG's) bank account where the SPGs avail Generation Based Incentives(GBIs) to facilitate direct credit of GBI by Tamil Nadu Energy Development Agency. The meter reading taken by the licensee shall form the basis for commercial settlement.

9.10.9 The bi-directional meter shall be provided as per the procedure in vogue to

measure the import and export of energy which shall be installed at the same location of existing consumer meter.

9.11 Eligible consumers :

9.11.1 The petitioner has proposed to cover all eligible LT consumers included in Order No.3 of 2013 i.e LT TF I A, LT TF I C, LT II A, LT II B(1),LT TF V, in the revised system of commercial settlement and is silent on applicability to HT consumers. Commission notes that the Solar net feed in scheme in Policy 2019 is for LT consumers.

9.11.2 Net metering initiative is basically to provide grid connectivity to the rooftop solar power producers. The existing open access regulations provide for grid connectivity to HT consumers who opt for own generation or procurement from any generator. The petitioner themselves admitted that the HT consumers desiring to opt for solar rooftop generation are provided with grid connectivity. It is only the LT consumers in the State who are to be extended connectivity if they set up solar power plant. Solar power generation provides energy security and this State has considerable solar insolation. Therefore, Commission decides to make applicable the revised system of commercial settlement approved in this order to the LT consumers of all categories of tariff except hut and agricultural category that are under the free electricity scheme.

9.12 Issue No.III - Price for settlement of excess generation and its rationale

9.12.1 The price of purchase of the energy exported sought to be fixed is at the rate of 50% of the least of the solar tenders' rate during the latest previous financial year or 50% of the solar Preferential Tariff rate issued by TNERC corresponding to

the financial year, whichever is less.

9.12.2 Some of the stakeholders have expressed the view that reduction of capital cost or grant of subsidies by the Government is not the concern of the petitioner. Commission considers that even though the grant of subsidies by the Central/State governments should not be a concern to the distribution licensee, the fact that such incentives granted to promote rooftop solar generation was primarily to reduce capital cost and consequently the cost of generation cannot be overlooked. It is the petitioner's contention that the rate per unit of solar power has considerably reduced over the years even without grant or subsidies and allowing the consumers to adjust at higher retail tariffs leads to revenue loss. The petitioner desires to have a win-win situation.

9.12.3 The intent of the solar rooftop is primarily to encourage self consumption of the electricity as and when it is generated. Actual consumption is set off against the retail tariff which on date is much above the cost of generation. This by itself should take care of the return on investment of the rooftop owner. The question is only on the compensation for the excess energy generated. Unless there is any compensation there will be no incentive for the generator being a renewable energy source, it is not prudent to not utilize the available resource. Therefore, it is required that the generator gets paid for the extra energy generated. However, the price cannot be more than the cost of generation. Also, the losses involved in evacuation of the energy fed at LT level needs to be factored in. The unintentionally extra energy fed into the grid has to be discounted at a lower rate than an investor setting up a Solar plant and selling entire energy to the licensee.

9.12.4 In view of the above analysis and steep fall in prices of solar power,

Commission considers that it would be more appropriate that the price of purchase of energy exported to the grid shall be at 75% of the pooled cost of power purchase notified for the respective financial year or 75% of last feed in tariff determined by the Commission or 75% of tariff discovered in latest bidding whichever is less. This price shall be applicable to all rooftop solar plants commissioned in the relevant financial year for the entire life period of the plant which is 25 years.

9.13 Issue No.V - Maximum capacity of rooftop solar installation in a service connection

9.13.1 The proposal of the petitioner seeks to remove the clause that fixes a cap of injection to the licensee's grid at 90% of the electricity consumption at the end of the settlement period and excess injection above the 90% cap to lapse as the revised accounting method is to purchase the energy exported at a price. As a consequence, a cap has been sought on the maximum installed capacity at 50% of contracted demand. Clause 13.1 of the Solar Policy 2019 stipulate that the system capacity at the service connection point shall not exceed 100% of the sanctioned/contracted demand of the service connection. Commission finds it appropriate to fix the system capacity limited to 100% of sanctioned load of the service connection rather than limiting the generation to 90% of consumption.

9.14 Issue No.VI - Fixation of control period

9.14.1 The petitioner has sought to fix a control period and a settlement period of one year though no reasons have been adduced.

9.14.2 In view of the price per unit for purchase of surplus generation fixed at

75% of the Pooled cost of power purchase that is notified for a financial year or 75% of last feed in tariff/75% of tariff discovered in latest bidding, Commission does not consider it necessary to fix a control period. Excess units generated and injected into the grid will be purchased at the price as per para 9.12.4 (fixed on the date of commissioning) during each Financial year for a period of 25 years.

9.15 Issue No.VII – Installation of solar generation meter

9.15.1 Installation of Solar generation meter envisaged in the earlier order of the Commission was made optional for certain categories. Installation of solar generation meter would help the licensee for demand forecasting and also for computation of total solar generation in the State. All consumers under the net feed in scheme shall install solar generation meters to measure actual generation from the solar plant. The meter shall be as per CEA’s metering regulations and shall be placed near the bidirectional meter.

9.16 Levy of appropriate taxes

9.16.1 Levy of taxes is not under the purview of this Commission. Solar Policy 2019 has exempted net feed in consumer category from payment of electricity tax for a period of two years from the date of policy.

9.17 Other issues

9.17.1 Connectivity

Connectivity shall be as follows:

Capacity range	Connecting voltage
Upto 4 kW	240 V-single phase or 415 V three phase at the option of the consumer
Above 4 KW and upto 112 kW	415 V three phase

9.17.2 Maximum cumulative capacity at Distribution Transformer level

The scheme of revised system of commercial accounting, namely solar net feed in consumer category is at the point of commencement. Commission decides to permit penetration at DT level at 90% of the DT capacity. The Distribution licensee shall update the status of cumulative rooftop solar capacity connected to each Distribution transformer in their website.

9.17.3 Renewable Energy Purchase Obligation

The Low Tension category of consumers not being obligated entities, the energy generated from Rooftop Solar power plant shall be accounted towards fulfillment of RPO obligation of distribution licensee.

9.18 Issue No.IV - Applicability of the revised accounting methodology – Solar net feed in scheme

9.18.1 The revised energy accounting methodology proposed by TANGEDCO in the petition which shall be called the Solar net feed-in scheme for Rooftop Solar generation and hereby approved by the Commission shall be applicable to all consumers from the eligible consumer category specified in para 9.11 above, from the date of this order.

9.18.2 In this case, all the existing grid connected rooftop consumers prayed for permitting to adopt the old system. As per the data provided by the petitioner, total capacity of rooftop SPV extended so far is 16 MW. Commission decides that the consumers who obtained connections under the net metering scheme prior to the date of this order, based on Order No.3 of 2013 dt.13.11.2013 shall continue to be

governed by the provisions in the Order No.3 of 2013 dt.13.11.2013. However, in a given period of time, the net metering consumers under Order No.3 of 2013 who have not installed solar generation meters shall install the same.

Issues are settled as per the findings above. For the purpose of clarity and ease of adoption, Commission shall issue a separate order on the issues settled in this petition and the order shall take effect from the date of this order.

10. Appeal

An appeal against this Order shall lie before the Appellate Tribunal for Electricity under section 111 of the Electricity Act 2003, within a period of 45 days from the date of receipt of a copy of this order by the aggrieved person.

(Sd.....)
(Dr.T.Prabhakara Rao)
Member

(Sd.....)
(S.Akshayakumar)
Chairman

/True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission