

**BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION
AT AHMEDABAD**

ORDER No. 1 of 2009

In the matter of: Tariff for grid interactive Demonstration Solar Power Plants for the purpose of MNRE, GoI Notifications No.32/61/2007-08 PVSE dated 24th January,2008 & No.8/1/2007-08/ST of March,2008.

1. Background :

- 1.1 The preamble to the Electricity Act, 2003 recognizes the significance and importance of promotion of efficient and environmentally benign policies. Section 61(h) of the Electricity Act, 2003 provides that while specifying the terms and conditions of determination of tariff, the Regulatory Commission shall be guided, inter alia, by the promotion of cogeneration and generation of electricity from renewable sources of energy. Section 86(1)(e) of the Act specifies that one of the functions of the Regulatory Commission is to promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and to promote sale of such power to any person. The Regulatory Commission is also required to specify for the purchase of electricity from such sources, a percentage of total consumption of electricity in the area of a distribution licensee.
- 1.2 The National Electricity Policy (NEP) and Tariff Policy notified by the Ministry of Power, Govt. of India under the provisions of the Electricity Act, 2003, emphasizes encouragement to generation of electricity from non-conventional, untapped and renewable energy sources.
- 1.3 GERC, keeping in view the provisions of the Electricity act, 2003, the National Electricity Policy, and Tariff Policy, has notified the regulation on Power Procurement from Renewable Sources (Notification No. 15 of 2005) wherein percentage of total consumption of electricity in the area of a distribution licensee is specified to be purchased from renewable sources of energy.

2. Tariff for Grid Connected Solar Power Plants



2.1 The Ministry of New & Renewable Energy (MNRE), Government of India vide Notification Nos. 32/61/2007-08/PVSE dt.24th January,2008 and No.8/1/2007-08/ST of March,2008 issued policy guidelines for generation based incentive for grid interactive solar power generation projects and launched a demonstration programme to encourage grid interactive power generation from one to five megawatt size solar power plants for sale to the distribution licensee.

3. Discussion paper on Tariff for Grid Connected Demonstration Solar Plants for the purpose of MNRE, GOI Notifications No.32/61/2007-08 PVSE dated 24th January,2008 & No.8/1/2007-08/ST of March,2008.

3.1 The Commission brought out a concept paper on Tariff for Grid Connected Demonstration Solar Plants for the purpose of MNRE, GOI Notification Nos.32/61/2007-08 PVSE dt.24th January,2008 and No.8/1/2007-08/ST of March,2008. Since the tariff to be declared by the Commission is a promotional tariff, with built-in incentive, it shall not be considered as a benchmark for the purpose of determination of tariff from solar power plants in future.

3.2 The Discussion paper was placed on the website of the Commission on 14.7.2008 for inviting comments/suggestions. The last date for filing objections/comments on the discussion paper was fixed as 20.8.2008. In response to the Public notice, the comments/suggestions were received from the various stakeholders.

4. Comments/ suggestions from various stakeholders

4.1 Various stakeholders have given their comments on following parameters:

- (i) Capital cost of the project
- (ii) Return on equity
- (iii) Interest on Loan
- (iv) Depreciation
- (v) Tariff Rate
- (vi) Period of Project and Tariff
- (vii) Renewable Portfolio standards
- (viii) Power Purchase Agreement

4.2 The Commission has in para 4.6 of the Discussion paper stated as under:



With further development in technologies and economies of scale, the production costs for Solar Energy Projects may become viable and competitive or at least comparable to other renewable energy options. It may then be feasible to address the question of tariff determination using capital and finance related Tariff parameters

At this stage, the Commission is of the opinion that in the absence of any standard data, the Commission could not carry out a detailed estimation of the tariff for solar power projects. The present tariff is determined based on the guidelines issued by the Ministry of New Renewable Energy Sources.

5. In the first instance, considering the provisions made in the GOI policy of generation based incentive, the Commission would like to propose tariff for the demonstration projects only. The Commission proposes to link wind energy generation tariff vide its order No.3 dated 11.8.2006 with GOI policy of generation based incentive, that is, the tariff for solar power generation plants be determined as that from wind power plants with GOI notified incentive as premium in addition to such tariff.
- 5.1 According to the MNRE guidelines, wherever the SERC has not announced or is in the process of announcing such tariff, the utility should provide the highest tariff offered for medium term power purchase or maximum tariff fixed for power from any other renewable sources.
- 5.2 As per clause 4.1 of the MNRE guidelines, Rs. 3.37 (Wind energy generation tariff, which is highest among the energy generation tariff)) shall be payable by the distribution licensee to the project developer. The balance amount is to be paid by MNRE, GoI to the Solar Power Project Developer.
- 5.3 So far as incentive for the solar photovoltaic and solar thermal power generations are concerned, the project developer shall be entitled to incentive, over and above tariff, according to MNRE guidelines from the authorities concerned.



6. OTHER GENERAL ISSUES:

6.1 Start up power/ Stand by supply

The STU/Distribution Licensee shall provide start-up power for the solar generator under unit to unit adjustment basis.

6.2 Reactive Power Charges

The Terms & conditions and charges as provided in the Grid Code and the Commission's order on Intra-State ABT Order to such projects will apply.

6.3 Evacuation Facilities:

- a. The interfacing line of appropriate capacity and voltage as per the CEA (Technical Standard for connectivity to the grid) Regulations, 2007 shall be provided by the STU/ Distribution Licensee at their cost. The intending generator shall apply to the STU/ Distribution Licensee concerned well in advance.
- b. The cost of switch gear, metering and protection arrangement at generator end shall have to be borne by the owner of solar generators.
- c. According to clause 5.5 of the guidelines, the grid interactive solar PV/ thermal plant may be connected to preferably 33 KV grid line to minimize power transfer losses. However, the choice of grid voltage may be determined in consultation with the state utility concerned. While formulating the evacuation facilities, the provisions of the grid code and other regulations of the Commission in this regard will be taken care of .

6.4 Applicability of Intra-State ABT

As electricity generated from the solar generating plants is largely based on insolation of solar energy pattern, it cannot be brought within the ambit of Intra-State ABT. Incidentally, Intra-State ABT leads to liabilities in case of deviation from the declared schedules of energy generation. As solar energy cannot be scheduled, the Commission has also kept solar energy generation out of the settlement mechanism linked with UI rate (which comes into play in case of deviations) under Intra state ABT.

6.5 Energy Accounting

The Commission has kept the solar based energy generation projects out of the purview of the Intra-State ABT. However, for the purpose of energy accounting, such projects will have to provide ABT compliant meters at the interface points. Interface metering shall conform to the Central Electricity Authority (Installation and Operation Meters) Regulations, 2006.



6.6 **Power Purchase Agreement (PPA)**

According to clause 4.1 of the MNRE Guidelines, wherever the State Regulatory Commission have fixed a separate tariff for solar power or they fix the tariff for solar power during the period for which the Ministry is providing incentive, the utilities will offer a minimum of that tariff to the solar PV and thermal grid interactive power projects in their respective States. In the absence of such tariff orders, the utilities will offer the highest tariff for purchase of power to the solar PV power project and solar thermal Generation Project developers, that is being offered by the utilities for purchasing power in their respective states on medium term or the highest tariff being provided for purchase of power from any other energy source for which orders/ guidelines are already issued for that state.

The solar generator shall sign PPA with distribution licensee for a period of 25 years with a tariff of Rs.3.37 per KWh. The distribution licensee should sign the PPA within one month from the date of submission of the application with all relevant details for such agreement by the solar generators and get it approved from the Commission.

6.7 **Payment of Security for Power Purchase by Distribution Licensee**

Section 6.2 of the Tariff Policy requires ensuring adequate and bankable payment security arrangements to the generating companies. In the same line the Commission proposes that a bankable security in favour of the generator for an amount equivalent to an average monthly bill shall be opened at the option of the generator by the distribution licensee, in case a PPA is signed for power purchase between distribution licensee and the generator.

6.8 **Billing and Payment to solar generator by Distribution Licensee**

Solar generators will raise bill every month for the net energy supplied after adjusting to the energy in kind for start up power as per this order. The payments to the generators in respect of the energy supplied shall be made by the distribution licensee within the same period and terms & conditions as provided by the distribution licensee to recover payments from its HT Services.

7. **Technical Performance Optimization:**

According to clause 5 of the aforesaid guideline, the project developer has to comply with the technical requirements and to maintain the necessary data and to be provided to IREDA at the time of seeking reimbursement.



8. APPLICABILITY OF THE ORDER

This order shall be applicable only to the grid interactive solar power generation plants which are eligible to avail generation based incentive as per the Ministry of New and Renewable Energy (MNRE) guidelines Nos.32/61/2007-08/PVSE dated 24th January,2008 and No 8/1/2007-08/ST of March, 2008. This order shall come into force from the date of its issue.

Sd/-
[Dr.P.K. Mishra]
Chairman

Sd/-
[K.P.Gupta]
Member(F)

Sd/-
[Dr.Man Mohan]
Member(T)

Place : Ahmedabad
Date : 22nd January,2009

