

**MINUTES OF THE 27<sup>th</sup> STATE ADVISORY COMMITTEE (SAC) MEETING OF  
TAMIL NADU ELECTRICITY REGULATORY COMMISSION HELD ON 20<sup>th</sup>  
January 2014 AT DYNASTY HALL, HOTEL AMBASSADOR PALLAVA,  
EGMORE, CHENNAI – 8.**

**Members Present:**

1. Thiru. S. Nagalsamy Member, TNERC – Ex-officio Member, SAC
2. Thiru. G.Rajagopal Member, TNERC – Ex-officio Member, SAC
3. Thiru. Rajesh Lakhoni , IAS., Secretary to Government, Energy Department, Government of Tamil Nadu – Member, SAC
4. Thiru. K.Gnanadesikan , I.A.S.,Chairman & Managing Director, TNEB Ltd , TANGEDCO & TANTRANSCO – Member, SAC
5. Thiru. G.S. Rajamani – Member, SAC
6. Thiru.J.S.P.Singh, Chief Electrical Engineer, Southern Railways, Chennai, Member, SAC
7. Thiru.K.Alagu, Vice President, Tamil Nadu Chamber of Commerce & Industry, Member, SAC
8. Thiru.K.Gopalakrishnan, Tamil Nadu Small & Tiny industries Association (TANSTIA), Member, SAC
9. Thiru.K.Kathirmathiyon, Secretary, Coimbatore Consumer Cause, Member, SAC.
10. Thiru.R.Desikan, Consumers Association of India, Member, SAC.

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**Secretary TNERC** welcomed the Hon'ble Members of the Commission and the members of the State Advisory Committee. He informed that the meeting was convened to discuss the "Consultative paper on Comprehensive Tariff order on Solar Power". The consultative paper was already hosted in the public domain inviting comments during July 2013 and comments were received up to end of August 2013. He stated that section 88 of the Electricity Act 2003, provides for State Advisory Committee to advice the Commission on policy matters that are to

be decided by the Commission. Hence the meeting was convened to obtain the suggestions of the members. He stated that the Director (Engineering) of the Commission would make a presentation on the Consultative Paper and the Members could offer their comments on various issues.

At the outset, the **Member I** introduced the new member Thiru.G.Rajagopal who took charge as Member II of the Commission on 09-01-2014. He detailed about **Member II's** profile which included the vast experience and achievement of the new Member during his tenure in NLC and TANGEDCO.

The **Member I** briefed the subject matter of the discussion as below:

- Tamil Nadu Solar Energy Policy was issued in October 2012 by the Government of Tamil Nadu ( GoTN) and directions were given to the Commission under Section 108. In the policy , Solar purchase obligation ( SPO) was specified as 3% for 2013 and 6% for 2014.
- The Commission issued Order on “ Issues related to Tamil Nadu Solar Energy Policy” after giving wide publicity by hosting in the website of the Commission and after receipt of comments from stakeholders and after considering all such comments.
- He stated that while the Commission fixes the Renewable Energy Purchase Obligation ( RPO) for the distribution licensee , SPO is fixed by the GoTN for HT consumers and LT Commercial consumers. TANGEDCO is the nodal agency for implementation of SPO.
- The consultative paper on Solar Tariff which covered certain parameters was issued to enable TANGEDCO to buy solar power from solar power generators ( SPG) . In response , suggestions were received from the stakeholders.
- This meeting has been called for to invite suggestions from members of the SAC on the consultative paper.
- This Order would be confined to power purchase by TANGEDCO to meet the RPO.

**Member II** greeted the members of the SAC and expressed thanks to the GoTN for his appointment as Member of the Commission and to Member I for introducing him to the SAC.

He explained the background of the issue of the Solar Energy Policy and stated that the Energy Policy envisaged the addition of 3000 MW of solar energy by 2015.

He also stated that under Section 86 1(e) of the Electricity Act 2003, the Commission has to fix the quantum of power to be purchased from Non conventional energy sources (NCES) and the Commission has to determine the tariff under Section 62.

The **Secretary** requested the Director (Engineering) of the Commission to make the presentation on “Consultative Paper on Comprehensive Tariff Order on Solar Power”.

The **Director (Engineering)** presented the consultative paper covering the following topics.

- Need for comprehensive solar order
- Legal provisions
- Tariff methodologies
- Issues related to Time value of money
- Tariff componants
- Capital cost per MW
- Capacity utilization factor
- Operation and Maintenance cost
- Debt Equity ratio and life of plant
- Interest on loan and period
- Interest on working capital
- Return on equity and depreciation
- Auxilliary consumption
- Solar Tariff

- Other related issues
  - Quantum of solar purchase by TANGEDCO
  - CDM benefits
  - Billing and Payment
  - Control Period
  - Cross Subsidy Surcharge
  - Startup power
  - Stand by charges
  - Open Access Charges and Line Loss
  - Energy Accounting and Billing Procedure
  - Harmonics

**Member I** stated that the

- RPO of TANGEDCO and the impact of cost of solar power would be considered to finalise the order.
- CERC, in its Order of Feb 2013 has considered Rs 8 Crores / MW as capital cost for Solar PV Power Projects. However, in the draft order issued in January 2014, this was reduced to Rs 6.12 Crores / MW for Solar PV Power Projects.

**Thiru.Rajesh Lakhoni, Secretary to Government of Tamil Nadu** informed that there were some variations in the consultative paper with respect to the CERC Order

- While the tariff discovered throughout India was in the range of Rs 6.5 – Rs 7 / unit in major contracts, the tariff as per consultative paper is very low because time value of money is not considered and average tariff has been taken. Therefore, tariff has to be based on pricing existing in other States.
- Imposition of cross subsidy surcharge will hinder the Open access consumers to buy solar power.
- If landed cost is lower than energy charges, the cross subsidy surcharge can be imposed.

- The wheeling and transmission charges to be worked out based on units rather than MW basis.
- The Banking period was one year as per the LT connectivity and Net metering order whereas the banking period was restricted to billing period in the Consultative paper.
- The SPO is over and above the RPO. Instead of this, two suggestions are made (i) to make the SPO within the limit of RPO and (ii) to exempt the captive and third party open access consumers from the RPO/SPO since the RPO has been challenged by them in the Madras High Court.

**Member I** clarified that while RPO is for all consumers, SPO is for certain categories of consumers like HT and LT Commercial as prescribed in the Solar Policy.

**The CMD, TANGEDCO stated that**

- The Commission has notified RPO of 9% under Section 86 1(e) , which has been met by TANGEDCO.
- The RPO which was imposed on captive generators and 3<sup>rd</sup> party OA consumers is under challenge in Madras High Court.
- As per directive of the Commission, SPO is over and above the RPO and this is a big burden on the OA consumers.
- He clarified that SPO is applicable only for HT consumers and LT commercial consumers as per the Policy issued by GoTN.
- He wanted the captive generators and 3<sup>rd</sup> party OA consumers to be exempted from SPO as they are buying power only due to power deficit.
- Consultative paper does not touch the tenders floated by TANGEDCO in 2013. . TANGEDCO has issued LOA for 708 MW to 52 developers and the developers apprehend the impact of the Commission's tariff on the tender discovered rate. Therefore, requested the Commission to state that this tariff should be

prospective, exclusively for the RPO fulfillment of TANGEDCO and to exclude the tender which was already floated.

- As Solar tariff is in its nascent stage, it should be made viable and some comforts should be given to the developers as the SPO also has to be met . Tamil Nadu has a large potential for solar power and therefore, this is to be tapped by giving a viable tariff.
- Since solar panels are being imported from Europe / China, the depreciation of the Indian Rupee against the Dollar / Euro has to be considered.
- While other aspects of tariff components are fine, the tariff rate of Rs 5.78/unit as per consultative paper is very low and hence should be revisited .
- If Accelerated Depreciation ( AD) is given by Government of India to other NCES of power, the eligibility of including AD in the solar tariff should be examined.
- Since requirement for Start up is very low, adjustment should be on net energy basis . This can be reviewed by the Commission after 2-3 years.
- TANGEDCO has given certain comforts to the developers in the LOA like Letter of Credit, Escrow etc. If the tariff is low, TANGEDCO could have secured only 10 MW. However, due to a reasonable tariff, TANGEDCO has received bids for more than 700 MW.

**Thiru J.S.P.Singh, Chief Electrical Engineer, Southern Railways,** questioned that while the tariff in Rajasthan was Rs 6.45/ unit and Rs 6.49/ unit in A.P, why the tariff was high in Tamil Nadu?

**CMD, TANGEDCO** responded that

- Andhra Pradesh's rate of Rs 6.49/unit was based on TANGEDCO's rate of Rs 6.48/unit. A.P's rate is based on substation and they have now gone in for retendering.

- In addition, while other States have gone in for bidding lesser quantum of 100 MWs or so, Tamil Nadu has gone in for a tender of 1000 MW.
- Tamil Nadu's rate is equal to the levelled tariff of CERC.
- If 5% escalation was not given to the developers, the tariff for the 1<sup>st</sup> year would have increased.

**Thiru.Rajesh Lakhoni, Principal Secretary to Government of Tamil Nadu** added that the final rate of Rajasthan is high.

**CMD, TANGEDCO** re-iterated that the cross subsidy surcharge should be reviewed so that it does not deter the OA consumers.

**Thiru K.Gopalakrishnan, TANSTIA** commented that if LT wheeling was allowed, solar tariff would be cheaper to which **CMD, TANGEDCO** responded that net metering can be adopted . **Thiru.Rajesh Lakhoni, Principal Secretary to Government of Tamil Nadu** added that till grid parity was achieved, LT wheeling would not be beneficial.

**Thiru Gopalakrishnan**, further stated that

- Existing tenders received by TANGEDCO should be exempted from this process.
- Appreciation of land cost has not been considered.
- As the cost of PV cell is decreasing, and the commitment towards interest on loans would be over by the 12<sup>th</sup> year , the capital cost can be reduced.

to which **Member I** responded that if all the above was considered, the rates would further decrease . **CMD TANGEDCO** added that presently , the land cost has been frozen for the control period and the Commission may consider the same in the future orders.

**Thiru K.Gopalakrishnan**, further added that

- The cost of Photo voltaic cells is expected to reduce because the rates of the equipments sourced from China is low and that Europe is unwilling to buy from China.
- Insurance and O & M costs will increase as PV cells needs to be regularly cleaned because of dust accumulation.

**Thiru G.S.Rajamani** at the first instance congratulated the Commission on the Concept paper which has detailed a comparison of the rates among other States. His observations were as follows:

- GoTN has stated that the Commission, by nature would be tempted to fix lower rates. As the rates in Karnataka has not been fixed, people might shift to Karnataka if Karnataka fixes a better rate. Therefore, the rate should be reasonable when compared to neighboring States so that migration stops .
- Introduce an early bird incentive by way of 5-10% extra so that solar energy can be promoted.
- SLDCs should exercise proper control and separate instructions have to be given so as to despatch the power from renewable energy sources.
- To ensure that quality power is fed into the grid, inspection procedures to be tightened. The inspection can be done either by TANGEDCO or by the Chief Electrical Inspector to the Government(CEIG).
- The competitive bidding prices where the tender is finalized should not be affected.
- Indigenisation to be encouraged so that the fluctuation of the rupee does not affect the tariff.
- Build a library of cost and other data in the Commission which would provide various kinds of information and data .

**Thiru K.Kathirmathiyon, Secretary, Coimbatore Consumer Cause,** stated that

- Tariff should be both viable and attractive.
- The tariffs should be reasonable so that neither the generator nor the consumers are affected.
- Tenders which are already floated should not be disturbed.

To which **Member I** replied that tender already floated is under Section 63 of the Electricity Act 2003 while this Order would be under Section 62. Therefore, there is no link between the two.

**CMD, TANGEDCO** added that CERC has given the tariff rates with and without Accelerated Depreciation ( AD) with different benefits.

**Thiru K.Kathirmathiyon** further stated that incentives are to be given to the developers. He also opined that the control period should be 2 years to which **Member I** responded that as the rates are on the declining trend, the Commission has proposed one year. However, he assured that his views will be taken into account in finalizing the order.

**Thiru K.Kathirmathiyon** further requested that the banking should be extended to SPGs ( like wind) as an incentive with banking period of 6 months to which **CMD, TANGEDCO** responded that banking is extended for wind due to its seasonal nature but the same is not applicable for solar as it is available for 300 plus days . **Member I** informed that banking is given for billing period i.e one month for HT consumers and two months for LT consumers.

**Thiru K.Kathirmathiyon** requested for 1 % interest per month towards delayed payment since TANGEDCO suggested 'NIL' interest rate in their comment to which **CMD, TANGEDCO** responded that even an interest rate of 12% per annum was a burden. However, he agreed and concurred with the proposition of the Commission.

**Thiru K.Alagu, Vice President, Tamil Nadu Chamber of Commerce & Industry,** stated the following:

- Asked for fixing the time limit for making the payment.
- Tariff should be comparable to other States so that such attractive tariffs can get more investments in the State.

to which **Member I** asked whether the members of the TN - CCI would put up plants at this rate in the State of Tamil Nadu to which **Thiru K.Alagu** responded in the positive, if the prices were better.

**Thiru R.Desikan, Consumers Association of India,** commented that

- Tariff should be reasonable so that a few developers who have started on solar power should not make windfall gains like the wind developers during the initial stages of wind energy promotion.
- If library of cost was available, the dollar rate fixation can be done in advance like forward trading.
- Wanted to know if the Commission was able to ascertain the actual cost of equipments / materials to which **Member I** responded that the actual costs are not generally revealed by the manufacturers / generators.

**CMD, TANGEDCO** further clarified that

- there was a difference between the wind and solar industry.
- There are only 6-7 wind turbine manufacturers in the country in wind sector.
- However, in solar scenario, the prices are discovered through tenders and it is the case of country neutral and technology neutral. Hence TANGEDCO gets competitive rates.

**Thiru J.S.P.Singh, Chief Electrical Engineer, Southern Railways,** requested to allow atleast 0.25% auxiliary consumption for solar PV since invertors are present. He further added that :

- Cross subsidy surcharge should be made Nil
- Reactive power charges should be applied only at the generator end and not at consumer end since power factor disincentive is already in place.
- Penalty as 15% on harmonics is heavy. The equipment to have grid standards and have to be tested and certified at the time of commissioning.
- **CMD, TANGEDCO** stated that if the control period was for two years, the incentive could be given on different pricing for each year.
- **CMD, TANGEDCO** also clarified that the SLDC does not back down the NCES generators unless the grid frequency is on the rise. Only to maintain grid stability, the generators are requested to back down. Wind and Solar generation are out of the Merit Order Despatch.
- **CMD, TANGEDCO** further stated that consumers and the distribution licensee are interested in low cost power and indigenization may not result in low cost. Further, it is within the WTO framework and not the job of the regulator.

**Thiru G..S.Rajamani** clarified that indigenization was monitored by the Gol and it should be ensured that the order is in step with it to which **CMD, TANGEDCO** replied that indigenization may result in higher cost. He also stated that timely payment was agreeable but time limit was not implementable and added that provisions like escrow, LC were made in the tender.

**Thiru K.Kathirmathiyon** stated that compensation (to consumers) need not be linked to interest to which **Member I** replied that compensation could not be taken up in this meeting.

The session came to a close with the concluding remarks of **Member I** which covered the following:

- Renewable energy sources had to be encouraged but at the same time its impact on retail tariff also had to be taken care of. Hence it was required to strike a balance between the two such that the tariff fixed was not too high for the consumers or too low for the SPGs.
- It was essential to see that the Policy has to be fully implemented.
- Members' suggestions on cross subsidy could be considered
- Members' suggestion on transmission and wheeling charges will be considered. For sale to TANGEDCO transmission and wheeling charges will not be levied but for generators consuming their own power, these charges will be applicable.
- The tariff rate will be considered based on comparison with rates of other States. The tender rate was discovered under Section 63 and the present rate is fixed under Section 62 of the Electricity Act, 2003, and therefore both are different.
- The depreciation of the Indian rupee may be considered as well as the falling prices of Solar PV panels have to be taken into account. Since the life period is for 25 years, a balance has to be achieved.
- By and large, CERC and TNERC parameters are the same, but time value of money and accelerated depreciation have not been considered.
- Appreciation of land cost has not been considered, whereas depreciation of the machinery has been considered. It was clarified that it would further reduce the capital cost.

**Thiru.K.Alagu** stated that money value will also change.

**Member I** continued and added that

- Early bird incentive proposal may be considered.

- Inspection process may not be necessary.
- Regarding indigenization, the Solar Policy had provisions for encouragement of the same.
- The Commission has tried to obtain data for determining the capital cost.

**Thiru.G.S.Rajamani** stated that technical magazines would provide information on technology and price.

**Member I** on conclusion stated that the Commission would consider all the suggestions of the SAC members and thanked them.

sd/-

(S. Gunasekaran)

Secretary

Tamil Nadu Electricity Regulatory Commission