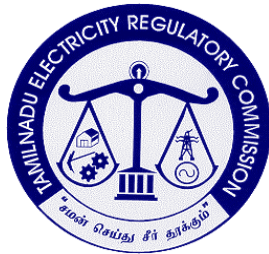




TAMIL NADU ELECTRICITY COMMISSION

Order on Issues related to Tamil Nadu Solar Energy Policy 2012

Order No. 1 of 2013 dated 07.03.2013



TAMIL NADU ELECTRICITY REGULATORY COMMISSION

PRESENT : **Thiru.K.Venugopal** - **Member**
 Thiru.S.Nagalsamy - **Member**

Order No. 1 of 2013, dated 07-03-2013

**IN THE MATTER OF : **ISSUES RELATED TO TAMIL NADU SOLAR
ENERGY POLICY 2012****

In G.O (Ms) No. 121/Energy (C2)/ dated 19-10-2012 Government of Tamil Nadu have approved the Tamil Nadu Solar Energy Policy, 2012 which envisages generation of 3000 MW of Solar Energy by 2015, reduction of carbon emissions and projection of State of Tamil Nadu as a solar hub among other objectives. In letter No. 12009/C2/2012-1/ dated 06-11-2012, the Government have issued a policy directive under section 108 of the Electricity Act, 2003 (Central Act 36 of 2003) to this Commission for necessary action on the said policy. The Commission hereby issues this suo-motu order entitled “Issues relating to Tamil Nadu Energy Policy 2012” after issuing public notice on 10-12-2012 and after examining and considering all important views of the stake holders.

The present order is issued consequent on the policy directive issued by the Government of Tamil Nadu under section 108 of the Electricity Act, 2003 (Central

Act 36 of 2003) which is independent of the powers vested with the Commission under section 86(1)(e) of the Electricity Act, 2003 and the Commission is of the view that considering the public interest involved in the issue, i.e., scarcity of power in the State of Tamil Nadu and prevalence of Restriction and Control measures and the necessity to overcome the power deficit, and also considering the fact that solar energy is a clean and green power the present directive under section 108 of the Electricity Act, 2003 has to be implemented in the interest of the public at large. Accordingly, the Commission issues the following order.

sd/-
(S. Nagalsamy)
Member

sd/-
(K. Venugopal)
Member

TAMIL NADU ELECTRICITY REGULATORY COMMISSION

Order on Issues related to Tamil Nadu Solar Energy Policy 2012

1.0 Solar energy

1.1 Among the various renewable sources, solar energy potential is considered to be the highest in the country. Solar energy offers clean, climate-friendly abundant and inexhaustible energy resource to mankind. The costs of solar energy have been falling rapidly and are entering new areas of competitiveness.

1.2. Tamil Nadu has reasonably high Solar insolation (5.5 – 6.0 kW/sq.m) with around 300 clear sunny days. Southern Tamil Nadu is considered to be one of the most suitable regions for development of solar power in the State.

1.3 The Government of Tamil Nadu launched the “Tamil Nadu Solar Energy Policy 2012” on 20.10.2012. The objectives of the Policy are

- To achieve energy security
- To reduce carbon emissions
- To project Tamil Nadu as a Solar hub
- To generate 3000MW of Solar energy by 2015
- To achieve grid parity by 2015
- To encourage indigenous Solar manufacturing in the State
- To promote Research and Development in the Solar energy sector and hybrid systems
- To create skilled manpower and employment in the new industry.

1.4 The Government of Tamil Nadu has issued a policy direction under section 108 of the Electricity Act 2003 vide its Letter No. 12009/C2/2012 dtd 6/11/12 to the Commission for taking necessary action on the Tamil Nadu Solar Energy Policy 2012.

1.4.1 Section 108 of the Electricity Act 2003 reads as follows:

“Directions by State Government

- (1) In the discharge of its functions, the State Commission shall be guided by such directions in matters of policy involving public interest as the State Government may give to it in writing.*
- (2) If any question arises as to whether any such direction relates to a matter of policy involving public interest, the decision of the State Government thereon shall be final.”*

1.4.2. In pursuant to the above, the Commission issued a draft of “Order on issues related to Tamil Nadu Solar Energy Policy 2012” which was hosted in the Commission’s website on 10/12/2012 for comments/suggestions from stakeholders. The due date for receipt of comments/suggestions was fixed on 28/12/2012. The issue-wise abstract of the comments/suggestions received from the stake-holders is placed in Annexure I. The Commission’s views / remarks on the stake-holders’ comments is placed in Annexure II. Consequent to receipt of comments/suggestions from the stakeholders the Commission issues this “Order on issues related to the Tamil Nadu Solar Energy Policy 2012” taking into account the important comments/suggestions of the stakeholders.

2.0 Generation – Demand gap in Tamil Nadu

2.1. As on 31.01.2013, the installed capacity of TANGEDCO is 10722.5 MW comprising of 2,970 MW from TANGEDCO’s four thermal stations, 516MW from four gas turbine stations, 2,223.5 MW from hydro stations, 1180 MW from private sector

power projects who have power purchase agreements with TANGEDCO, 214 MW as contribution to Tamil Nadu grid by sale of electricity from captive generating plants, 3,519 MW as Tamil Nadu's share from Central generating stations and 100 MW from external assistance.

2.2. Besides this installed capacity of 10,722.5 MW, a generating capacity of 7865 MW is also connected to the Tamil Nadu grid comprising 7114.61 MW from privately owned wind farms, 576 MW from cogeneration plants of sugar mills, 168 MW from biomass power plants and 7 MW from solar power plants.

2.3. The average power availability during the year 2012 has been around 8,000MW which leaves a deficit of about 4000 MW of peak demand. Hence any addition of power is vital to tackle the power shortage of the Tamil Nadu grid.

3.0 Technology and Standards

3.1. The technology as envisaged and standards as prescribed in the Solar Energy Policy 2012 shall be adopted.

4.0. Commission's Order on the related issues of the Tamil Nadu Solar Energy Policy 2012:

4.1. Definitions

(1) In this Order, unless the context otherwise requires,-

(a) **"Policy"** means the Tamil Nadu Solar Energy Policy 2012 issued by the GoTN in

G.O. Ms No.121 dated 19.10.2012

(b) “RPO regulation” means the Tamil Nadu Electricity Regulatory Commission (Renewable Energy Purchase Obligation) Regulations, 2010.

(c) “Commission” means the Tamil Nadu Electricity Regulatory Commission

(d) “Obligated Consumer” means the category of consumers who are required to fulfill the Solar Purchase Obligation as mandated in the Tamil Nadu Solar Energy Policy 2012.

4.2. Solar Purchase Obligation (SPO)

4.2.1. As prescribed in the Solar Policy, 6% SPO starting with 3% SPO till December 2013 and 6% from January 2014 is applicable for the following category of consumers:

(a) HT Consumers (HT Tariff I to V)

This category will cover all HT consumers including:

- (i) Special Economic Zones (SEZs)
- (ii) Industries guaranteed with 24/7 power supply
- (iii) IT parks, Telecom towers
- (iv) All Colleges & Residential Schools
- (v) Building with a built up area of 20,000 sq.m or more

(b) LT Commercial (LT Tariff V)

4.2.2. The following categories of consumers are exempted from SPO:

- (a) Domestic consumers
- (b) Huts
- (c) Cottage and tiny industries
- (d) Powerlooms

(e) LT Industrial consumers

(f) Agricultural consumers

4.2.3. In respect of such Solar Purchase Obligated consumers they may generate themselves captive Solar Power in Tamil Nadu equivalent to or more than their SPO or buy equivalent to or more than their SPO from other third party developers of Solar Power projects in Tamil Nadu or purchase the same from TANGEDCO at Solar Tariff or meet the obligation through purchase of RECs as prescribed in the Tamil Nadu Solar Energy policy 2012. If the obligated consumer happens to be an open access consumer, the Solar Purchase Obligation fixed in the Tamil Nadu Solar Energy Policy 2012 may be considered as inclusive of Solar Purchase Obligation fixed in the RPO regulation..

4.2.4 Enforcement Mechanism

4.2.4.1 The SPO will be administered by TANGEDCO

4.2.4.2 If any of the obligated consumers has not complied with the SPO they should pay an amount equivalent to the “Forbearance Price” of the Solar REC to the administrator and in turn the administrator shall purchase REC for the amount collected from the obligated consumers.

4.2.4.3 For the purchases made by the obligated consumers from the TANGEDCO in order to meet their Solar Purchase Obligation, the TANGEDCO shall make equivalent purchases of solar power as prescribed in the Tamil Nadu Solar Energy Policy 2012.

4.2.4.4 In case an obligated consumer has multiple service connections, the SPO can be met in total for his/her electricity consumption in the area of the distribution licensee.

4.2.4.5 The SPO will be fixed on the total consumption of non-solar power of the consumer irrespective of the sources.

4.2.4.6 For those consumers who are purchasing solar power only from the distribution licensee for the fulfillment of their SPO the compliance period may be specified as that of the billing cycle. For others who are purchasing from other solar generators or consuming from their own solar generators the period may be fixed for the Calendar year as prescribed in the Policy.

4.3 Net metering

4.3.1 For Domestic Rooftop Solar generators, the consumer meters shall be replaced with suitable meter(s) for net metering. The meter/meters for net metering shall be installed by the distribution licensee at the cost of the consumer/generator. The TANGEDCO shall submit a detailed procedure covering the following issues within 30 days of issuance of this Order for implementation of net metering for domestic roof top Solar generators taking into account the CEA's regulation on Installation and Operation of Meters and get the same approved by the Commission :

- a) Standards and location of meters
- b) Tariff for excess generation/lapsed units
- c) Period of power credit
- d) Any other related issue.

4.4 LT Connectivity

4.4.1 The TANGEDCO shall evolve a detailed procedure for LT connectivity and get the same approved from the Commission. The procedure shall include make and standards

for inverters, harmonics standards, synchronization to the grid, safety/protection norms, norms for generator capacity versus connecting voltage etc.,

4.5 Renewable Energy Certificate to be issued to solar generators under the Policy

4.5.1 For the operation of REC instrument as prescribed in the Policy, the TANGEDCO shall evolve a procedure for accreditation, issuance and trading of REC for the Solar generators established in Tamil Nadu and get it approved by the Commission.

5.0 The following issues related to the Solar policy will be dealt with by the Commission by a separate Order.

- (a) Banking mechanism
- (b) Transmission and Wheeling charges
- (c) Cross subsidy surcharge
- (d) CDM benefits
- (e) Reactive power charges
- (f) Grid availability charges
- (g) Adjustment of generated energy for captive use
- (h) Scheduling and system operation charges
- (i) Application and agreement fees
- (j) Billing and payment
- (k) Payment security and security deposit
- (l) Energy Purchase and Wheeling Agreement
- (m) Scheduling of Solar energy / UI mechanism

- (n) Applicability of Merit Order
- (o) Harmonics
- (p) Evacuation of power
- (q) Any other issues

(By Order of the Commission)

Sd/-
(S. GUNASEKARAN)
Secretary

ANNEXURE I

Issue-wise abstract of comments / suggestions of the Stake-holders

1. SOLAR PURCHASE OBLIGATION SPO

(1) Dr. K. Venkatachalam, Chief Advisor, Tamil Nadu Spinning Mills Association has stated the following in respect of SPO :

(i) Neither the policy nor the consultative paper, never explains from what out of this 6% SPO is attempted to be fixed. This has to be explained very clearly. Since a HT consumer is authorized to consume power from various sources like the following to meet out his demand (a.) from TANGEDCO power (b) from his own inhouse captive power plant, may be through NCES sources or through conventional sources (c) from his own grid connected captive power plant may be through NCES sources or through conventional sources. (d) from purchase through Third parties/LEX etc., (e) from his own renewable power from wind. It should be made out clearly from what amount of power, this 6% SPO needs to be computed.

(ii) "Obligated entity" is defined differently in the Solar Polcy 2012 and in Clause 2 (g) of the TNERC Renewable Energy Purchase Obligation Regulations 2010.

In order to have sufficient consistency between the Electricity Act 2003, TNERC RPO Regulations 2010 and Order on issues related to Tamil Nadu Solar Policy 2012, the Commission may consider defining obligated entity as one and the same as defined in the RPO Regulations 2010. If the term is defined in a different name there will not be any consistency between the Principal Act Regulations and the Order.

(iii) there is already an obligation to a level of 8.95% from non solar sources with an additional 0.05% from solar sources as RPO as per the TNERC RPO Regulations 2010. Hence the total obligation under RPO is 9% only. However, when the SPO is specified separately, the impact of the present RPO fixed at 9% in total should also be considered for modification. Accordingly, it should specifically exempt to that extent the RPO in suitable manner.

(iv) If it is considered that it is necessary to have RPO and SPO separately for any reasons, the RPO should be balanced to that extent of the newly prescribed SPO and to that extent suitable reduction in the RPO percentage should be made by providing amendment in the TNERC RPO Regulations 2010. Hearing to put forth suggestion requested.

(2) Thiru R. Nandagopal, Secretary, Tamil Nadu Electricity Consumers Association has commented that the connected load of the obligated entities would be approximately 6000 MW and therefore 180MW of solar energy was required round the clock for these entities to meet the SPO and this capacity did not exist. Based on the PLF of solar power plants an installed capacity of 720 MW was required for the purpose. Any introduction of additional obligation should be after the installation of additional generating capacities. THE SPO of 6% for 2014 cannot also be met since 1500 MW capacity has to be installed during 2013. Considering the investment requirement of Rs. 15,000 Crores this is a near impossibility. Hence the SPO should not be increased from the present 0.25% and should be increased in stages as and when capacity is added.

Since price of REC certificates is an indication of the amount of solar power generated, if the price falls below a threshold then the obligation can be increased. This will ensure that the investors in solar power are adequately compensated and the consumers are not overburdened.

Since most of the HT consumers in the State are financially vulnerable the SPO fixed would affect them financially.

(3) The Confederation of Indian Industry represented by represented by Thiru R.Dinesh, Chairman has also expressed the same views.

(4) Thiru S. Narayanaswamy, No. 12, Anandan Street, T.Nagar, Chennai has offered the following on the above issue: (i) RPO is already issued in Commission's Order RPO-10-1 dt 17-12-2010 and RPO – 19-2 dtd 29-7-2011 which is in force. Accordingly all captive power generated and third party power purchased is subject to RPO obligation of 0.05% and the percentage will be increased in the coming years. Now the SPO is being enforced on the consumption at HT services Thus, the obligation is imposed twice. Commission may consider merging both so that the obligation covered under earlier RPO will also be accounted against the new obligation. The new obligation may be imposed on diesel power generation also. Non grid connection generating sets in HT services may also be covered under this scheme. However, the percentage may be reduced to 2% per year in the year ending 31st March 2014 and 1% for the period ending December 2013 may be delete. The rate may be increase at 2% per year. Till it reach is 6% per financial year. Imposing RPO on financial year basis will help every one. Further the grid connection charge proposed to be imposed TANGEDCO on grid connected solar power producers may be dropped.

The Commission may consider specifically mentioning that all HT services including State and Central Government services shall also comply with this obligation. A small incentive of Re.1/Kwhr those LT domestic consumers come forward to install solar power plants at their houses may be considered.

Regarding SPO by TANGEDCO it has been said that the distribution licensee's obligation in the RPO obligation 2010 cannot be equated with the solar power generated and used by consumers. This goes against the RPO order of CERC. No such Government guidelines with this effect are there in the policy. The Commission may order the distribution licensee shall either generate solar power or purchase from the generators at APP cost or negotiated tariff covered by PPA or purchase REC certificates to satisfy the CERC regulations on RPO. This concession is granted will completely spoil the REC market and kill the solar power generating industry. We are of the firm opinion the distribution licensee cannot be exempted and it goes against the CERC notification on RPO.

(5) Smt Priyanka Murthy Research Analyst with reference to the above has queried

(i) In a multi user campus/malls, who is obligated for the 3%-6% - the landlord or the tenants?

(ii) Is a structure where a master developer creates eg 100x500kW modules and then sells (or leases) on ownership of each module to third parties who need to comply with their SPO's valid? – a sort of wholesale/retail arrangement?

(6) Thiru Arun Kher, VP – Facility Infrastructure Management, TATA Communications has questioned whether the Obligated Entities(OEs) will need to satisfy SPO at each meter or at the entity level. i.e., across all their meters at their various facilities? If OEs are allowed to satisfy their SPO at the entity, they will have the flexibility to set up solar plants which satisfy the SPO for more than just the site at which they are located. this is cost effective means of meeting the SPO and requested to allow the same. If SPO satisfaction is allowed only at the meter level wheeling could be affected by grid down time or insufficient transmission capacity. Hence have requested inclusion of the following clause” Where a legal entity such as a company has multiple HT electricity consuming meters across one or more sites, the SPO has to be met in total for its electricity consumption across the entire State. This can be met through higher consumption at one or more sites and lesser (even nil) consumption at other sites as long as the total SPO is met through consumption of solar power (whether through onsite generation or through wheeling in solar power) or is met through the purchase of RECs.

(7) Thiru MS Krishna , Senior Manager, Dalmia Bharat Cement has also posed similar views with respect to set-off of shortage of SPO of one unit with a surplus of SPO of another unit i.e., if SPO was unit wise or company wise. He also requested to know whether the 6% SPO was applicable to captive generation units also or if it was for the units purchased from TNEB and if auxiliary consumption of captive power plants would be included for calculating the SPO.

(8) Indian Wind Power Association represented by Chairman Thiru Kasthoorirangaian, has suggested that the present SPO is 0.05% for 2011-12 and this could be raised to 0.5% for 2012-13 and to 1% for 2013-14. Thereafter the increase can be at 1% per year for the next five years.

(9) Auroville Consulting represented by Co-founder Toin van Megen has suggested that only discoms are designated as the obligated entities and the additional cost of producing/buying solar power should be factored in the regular electricity tariffs. Alternately this may be funded through green cess/tax.

(10) M/s EID Parry have suggested that the time frame for SPO may be modified to 3% by 2013 and 6% by 2015.

Industries that generate power based on renewable sources like bagasse, bio fuel etc and use it for their captive use and sell power to TNEB should be exempted from SPO.

Power consumed for generating power for exporting to state grid/open exchange access to be exempted.

SPO of industries that generate power based on fossil fuel for their use as well as for exporting to state grid/open may be clarified though they may not be getting guaranteed power 24x7 from TANGEDCO.

In a multi location business, developing their own solar power and export it to the grid, policy should state how the individual SPO of different units and office buildings shall be dealt with.

Is SPO to be met on monthly/daily/annual basis? When a multi location business generates solar power in single location it should be allowed to reconcile it on annual basis.

The power generated from renewable sources should be exempt from SPO both for season as well as off season similar to sugar mills. The obligated consumers should therefore exclude sugar mills having co-gen plants.

(11) Shri M.G. Devasahayam representing Citizens Alliance for Sustainable living (SUSTAIN), Chennai has stated that there cannot be any exempted category of consumers in the State, not covered by SPO. It has to be compensated by grant.

TANGEDCO and other generators who use fossil fuel for generation must be treated as 'obligated consumers'. It will also ensure SPO as a universal obligation in the State.

When the minimum quantum of power purchase from solar energy is not available in the market in a particular and the Commission is satisfied with the fact, then other renewable energy sources shall be purchased for fulfillment of solar RPO.

(12) President, The South India Spinners Association has also put forth the same views on the above issue.

(13) Thiru Venkteswaran Assistant Project Manager **ITCOT Consultancy and ServicesLtd**, Chennai requested to know whether the RPO for solar was based on plant energy consumption or contract demand or maximum demand.

(14) Thiru Padmanabhan, of Padmaja Financial services, Chennai has suggested enforcement of penalty for non compliance of RPO which can be recovered by TANGEDCO through its billing process on quarterly basis.

(15) Thiru B.V. Chandrashekar Chief Electrical Distribution Engineer, Southern Railways has requested to know whether the domestic consumers covered under HT tariff II-A (residential colonies and housing complexes and single point supply to Co-operative group housing societies) and Agricultural consumers under HT tariff IV (Lift Irrigation societies for Agriculture) are also obligated consumers under the SPO or are exempted from SPO.

It has also been suggested that if the obligated consumer is forced to choose the option of purchasing solar power from the licensee, the licensee may be permitted to raise the bills at solar tariff only after sourcing required quantity of solar power over and above his SPO. When the quantity of solar power purchased by the licensee is short of the requirement, the quantity available in excess of his SPO/RPO shall only be distributed among all obligated consumers on pro-rata basis and their SPO be limited to the available quantity of solar power.

(16) Thiru Rahul Balaji, Chennai has commented that the SPO target set out in the policy are extremely high, impossible to achieve and is in variance with the National Plan of climate change (NAPCC).

(17) Thiru V. Srinivasan, GM, CPCL, Chennai, has informed that in terms of the judgement of Hon'ble aptel IN APPEAL 57 OF 2009 AND UNDER THE SCHEME OF THE Act, both renewable source of energy and co-generation power plant are equally entitled to be promoted by the State Commission. Similar to the case where the consumer who consumes energy from co-generation plant would be eligible for accounting the same for RPO , the Policy should also exempt power produced and consumed from co-generation plants from SPO.

In addition it has been requested to exempt co-generation plants of CPCL from SPO Obligations.

2. REC

(1) **Thiru S. Narayanaswamy, No. 12, Anandan Street, T.Nagar, Chennai** Net metering consumers will not be eligible for REC certificates. It was requested that the procedure indicated in CERC notification No.L-1/12/2012-CERC dt. 9-11-2010 may be generally followed except that registration may be done at State level.

(2) **Smt. Priyanka Murthy** requested to know as to Who is underwriting payment for REC's?

(3) **Thiru R. Nandagopal, Secretary, Tamil Nadu Electricity Consumers Association** has suggested that the RECs should be tradable in National Exchanges for them to be made viable.

(4) **The Confederation of Indian Industry** have also expressed the same view on the issue.

(5) **Auroville Consulting** has suggested that the RECs may be claimed by TANGEDCO and the revenue generated thereof may be utilized for funding solar projects in public buildings.

(6) **TANGEDCO** has informed that at present, the RECs are issued at National level and specific tagging as to the name of the State is not mentioned in such certification. Therefore, point C (in page 9 of the Solar Policy) may have to be amended accordingly.

(7) **Thiru R. Pandian** has expressed that the State should set up solar REC in line with REC in Delhi.

(8) **M/s EID Parry** has suggested that since the policy fixes pattern for 20 years, similar yard stick should be set for REC trading also and minimum and maximum value can be specified.

In case a developer wishes to switch over sales to state grid, he should be allowed to do so at TANGEDCO's solar tariff if he does it on a permanent basis.

(9) Shri Devasahayam of SUSTAIN has proposed that a proper solar REC trading system of small designated quantity say 100 units may be allowed once in 3 months to ensure promotion of solar energy.

(10) Thiru Padmanabhan, of Padmaja Financial services, Chennai has suggested that it should be made mandatory for off grid captive power plants using DG sets of 1 MW and above to buy solar RECs to the extent of 6% of their gross generation. they can be given the option of buying SPO compliant solar power from open access or TANGEDCO if they have connectivity and contract demand. It has also been suggested that the Commission should pass appropriate Orders for Solar/OA wheeling charges mechanism that is REC compliant due to the prohibitive cost of OA charges.

(11) Thiru Prakash Pankaj General Manager, Moser Baer, New Delhi, has suggested that Roof top Solar PV plants may be allowed to be eligible for REC as per CERC regulations.

3. SOLAR TARIFF

(1) Thiru S. Narayanaswamy, No. 12, Anandan Street, T.Nagar, Chennai has suggested that the Commission may consider fixing the tariff limited to average pooled power purchase cost which is the rate at which TANGEDCO is purchasing solar power from the developers. It has also been suggested that the solar tariff in para 2 may also be defined to avoid confusion at a later day.

(2) Thiru Ramu Rangaraju has requested to know - What is the expected unit price/rate will be offered by TANGEDCO to Generator?

(3) Indian Wind Power Association has stated that the tariff for solar energy is Rs. 6.20 which was too low and it should be atleast Rs. 9 to start with.

(4) Thiru MS Krishna , Senior Manager, Dalmia Bharat Cement requested to know if solar tariff was applicable captive generation also and whether the solar tariff would be discounted for the cost of generation.

(5) Auroville Consulting have suggested that for roof top solar projects net metering benefit to be topped up to arrive at a target compensation per kWh, similar to the benefit of s feed in tariff mechanism.

(6) Thiru R. Pandian has opined that the solar tariff should be fixed at Rs. 10 per unit.

(7) Shri M.G. Devasahayam (SUSTAIN) has commended the concept of feed-in tariff as it would democratize the energy sector. He has also suggested that the Commission should determine a separate tariff for export of solar power through the LT/HT connectivity system, at an appropriate high price for solar power. If a net metered tariff is introduced the plant would not require battery sets and this would reduce the cost of installation.

It has also been suggested to direct TANGEDCO to defer and go in for re-tendering as it is not in accordance with Section 63 of the Electricity Act 2003.

(8) President, The South India Spinners Association has also put forth the same views on the above issue.

(9) Thiru Rajesh Peddu, Sr. Manager, Welspun Energy Ltd., has also commented that TANGEDCO has not adhered to Section 63 of Electricity Act 2003 for the competitive bidding for purchase of 1000 MW of Solar power. It has been stated that the bid document suggests that all bidders have to accept L-1 price as negotiated by TANGEDCO and the same will be escalated by 5% every year upto 10 years. Further the draft PPA also has the rider that “subject to TNERC approval”. It has been requested to know whether the tariff methodology mentioned above has the formal acceptance of TNERC and whether the tariff negotiated by TNAGEDCO through the tender would be adopted by TNERC.

(10) Shri Jagat S. Jawa, Director General Solar society of india has also requested the Commission to withdraw the the Open Tender issued by TANGEDCO as is not in accordance with the Guidelines for Tariff based Competitive bidding process for Grid connected Power Projects based on Renewable energy Sources dated 27.12.2012 issued by the Central Government.

(11) Consun Energy have opined that the project size from 1 MW upto 100MW does not ensure a level playing field for small project developers as big size developers could offer very competitive tariff compared to small sized players.

4. METERING & NET METERING

(1) TEDA have enclosed the CEA guidelines for installation of Energy Meters for Solar Generation.

(2) Thiru MS Krishna , Senior Manager, Dalmia Bharat Cement has requested to know the kind of metering arrangement to be installed and whether it was necessary to connect to the grid similar to REC to confirm the quantity.

(3) Secretary, Tamil Nadu Electricity Consumers Association has expressed the view the tariff should be the same for import and export. Since the cost of generation of roof top models was Rs. 10/unit the cost of generation had to be brought in par for the scheme to succeed.

(4) The Confederation of Indian Industry have also expressed the same view on the issue

(5) Thiru S. Narayanaswamy, Chennai has suggested that Care should be taken to ensure that there is no back feeding when there is no EB supply and the transformer or LT line is under maintenance.

Using solar power at LT services with change over switches and separate metering will be a better option from safety point of view.

Once consumer agreed for net metering they have to pay grid connection charges at the rate of Rs.30,000/-per year per MW as per the petition filed by TANGEDCO for imposing miscellaneous charges. In addition they have to pay meter reading charges at Rs.300/month. The charges proposed is on high side and the Commission may consider exempting solar power connections from these charges.

Ordinary meters may be used and reverse power stop may be removed.

The tariff should be limited to the tariff at which the consumer is charged and billing may be done for net energy consumed provided there is no net export.

(6) Auroville Consulting have suggested that bidirectional meters are to be provided. Due to scarcity Commission may include provision for permitting the consumers to procure them from a list of approved manufacturers/ types. Use of electro-mechanical feraris type energy meters in which reverse stopper has been removed may be considered. Suggestions for solar metering have also been enclosed.

It has also been stated that protection norms that are already in adopted countries that have large grid-connected solar system may be adopted.

(7) Shri M.G. Devasahayam (SUSTAIN) has stated that bidirectional meters could be used, however, second meter could be installed for those who can afford.

He has also suggested that net metering facility should be extended compulsorily to residential apartment complexes which would contribute a plant capacity of 100kW each and also extended to all consumers reserving incentives only to domestic consumers.

(8) President, The South India Spinners Association has also put forth the same views on the above issue.

5. EVACUATION

(1) The Secretary Sri Karthikeya Spinning & Weaving Mills Pvt. Ltd., has suggested that since the peak hours of solar generation was from 10 AM to 2 PM most of the companies engaged in wind industry are holding excess land along the underutilized grid which could be effectively used for solar generation. Thereby the entire capacity of the grid established for wind energy could be used for solar capacity and also as a

hybrid and the investment by the Government on the grid could be reduced substantially.

(2) Thiru R. Nandagopal, Secretary, Tamil Nadu Electricity Consumers Association has represented that the grid network in the State had to be increased to ensure 100% evacuation. The existing lines used for transmitting wind energy should not be used to transmit solar energy.

(3) Tamil Nadu Electricity Consumers Association has requested information on the procedure for LT connectivity to be put in public domain for comments from stakeholders after TANGEDCO has evolved the proposal.

(4) Confederation of Indian Industry have also expressed the same view on the issue.

(5) Auroville Consulting has suggested the following: (i) TANGEDCO to provide evacuation facilities pro-actively and without limitations. (ii) Grid outages to be compensated for in the form of SPO reduction or deemed generation compensation in the case of PPAs. (iii) evacuation to be permitted for third party sales without restrictions. (iv) evacuation for captive consumption to a different location to be permitted.

(6) India Wind Power Association has suggested that the terms are to be in complimentary with that of wind power.

(7) Thiru R. Pandian has suggested that consumers above 500 kW should be provided dedicated uninterrupted power supply line at the expense of either the government or the consumer.

(8) Thiru Venkteswaran ITCOT Consultancy and Services Ltd, Chennai has suggested continuous charging and enough grid availability is required for better power evacuation and has requested to specify the voltage levels for projects of capacity above 1 MW.

6. TRANSMISSION & WHEELING CHARGES

(1) Thiru MS Krishna , Senior Manager, Dalmia Bharat Cement requested information on the transmission, wheeling and other charges in case it was for captive consumption or sold to third parties.

(2) Smt. Priyanka Murthy also requested information on these charges without REC mechanism.

(3) **Thiru Ramu Rangaraju** has requested information on the rates for evacuation per km.

(4) **Auroville Consulting** has suggested that rooftop systems may be exempted from these charges since transmission and distribution losses are actually reduced on account of these.

(5) **Thiru Prakash Pankaj General Manager, Moser Baer, New Delhi** has suggested that solar power plants may be exempted from Transmission and Wheeling charges as well as Transmission and Wheeling losses.

7. BANKING

(1) **TANGEDCO** has stated that for LT commercial and domestic consumers, consumption may be adjusted in the next billing. Excess generation, if available at the end of the year may be carried over to the next year and subsequent year and so on. Billing period shall be bi-monthly/monthly.

(2) **Auroville Consulting** have recommended the following in respect of Banking Mechanism – net metering balances to be carried over to next billing and settled every year in the month of April.

(3) **Thiru Devasahayam of SUSTAIN** has stated that no banking of excess power or energy will be allowable, but can be converted into solar REC.

(4) **President, The South India Spinners Association** has also put forth the same views on the above issue.

(5) **Southern Railways** has suggested that banking facility is a must for captive as well as third party solar generators since it is infirm, seasonal and a periodic power.

8. OTHER ISSUES

(1) Smt. Priyanka Murthy requested to know whether there (i) Is there any restriction on no. of projects that can be taken up by an investor/developer?

(ii) What are the statutory approvals that need to be obtained for the development of utility scale projects?

(2) Thiru Ramu Rangaraj has also raised the same query with regard to approvals and in addition has added Will there be any support from TANGEDCO to get bank loans to set up a plant ?(will you make any arrangement to tie up with nationalized bank?

(3) Thiru R.S.Subas Chandran has suggested that (i) For SSIs availing HT power supply there should not be any power cut upto 200 kW (ii) At least 100 units must be given as quota per kW per month.(iii) SSIs should not be compelled to go for solar power upto 200kW. (iv) Upto sanctioned load of 200 kW installation of solar power should be left to the option of the consumer.

(4) D.M. Charles Life Member South Indian Sugarcane and Sugar Technologists Asscn. Chennai has suggested to 1) Computerize the entire operation from generation to consumption with transparency in every aspect of the business and 2) Allow power wheeling by even 1 MW investors upto two or three consumers.

(5) Thiru Narayanaswamy, Chennai has requested (i) Hon'ble Commission may publish a copy of the Tamil Nadu Government order No. 12009/C2/2012 dt 6/11/12 issued under section 108 of EA 2003 for public's information to understand the intention of the Government. (ii) Hon'ble Cn. may recommend reduction of Duties and Taxes imposed by Tamil Nadu Govt. Cn may recommend reduction or removal of these taxes for the next 10 years. In addition reimbursement of registration charges of the land purchased for setting up solar power project similar to AP & Gujarat.

(6) Indian Wind Power Association has suggested that (i) special concessions are to be given to hybrid systems (ii) suitable capital subsidy to be given in case of wind

developers (iii) Both solar and wind energies to be awarded 'Must run status'.(iv) wind and solar power to be treated equally in all respects.

(7) TANGEDCO has informed that - The policy states "Exemption from demand cut to the extent of 100% of the installed capacity assigned for captive use purpose will be allowed". The policy expresses the exemption based on installed capacity. The above has to be suitably amended so as to be based on the available capacity.

The additionality in respect of solar power plants may be taken as its PLF.

If PLF is considered 18%, the 18% of the installed capacity may be allowed for exemption from power cut.

(8) Auroville Consulting have also recommended the following in respect of the following:

Cross Subsidy surcharge – to exempt the sector and factor the cost in consumption tariff.

CDM benefits – Developers to apply in case of utility level & TANGEDCO or TEDA in case of roof top projects

Reactive power charges – utility level a mechanism could be developed, roof top and small scale to be exempted.

Grid availability charges/Compensation – a) a pro-rata reduction in relation to grid availability may be considered. b) PPAs to include a provision for deemed generation for grid availability below say 95% so that the power producer gets paid for the periods that he could have produced, but was not able to produce due to grid failure.

Adjustment of generated energy for captive use – Provision to be made for utilization of generated energy at locations owned by the consumer/entity. energy consumed should be as done in net-metering.

Scheduling and system operation charges – Solar energy to be exempted. Any actual cost incurred by TANGEDCO to be factored into the consumption tariffs.

GBI – Recommendations for regulating and implementing have been enclosed.

(9) Thiru Venkateswaran ITCOT Consultancy and Services Ltd, Chennai has requested information on a) charges made are at consumption or generation point b) usefulness of solar power to avoid shortage during peak demand c) promotion of solar plants in Kanyakumari and Tirunelveli districts where the grid is overloaded due to Tuticorin Thermal Plant and wind generators. Is SPO of 3-6% is mandatory for industries in these areas.

(10) Shri AnirbanChoudhury Adviser – Project Development Management Solar PV Business United Telecoms Ltd. Bangalore has furnished proposal for Green Transfer of development rights (TDR) for meeting peak power requirements in premises from dedicated Solar Park/Farm.

(11) Dr. R. Murugesan Associate Professor, Centre for Rural Infrastructure, Gol, Hyderabad has submitted a paper on solar power which highlights the stature of solar power in India, technologies involved and its utilization in the domestic and agricultural sector.

(12) Southern Railways has suggested that a) Cross subsidy charges need not be levied and b) merit order dispatch may not be applied till such time the solar power systems stabilize and attain grid parity.

(13) Thiru Rajesh Peddu, Sr. Gen. Manager, Welspun Energy Ltd, Delhi, has suggested that the Technological Standards mentioned under JNNSM by MNRE, Gol, may be adopted.

(14) Thiru MS Krishna , Senior Manager, Dalmia Bharat Cement wanted to know the scheduling arrangements especially during night hours when it is required by the consumers, when there is no generation.

ANNEXURE II

Issue-wise abstract of Remarks of the Commission

1. SOLAR PURCHASE OBLIGATION - SPO

(1) Many of the Stake holders have requested to merge the SPO & RPO. In case the SPO has to be fixed separately the RPO has to be modified /reduced accordingly.

In this connection it is reported that SPO and RPO are two different obligations. The RPO has been fixed under the RPO Regulations issued by the Commission whereas the SPO has been made mandatory under the Tamil Nadu Solar policy 2012. So these two obligations cannot be merged.

(2) Regarding modification or reduction of SPO it is to be stated that the Policy has been communicated to the Commission under Section 108 of the Electricity Act 2003.

(3) Some of the stake holders have stated that the distribution licensee should not be exempted from SPO.

In this connection it is to be stated that the exemption has been given in the Policy.

(4) Many of the stake holders have requested that “where a legal entity such as a company has multiple HT electricity consuming meters across one or more sites, the SPO has to be met in total for its electricity consumption across the entire State. This can be met through higher consumption at one or more sites and lesser (even nil) consumption at other sites as long as the total SPO is met through consumption of solar power (whether through onsite generation or through wheeling in solar power) or is met through the purchase of RECs.” Some of them have requested whether the SPO compliance has to be done on daily/monthly/yearly basis.

In this connection it is suggested that for those consumers who are purchasing solar power only from the distribution licensee for the fulfillment of their SPO the compliance period may be specified as that of the billing cycle. For others who are purchasing from other solar generators or consuming from their own solar generators the period may be fixed for the Calendar year as prescribed in the Policy.

(5) Some of the stake holders have suggested that in case if the distribution licensee is unable to purchase the required solar power for which the charges have already been levied on the obligated entities, the benefit of the shortage should be equally distributed among the obligated entities.

There is no enforcement mechanism in the Policy for non-compliance of the SPO. Therefore in line with the RPO regulations the following are incorporated in the Order.

a) TANGEDCO may be designated as the nodal agency.

b) If any of the obligated entities has not complied with the SPO they should pay an amount equivalent to the obligation (Forbearance price) to the nodal agency and in turn the nodal agency shall purchase REC from the open market.

c) The Distribution licensee has to purchase REC for the excess amount collected from the obligated consumer.

(6) To the query posed on fixation of SPO percentage on the portion of consumption it is stated that the policy prescribes 3% SPO till December 2013 and 6% from January 2014. The obligation is generally considered on the total consumption of the consumer irrespective of the sources.

(7) Some of the stakeholders have raised doubts over achievement of additional capacity as targeted in the Policy and therefore the means for fulfillment of SPO by the consumers.

The SPO has been prescribed based on the expected addition of solar power/availability of solar REC.

(8) A clarification has been raised on imposing SPO to domestic services under HT-Tariff II-A or agricultural services under single point of HT supply.

In this connection it is to be stated all HT consumers are covered under the Policy as obligated consumers.

(9) With regard to treating power from co-generation in par with solar plants it is to state that Co-generation may be considered for non-solar RPO. Solar RPO is a distinct RPO fixed for purchasing only solar power and hence both cannot be treated equally.

2. SOLAR REC

(1) Most of the stake holders have expressed that the procedure for the REC prescribed in the Policy shall be made in consistency with the CERC's RPO Regulations. In this connection the TANGEDCO's comment at 2(6) of Annexure-I may be seen.

(2) Small quantum is not proposed since REC is a national level instrument, based on CERC's Regulations on REC. It should also be in line with the Commission's RPO Regulations.

(3) One of the stakeholders has suggested that the consumer who is using his off grid captive generation has also been counted for SPO obligation.

The SPO for consumption from off grid captive power plant could be reviewed at an appropriate time.

3. SOLAR TARIFF

(1) Solar power tariff is decided by competitive/reverse bidding as prescribed in the Policy.

(2) The main objection of the stakeholders is that TANGEDCO has not followed Section 63 of the EA 2003, in respect of bidding documents. This matter is sub-judice before the Hon'ble High Court of Madras.

4. METERING & NET METERING

(1) The stake holders have requested the following details.

- a) Standards and location of meters.
- b) Tariff for excess generation/lapsed units.
- c) duration of power credit
- d) Safety of men and material of distribution licensee during the maintenance of licensee's equipment and line by the licensee.
- e) Connectivity

In this connection the Commission directs the distribution licensee to furnish the detailed specification and procedure on the above issues. The Commission may approve the same after inviting suggestions/objections from the stake holders. Such provisions have been incorporated in the Commission's Order.

5. EVACUATION

(1) A view has been expressed that the infrastructure developed for the WEGs may be utilized fully for solar/hybrid generators. This issue needs to be examined by TANGEDCO in detail.

(2) Some of the stakeholders have expressed concern about the grid availability.

Since the Act permits generators to have dedicated transmission line the grid availability for interface line is more of the responsibility of the generators. If grid availability is not provided by the licensee the generator can approach the appropriate forum for relief.

6. TRANSMISSION & WHEELING CHARGES

(1) Many of the stakeholders wanted to know the transmission and wheeling charges.

In this connection the Commission has already indicated that transmission and wheeling charges will be fixed in a separate order.

7. BANKING

(1) Banking mechanism needs to be dealt with separately.

8. OTHER ISSUES

(1) Exemption from demand cut : The Policy states that the exemption from power cut is upto the extent of 100% of installed capacity. Now the TANGEDCO has expressed that the Policy has to be amended to provide exemption to the extent of only 18% of the installed capacity considering the PLF of the solar generators. Comments of TANGEDCO at 8(7) of Annexure-I may be seen.

(2) Regarding grid availability charges, adjustment of generated energy, scheduling and system operation charges and reactive power charges the same will be considered in a separate Order by the Commission.

(3) The Indian Wind Power Association has requested for same treatment for wind and solar power in all respects.

Treatment of Solar power will be considered in a separate comprehensive Order on solar energy giving due opportunity to the stake holders.

(4) Some of the consumers have requested opportunity for hearing their views or arranging for public hearing.

This order has been issued to implement the provisions of the Solar Policy which has been communicated by the GoTN under section 108 of the Act. No new issues have been introduced by the Commission except minor implementation corrections as suggested by the stakeholders. Keeping in view, the provisions of applicable Regulations, the Commission is of the opinion that separate public hearing is not necessary. Consultation process has been carried out by obtaining comments from stake-holders.

(5) Some of the stakeholders have expressed that the Policy has been communicated to the Commission under section 108 of the Electricity Act 2003 wherein public interest is involved hence public hearing is to be conducted.

In this connection section 108(2) of the Electricity Act 2003 is reproduced below:

“ If any question arises as to whether any such direction relates to a matter of policy involving public interest, the decision of the State Government thereon shall be final.”

(By order the Commission)

Sd/-
(S. GUNASEKARAN)
Secretary